Appendix A

ECOI
Electronic Communications
Office of Iceland

Draft Market analysis of wholesale markets for local access provided at a fixed location and central access provided at a fixed location for mass-market products

(Markets 3a/2016 and 3b/2016)

Case no. 2022020045

5 April 2024

Table of Contents

SUMMARY AND CONCLUSIONS 7

1 INTRODUCTION 44

1.1 GENERAL 44
1.1.1 ECOI Decision no. 5/2021 on the relevant markets 44
1.1.2 Changes to the market since ECOI Decision no. 5/2021 45
1.2 LEGISLATION AND OTHER LEGAL SOURCES ON ELECTRONIC COMMUNICATIONS 49
1.2.1 Electronic Communications Act no. 70/2022 49
1.2.2 Guidelines and Recommendations from the EFTA Surveillance Authority (ESA) 53
1.2.3 Icelandic government policy in electronic communications 55
1.3 ECOI IMPLEMENTATION OF MARKET ANALYSIS 60

2 DEFINITION OF THE RELEVANT MARKETS 62

2.1 GENERAL ON DEFINITIONS OF SERVICE MARKETS 62
2.2 DEFINITION OF RELEVANT MARKETS, ACCORDING TO ESA RECOMMENDATION AND GUIDELINES 66

3 COMPETITION CIRCUMSTANCES ON RETAIL MARKETS FOR ACCESS TO BROADBAND SERVICE AT A FIXED LOCATION 68

3.1 IN GENERAL 68
3.1.1 Access to electronic communications networks, their use and distribution 69
3.1.2 Supply, price and market share on related retail markets 84
3.1.3 Internet service and Iceland in international context 102
3.1.4 Demand on the market for Internet service 103
3.1.5 Development of offer of various access technologies on the retail market for access at a fixed location 111
3.1.6 Internet service companies' business model 121
3.2 EVALUATION OF COMPETITIVE STATUS ON RELATED RETAIL MARKET FOR BROADBAND ACCESS (INTERNET SERVICE) 123
3.2.1 Varying access technology in broadband access (Internet service) at retail level 124
3.2.2 Wired Internet connections over copper, fibre- and cable systems 127
3.2.3 Distinction between standard broadband access and high-quality access at the retail level 146
3.2.4 Distinction between standard broadband access provided at a fixed location and wireless service 148
3.2.5 Conclusion on definition of the relevant service market at retail level 169
3.2.6 Competition in retail markets 171

4 DEFINITION OF WHOLESALE MARKETS 179

4.1 GENERAL 179
4.1.1 Market analysis according to the Recommendation on the relevant market and explanatory notes in its attached working document 179
4.1.2 Boundary between the wholesale market for access provided at a fixed location, central access and wholesale market for high-quality access 183
4.2 ASSESSMENT OF VARIOUS ACCESS TECHNOLOGY FOR THE WHOLESALE MARKET FOR LOCAL ACCESS (MARKET 3A) 183
4.2.1 General 183
4.2.2 Copper network 184
4.2.3 Fibre networks and assessment of substitutability between fibre and copper local loops 184
4.2.4 Cable systems 189
4.2.5 Wireless access network with fixed use location (WiMax) and satellite 189
4.2.6 Mobile network 190
4.2.7 Self-supply 198
4.2.8 Local access on offer in this country 199
4.2.9 Conclusion regarding definition of market 3a 202

4.3 ASSESSMENT OF VARIOUS ACCESS TECHNOLOGY FOR THE WHOLESALE MARKET FOR CENTRAL ACCESS (MARKET 3B) ... 203
4.3.1 Bitstream access over copper and fibre networks and evaluation of substitutability between such services 203
4.3.2 Cable systems ... 207
4.3.3 Wireless access network with fixed use location and satellite ... 207
4.3.4 Mobile network ... 208
4.3.5 Self-supply ... 217
4.3.6 Central access on offer in this country ... 218
4.3.7 Conclusion regarding definition of market 3b ... 222

5 GEOGRAPHIC MARKET DEFINITION ... 223

5.1 REGULATORY FRAMEWORK AND GUIDELINES WITH RESPECT TO GEOGRAPHIC DEFINITION, ECOI MARKET ANALYSIS PURSUANT TO DECISION NO. 5/2021 AND FOREIGN PRECEDENT ... 223
5.1.1 In general, on analysis of geographic markets ... 223
5.1.2 Electronic communications legislation and Regulation on market analysis in the field of electronic communications ... 228
5.1.3 ESA Guidelines on market analysis and assessment of significant market power ... 229
5.1.4 ESA and EU Commission Recommendation on relevant markets ... 230
5.1.5 BEREC Common Position and Report on geographic analysis ... 238
5.1.6 The impact of next generation networks and number of infrastructure competitors on geographic analysis. 248
5.1.7 The impact of multiple competitors on market 3a on geographic analysis and significant market power in the environment of next generation electronic communications networks. ... 251
5.1.8 The risk and/or gain from geographic measures by area ... 252
5.1.9 Conclusion on geographic analysis in ECOI Decision no. 5/2021 ... 254
5.1.10 Recent market analysis in the EEA relating to geographic definition ... 261
5.2 ARGUMENTS FOR NEED FOR MORE DETAILED GEOGRAPHIC ANALYSIS ... 293
5.3 CHOICE OF GEOGRAPHIC BASE UNITS THAT FORM THE STARTING POINT FOR THE GEOGRAPHIC ANALYSIS ... 294
5.3.1 General ... 294
5.3.2 Conclusion on the choice of geographic base units that form the starting point for the geographic analysis 300
5.4 GEOGRAPHIC ANALYSIS ON RELATED RETAIL MARKETS BY MUNICIPALITY ... 305
5.4.1 General ... 305
5.4.2 Assessment of status on retail markets with respect to geographic analysis ... 310
5.4.3 Conclusion on assessment of status on retail markets with respect to geographic analysis by area 342
5.5 GEOGRAPHIC DEFINITION ON MARKET 3A ... 345
5.5.1 General ... 345
5.5.2 Geographic assessment of market 3a ... 348
5.5.3 Criteria for grouping of municipalities into geographic markets and conclusion of the categorisation ... 395
5.5.4 Conclusion of geographic definition of markets on market 3a ... 399
5.6 GEOGRAPHIC DEFINITION ON MARKET 3B ... 400
5.6.1 General ... 400
5.6.2 Geographic analysis on market 3b ... 402
5.6.3 Criteria for grouping of municipalities into geographic markets and conclusion of the categorisation ... 418
5.6.4 Conclusion of geographic definition of markets on market 3b ... 422

6 ASSESSMENT OF SIGNIFICANT MARKET POWER ON MARKETS 3A AND 3B ... 423

6.1 GENERAL ... 423
6.1.1 Introduction ... 423
6.1.2 Market share ... 424

6.1.3 The main long-term access agreements related to markets 3a and 3b in this country 426
6.1.4 Total size of the main electronic communications companies and profitability 442
6.1.5 Entry barriers 447
6.1.6 Competition problems on the market in question 468
6.2 ASSESSMENT OF SIGNIFICANT MARKET POWER ON MARKET 3A 477
6.2.1 Introduction 477
6.2.2 Area A 480
6.2.3 Area B 484
6.2.4 Area C 486
6.2.5 Akureyrarbær 488
6.2.6 Árneshreppur 489
6.2.7 Ásahreppur 492
6.2.8 Bláskógabyggð 493
6.2.9 Bolungarvíkurkaupstaður 496
6.2.10 Dalabyggð 498
6.2.11 Eyja- og Miklaholtshreppur 500
6.2.12 Fjallabyggð 501
6.2.13 Fljótsdalshreppur 503
6.2.14 Flóahreppur 505
6.2.15 Grindavíkurbær 506
6.2.16 Grímsnes- og Grafningshreppur 508
6.2.17 Hrunamannahreppur 509
6.2.18 Hvalfjarðarsveit 511
6.2.19 Ísafjarðarbær 513
6.2.20 Kjósarhreppur 514
6.2.21 Múlaþing 516
6.2.22 Mýrdalshreppur 518
6.2.23 Norðurþing 519
6.2.24 Rangárþing eystra 521
6.2.25 Rangárþing ytra 522
6.2.26 Reykhólahreppur 524
6.2.27 Reykjanesbær 525
6.2.28 Seltjarnarnesbær 527
6.2.29 Skaftárhreppur 532
6.2.30 Skeiða- og Gnúpverjahreppur 534
6.2.31 Skorradalshreppur 535
6.2.32 Suðurnesjabær 536
6.2.33 Súðavíkurhreppur 537
6.2.34 Sveitarfélagið Árborg 538
6.2.35 Sveitarfélagið Vogar 540
6.2.36 Sveitarfélagið Ölfus 541
6.2.37 Tjörneshreppur 542
6.2.38 Vestmannaeyjabær 543
6.2.39 Vopnafjarðarhreppur 545
6.2.40 Conclusion on assessment of electronic communications companies with significant market power on Market 3a 546
6.3 ASSESSMENT OF SIGNIFICANT MARKET POWER ON MARKET 3B 549
6.3.1 Introduction 549
6.3.2 Area A 551
6.3.3 Area B 554
6.3.4 Akureyrarbær 556
6.3.5 Árneshreppur 557
6.3.6 Ásahreppur 559

6.3.7 Bláskógabyggð 560
6.3.8 Bolungarvíkurkaupstaður 561
6.3.9 Dalabyggð 562
6.3.10 Dalvíkurbyggð 563
6.3.11 Eyja- og Miklaholtshreppur 564
6.3.12 Eyjafjarðarsveit 565
6.3.13 Fjallabyggð 566
6.3.14 Fljótsdalshreppur 568
6.3.15 Flóahreppur 569
6.3.16 Grindavíkurbær 570
6.3.17 Grímsnes- og Grafningshreppur 571
6.3.18 Grundarfjarðarbær 572
6.3.19 Grýtubakkahreppur 573
6.3.20 Hrunamannahreppur 574
6.3.21 Hvalfjarðarsveit 575
6.3.22 Hörgársveit 576
6.3.23 Kjósarhreppur 577
6.3.24 Múlaþing 578
6.3.25 Mýrdalshreppur 579
6.3.26 Norðurþing 580
6.3.27 Rangárþing eystra 581
6.3.28 Rangárþing ytra 583
6.3.29 Reykhólahreppur 584
6.3.30 Seltjarnarnesbær 585
6.3.31 Skaftárhreppur 589
6.3.32 Skeiða- og Gnúpverjahreppur 590
6.3.33 Skorradalshreppur 591
6.3.34 Suðurnesjabær 592
6.3.35 Súðavíkurhreppur 593
6.3.36 Svalbarðsstrandarhreppur 594
6.3.37 Sveitarfélagið Árborg 595
6.3.38 Sveitarfélagið Vogar 596
6.3.39 Sveitarfélagið Ölfus 598
6.3.40 Tjörneshreppur 599
6.3.41 Vestmannaeyjabær 600
6.3.42 Vesturbyggð 601
6.3.43 Vopnafjarðarhreppur 602
6.3.44 Þingeyjarsveit 604
6.3.45 Conclusion on assessment of electronic communications companies with significant market power on Market 3b 605

7 COMPETITION PROBLEMS, WHOLESALE-ONLY COMPANIES AND IN GENERAL ON IMPOSITION OF OBLIGATIONS 608

7.1 IN GENERAL, ON OBLIGATIONS 608
7.2 IMPOSITION OF OBLIGATIONS PURSUANT TO ELECTRONIC COMMUNICATIONS LEGISLATION AND REGULATION ON MARKET ANALYSIS 611
7.3 DECISION ON WHETHER MILA, LJÓSLEIÐARINN, TENGIR AND AUSTURLJÓS FULFIL LEGAL CONDITIONS TO BE DEEMED WHOLESALE-ONLY COMPANIES 615
7.3.1 In general, on provisions of Article 59 of the Electronic Communications Act on wholesale-only companies 615
7.3.2 Decision on whether Mila is considered to fulfil legal conditions to be deemed a wholesale-only company 618

7.3.3 Decision on whether Ljósleiðarinn is considered to fulfil legal conditions to be deemed a wholesale-only company 621
7.3.4 Decision on whether Tengir is considered to fulfil legal conditions to be deemed a wholesale-only company 622
7.3.5 Decision on whether Austurljós is considered to fulfil legal conditions to be deemed a wholesale-only company 623
7.4 Obligations on force on Mila pursuant to ECOI provisional Decision no. 9/2023 623
7.5 Competition problems on the relevant markets 628
7.5.1 In general, on competition problems 628
7.5.2 Competition problems on market 3a 631
7.5.3 Competition problems on market 3b 657
7.6 Assessment of impact of the obligations in force on Míla 690

8 IMPOSITION OF OBLIGATIONS ON MÍLA ON MARKET 3A 694

8.1 In general, on designating electronic communications companies with significant market power on specific geographic markets 694
8.2 Assessment of necessity for obligations on Mila on market 3a and grounds for this 696
8.2.1 General 696
8.2.2 The settlement between Mila and CA from 15 September 2022 705
8.3 Imposition of obligations on Míla on market 3a 710
8.3.1 General 710
8.3.2 Obligation to provide access 711
8.3.3 Obligation for non-discrimination on Míla on market 3a 742
8.3.4 Obligation for price control 749

9 IMPOSITION OF OBLIGATIONS ON TENGIR ON MARKET 3A 761

9.1 In general, on designating electronic communications companies with significant market power on specific geographic markets 761
9.2 Assessment of necessity and grounds for imposition of obligations on Tengir on market 3a 761
9.3 Imposition of obligations on Tengir on market 3a 768
9.3.1 General 768
9.3.2 Obligation to provide access 768
9.3.3 Obligation for non-discrimination on Tengir on market 3a 782
9.3.4 Obligation for fair and reasonable pricing 786

10 IMPOSITION OF OBLIGATIONS ON LJÓSLEIÐARINN ON MARKET 3A 789

10.1 In general, on designating electronic communications companies with significant market power on specific geographic markets 789
10.2 Assessment of necessity and grounds for imposition of obligations on Ljósleiðarinn in the Sveitarfélagið Ölfus on market 3a 789
10.3 Imposition of obligations on Ljósleiðarinn on market 3a 796
10.3.1 General 796
10.3.2 Obligation to provide access 796
10.3.3 Obligation for non-discrimination on Ljósleiðarinn on market 3a 808
10.3.4 Obligation for fair and reasonable pricing 811

11 IMPOSITION OF OBLIGATIONS ON MILA ON MARKET 3B 814

11.1 In general, on designating electronic communications companies with significant market power on specific geographic markets 814
11.2 Assessment of necessity and grounds for imposition of obligations on Mila on market 3b 816
11.3 Imposition of obligations on Mila on market 3b 822
11.3.1 General 822
11.3.2 Obligation to provide access 822

11.3.3 Obligation for non-discrimination 829
11.3.4 Obligation for fair and reasonable pricing 837

12 IMPOSITION OF OBLIGATIONS ON LJÓSLEIÐARINN ON MARKET 3B 839

12.1 In general, on designating electronic communications companies with significant market power on specific geographic markets 839
12.2 Assessment of necessity and grounds for imposition of obligations on Ljósleiðarinn in the Sveitarfélagið Ölfus on market 3a 839
12.3 Imposition of obligations on Ljósleiðarinn on market 3b 844
12.3.1 General 844
12.3.2 Obligation to provide access 844
12.3.3 Obligation for non-discrimination 848
12.3.4 Obligation for fair and reasonable pricing 850

13 IMPOSITION OF OBLIGATIONS ON AUSTURLJÓS ON MARKET 3B 852

13.1 In general, on designating electronic communications companies with significant market power on specific geographic markets 852
13.2 Assessment of necessity and grounds for imposition of obligations on Austurljós on market 3b 852
13.3 Imposition of obligations on Austurljós on market 3b 857
13.3.1 General 857
13.3.2 Obligation to provide access 857
13.3.3 Obligation for non-discrimination 858

14 COMING INTO FORCE AND WITHDRAWAL OF OBLIGATIONS 861

Summary and Conclusions

This decision replaces the preliminary decision regarding the market analysis of markets 3a and 3b in case no. 9/2023, dated 15 September 2023 which replaced the Electronic Communications Office of Iceland (ECOI) Decision no. 5/2021, dated 19 October 2021 on the designation of undertakings with significant market power and the imposition of obligations on the wholesale markets for local access provided at a fixed location (market 3a) and central access provided at a fixed location for mass-market products (market 3b). In Decision no. 5/2021, ECOI came to the conclusion of maintaining the designation of Mila ehf. (Mila), see Post and Telecom Administration (PTA) Decision no. 21/2014, as an undertaking with significant market power and the imposition of obligations on the company on the markets in question. ECOI furthermore designated Siminn hf. (Siminn) as having such status on the relevant markets and imposed limited obligations on that company, as the companies were then in the same company group and were vertically integrated, thus one economic unit in the understanding of competition law. The draft decision was made in the light of an ESA opinion on re-evaluation of geographic definitions of markets in the run-up to Decision no. 5/2021, of the ruling of the Appellate Committee for Electronic Communications and Postal Affairs (the Committee) in case no. 3/2021 dated 29 December 2022 and of significant changes to market circumstances that have taken place since Decision no. 5/2021 was made and published.

When preparing this decision, ECOI opened consultation on the draft decision in three parts. The first consultation commenced on 15 September 2023, where the consultation draft covered analysis of the relevant service markets, geographic analysis, assessment of competitive status in the various geographic markets and designation of parties with significant market power in specific geographic markets. The second consultation was then opened on 29 November 2023, where the consultation draft related to a description of competition problems, a decision on whether parties with significant market power fulfilled legal provisions to be considered wholesale-only companies, and elaboration of obligations on those companies that were considered in the opinion of ECOI to have significant market power on specific geographic markets. The third consultation commenced on 23 January 2024, which was an additional consultation that related to very specific aspects of the market analysis. The consultation related to amendments to assessment of significant market power in Rangárþing eystra on market 3b, to assessment of whether Ljósleiðarinn and Tengir should be deemed wholesale-only companies and to amendments to the elaboration of obligations for notification of civil works and on the coming into force of that obligation vis-à-vis new parties.

In the light of comments received from prior consultations, and also in the light of updated wholesale data for the first half of 2023, ECOI investigated whether the above specified views and data would change anything with regards to designation of parties as having significant market power on any of the very many geographic markets of the case. The conclusion of the above specified investigation is that there are thought to be grounds to amend assessment of significant market power on four of the geographic markets of the case, i.e. Súðavíkurhreppur, Vopnafjarðarhreppur, Fljótsdalshreppur and Rangárþing eystra, either on both markets 3a or 3b or one of them. ECOI however considered, after a detailed additional investigation, that there were not justifiable grounds to amend the assessment for Seltjarnarnesbær. ECOI decided however not to embark on the work of updating all market

analyses statistics from mid-2023, which are only updated in chapters that discuss significant market power in these municipalities. In Appendix C one can however see market share in all geographic markets from mid-2021 up to the status in mid-2023, at five points in time. There one can also find a conclusion on deployment of networks in mid-2023.

In the light of comments received from Mila, Siminn and Nova on the above specified consultation on the second part of the market analysis draft, which lasted from 29 November 2023 until 3 January 2024, ECOI made a closer examination of whether Ljósleiðarinn and Tengir operate at retail level in electronic communications and thus would not fulfil the legal provisions of Article 59 of the Electronic Communications Act to be deemed wholesale-only companies, and ECOI has a limited number of obligations at its disposal where companies are designated as such. The ECOI conclusion is that the companies do not fulfil legal provisions, and that this nevertheless means that ECOI does not plan to prescribe further obligations on the companies than were specified in the preliminary draft. In the initial draft market analysis, Mila was however deemed to fulfil the legal provisions in question because of its ownership relationship with an electronic communications company within the EEA which conducts retail operations in the EEA Area, what is called the ownership condition, and ECOI does not propose an amendment to this assessment in this case. After a closer examination of Ljósleiðarinn and Tengir operations it also came to light that nor does Mila fulfil the condition in question relating to retail operations in this country, to be deemed a wholesale-only company.

With respect to the prior ECOI Decision no. 5/2021, its main conclusions were to the effect that there was no effective competition on related retail markets at national level, that substitutability was in place between local loops and bitstream access over copper and fibre, and that it was not justifiable to segment geographical markets in this country, as competitive conditions were not sufficiently heterogeneous between areas nor sufficiently stable. Geographic markets of the relevant wholesale markets were defined as being the country as a whole, despite the fact that competitive conditions were deemed to differ somewhat between the country's municipalities. ECOI also considered that the conditions did not differ sufficiently to justify geographically segmented markets, but that they were sufficiently different to justify milder obligations in 17 specified municipalities in the country, including the whole of the Capital City Area.

With two appeals, both dated 15 November 2021, both Mila and Siminn appealed the above specified ECOI decision to the Appellate Committee Electronic Communications and Postal Affairs (the Committee). In the Committee's ruling of 29 December 2022, it was noted that it was not an option to rescind the ECOI decision in its entirety, but that it was important to conduct new market analysis of the above specified markets, and that until such an analysis was issued, obligations pursuant to the appealed decision should continue to be in force with specific amendments resulting from the sale of Mila. It was thus the conclusion of the Committee to ask ECOI to conduct new market analysis and complete it by the coming 15 September 2023.

In the light of the fact that ECOI became aware in communications with parties to the market that specific companies considered that legal uncertainty would prevail on the market after the above specified deadline, ECOI decided to make a provisional decision which was issued concurrently with the first consultation document, in order to dispel all uncertainty about the

legal status that would prevail after15 September 2023 and until a new ECOI decision was issued.

As the year 2022 progressed, the ECOI preliminary investigation of geographic analysis of local loop and bitstream markets, had already shown that there was reason to conduct that analysis from scratch, on the basis of changed circumstances, as ESA had indicated in its opinion on the prior ECOI market analysis of the relevant markets. The process for the sale of Mila from the Siminn Group had also commenced and significant changes of circumstances on the electronic communications market were on the horizon, were the transaction to be completed, which was what happened with the settlement between parties to the merger and the Competition Authority on 15 September 2022. An important prerequisite for ECOI being able to commence work on the market analysis was the conclusion in the Mila and Siminn appeal for rescinding the prior ECOI market analysis, which was not issued until 29 December 2022. As many events had taken place during the period of almost 14 months in which the Committee had had the case for processing, ECOI was faced with a large and wide-reaching task.

According to Article 8 of the regulation on implementation of market analysis no. 556/2023 and in the Commission and ESA Guidelines on market analysis and assessment of significant market power, the point of departure for all analyses should be assessment of the relevant retail markets with respect to demand supply-side substitutability from the end user perspective, and account must be taken of expected developments in market circumstances over the planned duration of validity of the analysis. When the relevant retail market has been defined, with respect to the product types that belong to the market, an assessment shall be made of whether there is a risk of consumer interests being harmed as a result of lack of competition if no obligations were in place on the underlying wholesale markets. This is done later in Section 3. If this is the case, the underlying wholesale markets shall be defined, see section 4 here below. In section 5 there is more detailed discussion on the relevant retail and wholesale markets with respect to geographic analysis, and boundaries were drawn between areas where effective competition was deemed to prevail and thus no need for obligations at wholesale level in such areas, and the areas where there might be a need for obligations. In section 6, the competitive situation was investigated on individual geographic markets through an assessment of significant market power.

Section three, as previously stated, deals with competitive conditions on the retail market of the relevant markets. In section 3.1, there is a detailed discussion on the status of the retail market for broadband connections and broadband service at a fixed location, both with respect to fixed line and mobile networks. In section 3.2, an assessment is then made of the competitive position on the related retail market for broadband access. The ECOI conclusion regarding retail markets for standard broadband access is that the following services belong to the retail market:

- Broadband connections over copper network with VDSL technology.
- Fibre connections.
- Connections through cable systems.
- Connections through 4/4.5G and 5G (and future mobile phone generations) that are provided through electricity mains connected network routers.

An assessment is made of competition on retail markets in section 3.2.6, where in this chapter, ECOI concludes that if wholesale obligations were not in place, network operators could - at least in areas where competition is not adequate on the retail market - possibly leverage economic strength to hinder effective competition and could operate to a significant degree without consideration for competitors, customers or consumers.

This meant that the next step for ECOI was to define the relevant wholesale markets underlying retail of Internet connections. With respect to definition of market 3a, it is the ECOI conclusion that the wholesale market 3a for local access with a fixed line connection comprises access to physical connections in access networks in copper and fibre networks, along with corresponding virtual network solutions that fulfil the conditions described in the Guidelines to the ESA Recommendation on the relevant markets from 11 May 2016.

With respect to definition of market 3b, it is the ECOI conclusion that the wholesale market 3b for central access comprises virtual solutions offered centrally in fibre networks, copper networks to which VDSL equipment has been connected and mobile network solutions on 4G/4.5G and 5G (and future mobile network generations) through mains connected network routers at a fixed location of use, that do not fulfil the conditions to be considered to belong to market 3a and are used to provide central mass-produced bitstream service. ECOI considers that all connections to the networks in question that fulfil the above specified criteria belong to the relevant wholesale market and that there is no reason to segment sub-national markets by varying technical solutions. ECOI considers that there is substitutability between differing solutions on these networks and with this in mind one must also conclude that there is also substitutability in wholesale in the relevant market. Self-supply of companies and company groups in the relevant market are part of the market. Central access through cable systems, wireless access network with fixed use location (FWA), satellite and other kinds of mobile phone service than specified above do not belong to the relevant service market.

There is discussion on geographic analysis of the relevant markets in section 5, but in the light of increased importance of geographic analysis in market analysis of the relevant markets in Europe during recent years, of increased deployment of fibre networks across the country and increased market share of Mila competitors, ECOI considered it appropriate to conduct detailed geographic analysis. ECOI has come to the conclusion that municipalities are the most appropriate base units to form a starting point for the geographic analysis. It was not possible to assert that there was effective competition in any municipality in this country on the basis of status on retail markets, despite the fact that wholesale obligations had rested on Mila on the relevant wholesale markets for many years. The status on the retail markets in question would without doubt have been different, even in areas where more competition prevailed, if it had not been for the above specified wholesale obligations. For this reason, ECOI considered it important to continue analysing the situation on the relevant markets.

On market 3a, the conclusion of geographic definition was that the geographic market on market 3a comprised 38 specified areas.

Area A - Probable competition

8 municipalities fulfilled ECOI conditions for probable competition on market 3a. They are:

- Akraneskaupstaður
- Borgarbyggð

- Garðabær
- Hafnarfjarðarkaupstaður
- Hveragerðisbær
- Kópavogsbær
- Mosfellsbær
- The City of Reykjavík

Area B - Mila with high market share

In area B, municipalities are categorised together where the deployment of parallel fixed line networks is small, i.e. below 40%, where Mila market share on market 3a is higher than 70% and where there is one electronic communications company with over 50% market share in the retail market. 15 municipalities fulfil these conditions, and they are:

- Fjarðabyggð
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Tálknafjarðarhreppur
- Vesturbyggð

Area C- Tengir with high market share

In area C, six municipality are categorised together where the Tengir market share on market 3a was greater than 70% at the end of 2022 and the company's fibre deployment is wide-reaching in that municipality, and in addition to this the deployment of other parties is limited and has not been growing. Furthermore, there is one telecommunications company with over 50% market share in the retail market in these municipalities. The municipalities that fulfil the above specified conditions are following:

- Eyjafjarðarsveit
- Dalvíkurbyggð
- Grýtubakkahreppur
- Hörgársveit
- Svalbarðsstrandarhreppur

- Þingeyjarsveit

Municipalities not categorised in Areas A, B or C

Other municipalities that are not categorised by the above specified conditions or that ECOI wishes to examine specifically, each individually, because of potential changes in the municipality, are each defined as a separate geographic market. These 35 municipalities are:

- Akureyrarbær
- Árneshreppur
- Ásahreppur
- Bláskógabyggð
- Bolungarvíkurkaupstaður
- Dalabyggð
- Eyja- og Miklaholtshreppur
- Fjallabyggð
- Fljótsdalshreppur
- Flóahreppur
- Grindavíkurbær
- Grímsnes- og Grafningshreppur
- Hrunamannahreppur
- Hvalfjarðarsveit
- Ísafjarðarbær
- Kjósarhreppur
- Múlaþing
- Mýrdalshreppur
- Norðurþing
- Rangárþing eystra
- Rangárþing ytra
- Reykhólahreppur
- Reykjanesbær
- Seltjarnarnesbær
- Skaftárhreppur
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Suðurnesjabær
- Súðavíkurhreppur
- Sveitarfélagið Árborg
- Sveitarfélagið Vogar

- Sveitarfélagið Ölfus
- Tjörneshreppur
- Vestmannaeyjabær
- Vopnafjarðarhreppur

On market 3b, the conclusion of geographic analysis is that the geographic market on market 3b comprised a further specified 43 areas.

Area A - Probable competition

The following 10 municipalities fulfil ECOI conditions for areas that were probably competitive:

- Akraneskaupstaður
- Borgarbyggð
- Garðabær
- Hafnarfjarðarkaupstaður
- Hveragerðisbær
- Ísafjarðarbær
- Kópavogsbær
- Mosfellsbær
- Reykjanesbær
- The City of Reykjavík

Area B - Mila with high market share

In area B, municipalities are categorised together where the deployment of fixed line networks is small, i.e. below 40%, where Mila market share on both markets 3a and 3b is higher than 70% and where there is one electronic communications company with over 50% market share on the retail market. The 13 municipalities that fulfil these conditions are:

- Fjarðabyggð
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Tálknafjarðarhreppur

Municipalities not categorised in Areas A or B

Those 41 municipalities that are not categorised under area A or B or that ECOI wishes to examine specifically, are each defined as a separate geographic market:

- Akureyrarbær
- Árneshreppur
- Ásahreppur
- Bláskógabyggð
- Bolungarvíkurkaupstaður
- Dalabyggð
- Dalvíkurbyggð
- Eyja- og Miklaholtshreppur
- Eyjafjarðarsveit
- Fjallabyggð
- Fljótsdalshreppur
- Flóahreppur
- Grindavíkurbær
- Grímsnes- og Grafningshreppur
- Grundarfjarðarbær
- Grýtubakkahreppur
- Hrunamannahreppur
- Hvalfjarðarsveit
- Hörgársveit
- Kjósarhreppur
- Múlaþing
- Mýrdalshreppur
- Norðurþing
- Rangárþing eystra
- Rangárþing ytra
- Reykhólahreppur
- Seltjarnarnesbær
- Skaftárhreppur
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Suðurnesjabær
- Súðavíkurhreppur

- Svalbarðsstrandarhreppur
- Sveitarfélagið Árborg
- Sveitarfélagið Vogar
- Sveitarfélagið Ölfus
- Tjörneshreppur
- Vestmannaeyjabær
- Vesturbyggð
- Vopnafjarðarhreppur
- Þingeyjarsveit

In section 6, competitive conditions on the relevant markets were assessed with the main influencing factors in mind. Subsequently, in section 6.2 and 6.3, an assessment was made of whether any undertaking had significant market power on the relevant geographic market. In this regard, market share, financial strength of market players, entry barriers and competition on the relevant market are among the aspects that are taken into account. Elements such as sales and service systems, whether the electronic communications company in question can offer the same customers varied service because of access to a broad product offer, electronic communications networks etc., are also important.

Assessment of significant market power on the 38 geographic markets belonging to market 3a produced the following conclusions:

As previously stated, eight municipalities are categorised under **area A** on market 3a. ECOI has assessed significant market power in area A and has come to the conclusion that there is effective competition on market 3a in those municipalities belonging to area A and that this will be the case throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be withdrawn in this area.

Assessment of significant market power in **area B** showed that it is perfectly clear that Mila has significant market power in those 15 municipalities belonging to that area and that this will be the case throughout the planned lifetime of the analysis. ECOI therefore considers it necessary to maintain obligations on Mila in this area.

With respect to **area C**, which contains six municipalities, ECOI considers that Tengir has significant market power on market 3a and that it is necessary to impose appropriate obligations on the company on the relevant market.

An assessment was then made of those municipalities that are not covered by the conditions for areas A, B and C, or the municipalities that ECOI considered to need closer examination, which is a total of 35 municipalities. Summarised conclusions of the assessment are as follows:

- **Akureyrarbær** – Tengir has conducted substantial fibre deployment in the municipality for many years and the company's fibre deployment had reached about 92% of legal residences and workplaces at the end of 2022. There does not appear to be much uptake of the Mila fibre network in the area, and it seems that local people show Tengir great loyalty, and this is not expected to change significantly during the expected lifetime of the analysis. ECOI considers that Tengir has significant market

power on market 3a and that it is necessary to impose appropriate obligations on the company on the relevant market.

- **Árneshreppur** – The municipality has commenced fibre deployment in its area and its deployment had reached about 20% of legal residences and workplaces at the end of 2022. ECOI expects that Árneshreppur will deploy fibre to most residences in the municipality, and this is a state aid initiative. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time, will be withdrawn.

- **Ásahreppur** – Ásahreppur was one of the first municipalities to deploy fibre to its area and this fibre network has been operated as an open network where Mila and Ljósleiðarinn (Sýn before) operate bitstream service. The Ásahreppur fibre deployment reached about 76% of residences and workplaces at the end of 2022. ECOI does not expect that another network operator will embark on fibre deployment in the municipality during the period of validity of this market analysis. ECOI considers there to be no grounds to designate the owner of the fibre network in question as an undertaking with significant market power. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be withdrawn.

- **Bláskógabyggð** – This is a region with a large summerhouse area, and also with three small urban nuclei, i.e. Laugarvatn, Reykholt and Laugarás. There is a local state aid fibre network owned by the municipality, Bláskógarljós, which reached 34% of residences and workplaces at the end of 2022. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. On the other hand, ECOI considers that Mila has significant market power in the municipality in question. The company has 58% market share which ECOI believes will not go below 50% before the end of the expected lifetime of the analysis. The fixed line networks of Mila and Bláskógaljós are to a large extent, each in their own area within the municipality and there is negligible parallel network coverage there. Mila countervailing buying power and the strong Siminn position in retail were also taken into account in the assessment, as Siminn is an important Mila customer. Appropriate obligations will be imposed on Mila on market 3a in Bláskógabyggð.

- **Bolungarvíkurkaupstaður** – Snerpa has deployed fibre in the rural area for the municipality and the company has continued to deploy fibre to the urban area. The company's fibre reached 42% of residences and workplaces at the end of 2022. Snerpa has continued fibre deployment in the municipality during the year 2023 and has plans for further deployment in the coming years. ECOI considers there to be no grounds for maintaining the Mila designation as having significant market power. Mila fibre deployment in the municipality was under 3% at the end of 2022, and there are no signs of planned fibre deployment by Mila in the area. The obligations that have rested on Mila will therefore be withdrawn in this area.

- **Dalabyggð** – ECOI considers there to be no grounds to designate the fibre network of the municipality as having significant market power. The fixed line networks of Mila and Dalaveitur are to a large extent, each in their own area within the municipality

and there is negligible parallel network coverage there. In this area, Mila has a fixed line network that is difficult for others to duplicate, and in addition to this there is no indication that any party has strong countervailing buying power vis-à-vis Mila. Furthermore, Siminn's strong position in retail has a certain impact that strengthens Mila's position in the municipality in question. ECOI considers it therefore necessary to impose appropriate obligations on Mila on market 3a in Dalabyggð.

- **Eyja- og Miklaholtshreppur** – In this area, there is a local fibre network owned by the municipality, which reached 73% of legal residences and workplaces at the end of 2022, or 92% if one only counts legal residences. Parallel network coverage is almost non-existent in the municipality. ECOI considers there to be no grounds to designate Eyja- og Miklaholtshreppur as having market dominance, as this is not a profit driven project. In this connection, see detailed discussion in section 6. Mila has strong countervailing buying power vis-à-vis the network, as the only bitstream operator in the area. The obligations that have rested on Mila in the municipality in question up to this point in time, will therefore also be withdrawn.

- **Fjallabyggð** – There is a fibre network owned by Tengir which reached 46% of residences and workplaces at the end of 2022. Part of the Tengir fibre network, i.e. the rural area, was developed in cooperation with the municipality and enjoyed state aid. Mila, however, had 65% market share on the relevant wholesale market at the end of 2022. ECOI considers it unlikely that parallel network coverage will increase in such a manner that this position will change during the lifetime of the analysis. ECOI considers that Mila has significant market power and obligations will thus be imposed on Mila in this municipality.

- **Fljótsdalshreppur** – In this municipality there is a local fibre network owned by the municipality, which reached 88% of legal residences and workplaces at the end of 2022, and 97% if one only counts legal residences. There is no parallel network coverage in the municipality and as there is no urban area in the municipality. ECOI does not expect that this will happen during the period of validity of the analysis. ECOI considers there to be no grounds to designate the owner of the fibre network in question as a party with significant market power. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will therefore also be withdrawn.

- **Flóahreppur** – In this municipality there is a local fibre network, Flóaljós, owned by the municipality, and this deployment enjoyed state aid. Flóaljós has 97% market share, and it is not expected that this share will decrease in the future. ECOI however considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be withdrawn.

- **Grímsnes- og Grafningshreppur** – There is a fibre network owned by Mila in this municipality, at least in part, developed in cooperation with the municipality, and which enjoyed state aid. Mila has an overwhelmingly dominant market share on the relevant market, 98%, and this has remained unchanged during recent times. ECOI considers that Mila has significant market power in the municipality and that it is

therefore necessary to impose appropriate obligations on Mila on the relevant market.

- **Grindavíkurbær** – There is a fibre network owned by Mila in the municipality. It is established that Ljósleiðarinn ehf. (Ljósleiðarinn) and Mila have decided to cooperate on deployment of fibre in Grindavík which was to commence in 2023. Míla has 98% market share, and it is not expected that this share will decrease significantly during the lifetime of this analysis. ECOI considers that Mila has significant market power in the municipality and that it is therefore necessary to impose appropriate obligations on Mila on the relevant market.

- **Hrunamannahreppur** – There is a local fibre network, Hrunaljós, in Hrunamannahreppur which is owned by the municipality. Fibre deployment by other parties in the municipality is almost non-existent. Fibre deployment in the municipality is 79% when one considers residences and workplaces, but currently 94% of residences have access to fibre. One can therefore say that fibre has been deployed to a large extent in Hrunamannahreppur. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. The obligations that have rested on Mila in the municipality in question on market 3a will therefore also be withdrawn.

- **Hvalfjarðarsveit** – The municipality has 73% market share on the relevant wholesale market, which has been on the increase recently, and it is not expected that this share will decrease in the future. ECOI however considers there to be no grounds to designate Hvalfjarðarsveit as having market dominance. The obligations that have rested on Mila in the municipality in question on market 3a will therefore be withdrawn.

- **Ísafjarðarbær** – Both Mila and Snerpa have a local loop network in Ísafjarðarbær. ECOI considers from a forward-looking perspective, that the tendency is towards active competition on market 3a in Ísafjarðarbær and that this will continue throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be withdrawn in this municipality.

- **Kjósarhreppur** – In the municipality there is a local fibre network, Leiðarljós, owned by the municipality, and this deployment enjoyed state aid. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. There is no fibre deployment by other parties in the municipality and copper local loops are no longer available in the municipality. The obligations that have rested on Mila in the municipality in question on market 3a will therefore be withdrawn.

- **Múlaþing** – There are several local fibre networks in Múlaþing, where the Mila deployment is most advanced. Significant parallel coverage of fibre networks is not expected to be in place during the period of validity of the analysis. There is some coverage of mobile network routers in the municipality, but in the opinion of ECOI there is no significant indirect competitive impact from mobile networks. ECOI considers that Mila has significant market power in Múlaþing and that it is therefore necessary to impose appropriate obligations on Mila on the relevant market.

- **Mýrdalshreppur** – There is a local fibre network, Líf í Mýrdal, in the municipality, which did not enjoy state aid. Ljósleiðarinn purchased the network in 2023. Most Mila local loops are copper. In the opinion of ECOI there is indirect competitive impact from mobile networks in the municipality and one must take their impact into account when assessing Mila market share. ECOI considers that from a forward-looking perspective there will be active competition on market 3a during the period of validity of the analysis. The obligations that have rested on Mila will therefore be withdrawn in this municipality.

- **Norðurþing** – The Mila fibre network has recently grown significantly in the municipality, and the fact that there is little usage of mobile network routers means that there is not much indirect competitive impact from mobile networks. Despite considerable fibre deployment by Tengir in the municipality, the Mila position is strong and ECOI has therefore designated Mila as an undertaking with significant market power. ECOI considers it necessary to impose appropriate obligations on the company in this municipality.

- **Rangárþing eystra** – Míla operates both copper and fibre networks in the municipality and ECOI expects the Mila deployment of fibre to continue during the period of validity of the market analysis. ECOI designates Mila as having significant market power in the municipality and considers it necessary to impose appropriate obligations on the company in that area.

- **Rangárþing ytra** – In this municipality there is a local fibre network, Rangárljós, owned by the municipality, and this deployment enjoyed state aid. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. ECOI believes that neither Mila nor Ljósleiðarinn will achieve market dominance in the main urban areas of the municipality, in the light of parallel network coverage in that area. With a forward-looking assessment, it is considered that active competition will come into being during the lifetime of the analysis. The obligations that rest on Mila will therefore be withdrawn.

- **Reykhólahreppur** – In this municipality there is a local fibre network owned by the municipality, and this deployment enjoyed state aid. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. Mila operates a copper network in the municipality, and the municipality plans to deploy fibre to its urban areas, in 2023 or 2024, and will then presumably replace the Mila copper local loops. The obligations that have rested on Mila will therefore be withdrawn.

- **Reykjanesbær** – In this municipality, Mila operates both copper and fibre networks where the Mila fibre network reached 84% of residences and workplaces at the end of 2022. ECOI expects that Mila deployment of fibre will continue during the period of validity of the market analysis and that the company will quickly achieve full deployment in the municipality. There is also a fibre network owned by Ljósleiðarinn in the municipality, which reached 70% of legal residences and workplaces at the end of 2022, and ECOI expects this fibre deployment to continue. There is therefore substantial parallel network coverage in the municipality. In the case of a duopoly, it is not axiomatic that a difference in market share leads automatically to the company

with the higher market share being deemed to have a dominant position, see discussion in section 5.1.10.7 on the Danish case of 2021-2022. ECOI considers that active competition does prevail on market 3a in Reykjanesbær and that it will prevail throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be withdrawn in this area.

- **Seltjarnarnesbær** – This municipality is characterised by strong and varied competition. There are two strong operators on the wholesale markets, Mila and Ljósleiðarinn. On the market for access to local loops there is some difference in operators' market shares, i.e. 74% for Ljósleiðarinn against 26% for Mila on the basis of revised wholesale data for the first half of 2023. Parallel network coverage by two fibre networks is also substantial and on the increase at about 30% at the end of 2022, and ECOI expects that it will have reached 48% at the end of 2023. As has previously been stated, it is not axiomatic in a duopoly that difference in market share leads automatically to the company with the higher market share being deemed to have market dominance. In the ECOI assessment of significant market power, factors taken into account were financial strength, long-term agreements, countervailing buying power and substantial competition in retail in the area, and ECOI concluded that effective competition prevailed on market 3a in Seltjarnarnesbær, when the draft consultation was published on 15 September 2023. On 29 November, an additional consultation was opened on the second part of the preliminary draft of this market analysis. In the light of comments received, and also in the light of updated wholesale data for the first half of 2023, ECOI investigated also whether the above specified views and data would change anything with regards to designation of parties as having significant market power on any of the very many geographic markets of the case. Among these the assessment on significant market power in Seltjarnarnesbær was reviewed. After a detailed investigation, ECOI considered there to be no justifiable grounds to amend the assessment relating to Seltjarnarnesbær. The obligations that have rested on Mila will therefore be withdrawn in this area.

- **Skaftárhreppur** – Mila fibre deployment is on the increase in the municipality and that company has been rolling out fibre to Kirkjubæjarklaustur which is the only urban area in the municipality. The Skaftárljós network was developed by the municipality and its deployment enjoyed state aid. The Skaftárljós network is in the rural part of the municipality and Skaftárljós fibre network reached 18% of residences and workplaces at the end of 2022. There is also a local network in the municipality owned by Orkufjarskipti which reached 13% of residences and workplaces and also a small network owned by Hrafnhóll ehf. which reached about 2% of residences and workplaces at the end of 2022. Mila provides bitstream service over fibre on these networks. ECOI considers there to be no grounds to designate Skaftárljós as having significant market power. ECOI assesses the situation in Skaftárhreppur such that Mila has significant market power, as in 2023 it acquired a local network in the municipality, which strengthens the company's position. ECOI therefore considers it necessary to impose appropriate obligations on the company in this municipality on the relevant market.

- **Skeiða- og Gnúpverjahreppur** – There is a local network in the area owned by the municipality, which is operated by Fjarskiptafélag SG, and which reached 80% of

residences and workplaces at the end of 2022. Mila does not operate a copper network in the municipality but provides bitstream through the Fjarskiptafélag SG fibre, as also does Ljósleiðarinn (Sýn before). ECOI considers there to be no grounds to designate Fjarskiptafélag SG as having significant market power because of municipality ownership of the fibre network. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time, will therefore also be withdrawn.

- **Skorradalshreppur** – There are only 24 active local loops in the area, which are almost all on the Ljóspunktur local fibre network, which was developed with state aid. There is no likelihood of parallel network coverage with another fibre network. As before, ECOI considers there to be no grounds to designate Ljóspunktur, which is owned by the municipality, as having significant market power. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be withdrawn.

- **Súðavíkurhreppur** – when the first consultation was published on 15 September 2023, ECOI considered it unlikely that Snerpa would achieve market share of more than 50% during the lifetime of the analysis. ECOI also considered it unlikely that Mila market share, which was 75% at the end of 2022, would decrease significantly during the lifetime of the analysis. ECOI therefore planned to designate Mila as an undertaking with significant market power in Súðavíkurhreppur on market 3a in the first draft consultation document. From revised wholesale data from the first half of 2023, one can however see that Snerpa progress in uptake of the company's fibre local loops in Súðavíkurhreppur has been more than was expected as Snerpa share has grown from 25% at the end of 2022 to 41% in mid-2023. One can therefore consider it likely that Snerpa will achieve 50% market share during the lifetime of this analysis. The company is however small and its ability to invest is limited compared with Mila. In the light of the changed status of Snerpa in Súðavíkurhreppur, both with respect to market share on the relevant market and to deployment of fibre networks, the ECOI assessment is that effective competition is being established in Súðavíkurhreppur on market 3a, and that it is likely that such active competition will prevail in the municipality on the relevant market throughout the estimated lifetime of the analysis. The obligations that have rested on Mila in Súðavíkurhreppur are therefore withdrawn.

- **Suðurnesjabær** – Míla has deployed fibre to 37% of legal residences and to 35% of total homes and workplaces. Service over copper network is therefore in the majority of fixed line connections in the municipality. It is not foreseeable that there will be competition on market 3a in the municipality in the near future. Nor is there direct competitive pressure from mobile networks on the Mila local loop network, which means that it is clear that Mila should be designated as an undertaking with significant market power on market 3a in Suðurnesjabær and that there is therefore a need to impose appropriate obligations on the company in this municipality.

- **Sveitarfélagið Árborg** – The Mila market share is substantial on the local loop market in the municipality, but this share has been on the decline, while the Ljósleiðarinn share has been increasing. There is substantial parallel network coverage of fixed line networks in the municipality, and it cannot be seen that Mila can operate in the municipality without consideration for competitors, customers and consumers, as

both the wholesale customers of the company and consumers on the retail market have almost without exception another option, either Ljósleiðarinn or through a mobile network. ECOI therefore considers that active competition does prevail on market 3a in Árborg municipality and that it will prevail throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be withdrawn in this area.

- **Sveitarfélagið Vogar** – Míla has 100% share of both local loop lease and bitstream service over fixed line networks, but the impact of mobile networks is significant and Nova hf. (Nova) has some share in that sector. It must be considered unlikely that during the lifetime of the analysis, Ljósleiðarinn will deploy fibre to all those addresses that already have a fibre connection from Mila. ECOI therefore designates Mila as an undertaking with significant market power on market 3a in the Vogar municipality, and it is therefore necessary to impose appropriate obligations on the company in the municipality.

- **Sveitarfélagið Ölfus** – The number of active local loops has increased a little recently. The Ljósleiðarinn share in active local loops in the municipality was 63% at the end of 2022 and has increased steadily during the past months, and Mila has modest plans for further deployment in the municipality. It must be considered unlikely that there will be parallel fibre network coverage in the rural area of Ölfus. It is therefore unlikely that the Ljósleiðarinn share will be impaired to a great extent during the lifetime of the analysis. When one considers the position of parties on market 3a in a forward-looking manner, ECOI considers that Ljósleiðarinn has the position of an undertaking with significant market power on the relevant market in Ölfus municipality, and that there is reason to impose appropriate obligations on Ljósleiðarinn.

- **Tjörneshreppur** – There is a local network in the area owned by the municipality, which reached 78% of residences and workplaces at the end of 2022. ECOI concludes that there is no reason to designate Tjörneshreppur as an undertaking with significant market power. Only 27 local loops are in use in the municipality, and there are no mobile network routers being used there, which could otherwise have provided indirect competitive pressure. The obligations that have rested on Mila up to this point in time will therefore be withdrawn.

- **Vestmannaeyjabær** – It is established that EYGLÓ which is owned by Westman Islands town has already commenced fibre deployment in the municipality. The company intends to connect all residences in the municipality with fibre by the end of 2024. One must however take into account the fact that Mila had 99% market share on the relevant wholesale market at the end of 2022. ECOI estimates that take-up of EYGLÓ fibre will be very substantial, as the company is likely to enjoy support from local people. It is difficult to predict precisely how market share between Mila and EYGLÓ will develop during the lifetime of the analysis, but ECOI does expect that active competition will prevail during the period of validity of the analysis, so the obligations that up to this point in time have rested on Mila will be withdrawn.

- **Vopnafjarðarhreppur** – When the first draft consultation document for this market analysis was published, ECOI considered that from a forward-looking perspective, the positions of Mila and Tengir would be quite similar, and that active competition would

come to prevail on the market during the period of validity of this analysis. Data from the first half of 2023 showed, however, that an increasing part of Vopnafjarðarhreppur urban area is connected to Tengir. But because of the decrease in number of local loops in use, the Tengir market share has grown more than the corresponding increase at Tengir. When one looks to the future, one must consider it likely that Tengir will continue to increase its market share. ECOI therefore designates Tengir as an undertaking with significant market power in Vopnafjarðarhreppur, and appropriate obligations will be imposed on the company.

When assessing significant market power on market 3b, 43 specific geographic markets were analysed with respect to the main deciding factors. The ECOI assessment resulted in the following conclusions:

In **area A** on market 3b, there were 10 municipalities, most of them in the Capital City Area or its neighbourhood, with the exception of Ísafjarðarbær. The ECOI conclusion is that there is competition on market 3b in those municipalities classified under area A, so the obligations that rested on Mila will be withdrawn in those areas.

The 13 municipalities classified under **area B** on market 3b are distributed widely across the countryside. ECOI concludes that the status of competition in the area is not good, and that there is no prospect of it improving during the expected lifetime of the analysis. ECOI therefore considers it necessary to impose appropriate obligations on Mila in those municipalities classified under area B.

There was a special discussion about the municipalities that either do not fulfil the conditions for being classified under area A or B, or that in the opinion of ECOI required closer examination. Assessment of significant market power in those municipalities brought the following to light:

- **Akureyrarbær** – Mila market share on the relevant market is very high, at 78% at the end of 2022. It cannot be seen that potential competition from bitstream operators on fixed or mobile networks will alter the status significantly in the area in question during the lifetime of this analysis. Nor can it be seen that strong countervailing buying power of another party will result in a weakening of the strong Mila position on the relevant market during the lifetime of the analysis. ECOI believes that Mila has significant market power on market 3b and that it is therefore necessary to impose obligations on the company on the relevant market.
- **Árneshreppur** – Míla is the only operator of bitstream service on local loops in the municipality and in the opinion of ECOI, this is a situation that is unlikely to change during the lifetime of the analysis. One must however take into account that in the area there is considerable use of mobile network routers. There is also the fact that no company has higher market share than 50% on the retail market when one considers all bitstream service in the area. With the above in mind, ECOI considers there to be no grounds to designate Mila as an undertaking with significant market power. The obligations that rest on Mila in the municipality will therefore be withdrawn.
- **Ásahreppur** – On 29 September 2023 the Ljósleiðarinn purchase of the Sýn hf. (Sýn) bitstream systems was completed which means that it is possible that competition at

retail level will be strengthened on the market. ECOI therefore assesses the status of competition in Ásahreppur on market 3b such that it is active and will be so during the lifetime of the analysis. The obligations that rest on Mila will therefore be withdrawn in the municipality.

- **Bláskógabyggð** – Míla enjoys a dominant market share on the market for wholesale bitstream service over fixed line networks in Bláskógabyggð and ECOI considers it unlikely that this situation will change during the period of validity of this analysis. Having taken account of mobile networks, Mila share is however only 19% on the bitstream market, where all the mobile network companies have a higher share than Mila. ECOI therefore assesses the situation in Bláskógabyggð such that there is active competition on market 3b and those obligations in force on Mila will be withdrawn in the municipality.

- **Bolungarvíkurkaupstaður** – In this municipality, Mila has something over 58% market share against just under 42% market share for Snerpa on the bitstream market for fixed line networks. After taking mobile networks into account, the Snerpa share drops to something over 34% and the Mila share to 48%. When one takes into account the difference in size between the companies, economy of scope, financial strength and contractual relationships, one must consider the Mila position to be significantly stronger than that of Snerpa. ECOI considers, however, that there will be active competition on market 3b in Bolungarvíkurkaupstaður during the lifetime of this analysis, so obligations on Mila in the municipality will be withdrawn.

- **Dalabyggð** – Míla is the only operator of bitstream service in the area and it is unlikely that this situation will change to any significant degree during the lifetime of the analysis. ECOI therefore designates Mila as having significant market power in Dalabyggð and considers it therefore necessary to impose appropriate obligations on the company on the relevant market.

- **Dalvíkurbyggð** – Tengir has not been successful in the municipality with its bitstream service. It is unlikely that this position will change during the period of validity of the analysis. Mila market share on the relevant market is 73%, which one must consider to be significantly high in the area. ECOI assesses the situation on the market in Dalvíkurbyggð such that Mila enjoys significant market power on market 3b, and that it is necessary to impose appropriate obligations on the company in that municipality.

- **Eyja- og Miklaholtshreppur** – Despite the fact that there is open access for bitstream providers on the municipality's network, ECOI considers it unlikely that a new bitstream provider will start offering service in the light of location and small size of the market. Mila has had 100% market share in broadband connections over fixed line network, but having taken mobile network solutions into account the Mila share is 93%. ECOI considers that Mila enjoys significant market power on the market in the municipality and that there is a need to impose appropriate obligations on the company in that municipality.

- **Eyjafjarðarsveit** – Míla has more than 80% market share in broadband connections over fixed line network, 72% if one takes mobile network connections into account. When assessing significant market power, financial strength, economies of scale and scope and other factors that are important for the assessment were also taken into

account. ECOI believes that Mila enjoys significant market power in the municipality and that there is therefore a need to impose appropriate obligations on the company.

- **Fjallabyggð** – Mila share is 70% in bitstream in wholesale when one takes mobile networks into account, and Siminn has a high share of the retail market, about 81% in that area. This share strengthens the Mila position because of a long-term agreement between the companies. Tengir has not been successful with its bitstream service in the area and ECOI considers it unlikely that this situation will change during the period of validity of this analysis. ECOI therefore designates Mila as an undertaking with significant market power on market 3b in Fjallabyggð, and necessary obligations will be imposed on the company in the municipality.

- **Fljótsdalshreppur** – Fljótsdalshreppur is very small market with fewer than 45 bitstream connections in the municipality. Tengir had 60% market share at the end of 2022, but when the first draft consultation document for this market analysis was published, ECOI considered that the Austurljós position would strengthen significantly at the cost of Tengir on the relevant market during the period of validity of the analysis. Because of the small size of Austurljós, ECOI considers there to be no grounds to designate Austurljós as an undertaking with significant market power in the municipality. The Austurljós position however strengthened significantly during the first half of 2023 in the relevant municipality, on this market. The company is vertically integrated, having fibre net infrastructure in the ground, though not in this municipality, and it operates its own bitstream service and is an Internet service provider in retail. In the light of dominant market share, although this is a market with very few customers, ECOI considers there now to be grounds to designate Austurljós as having significant market power in the municipality and to impose on it the appropriate obligations.

- **Flóahreppur** – On the Flóaljós network, which is an open wholesale network that has enjoyed state aid, there are two parties operating wholesale bitstream service. Looking to the future, ECOI considers that the status of competition on market 3b in Flóahreppur is tending towards active competition and that this will be the situation during the lifetime of the analysis. The obligations that have rested on Mila in the municipality will therefore be withdrawn.

- **Grímsnes- og Grafningshreppur** – Despite the fact that Mila has 100% market share of bitstream service on fixed line networks in the municipality, the company share only reaches 11%, having taken mobile networks into account. ECOI therefore considers that active competition prevails and the municipality and the obligations that currently rest on Mila on the relevant market will be withdrawn in the municipality.

- **Grindavíkurbær** – Míla has a high market share, 70% have taken mobile network connections into account, and also has high market share on the underlying market 3a. Even though parallel network coverage on fixed line networks may possibly increase during the lifetime of the analysis, ECOI considers it very likely that Mila will still enjoy dominance as the company already has a strong position and Siminn has a strong position on the retail market. ECOI therefore designates Mila as an undertaking with significant market power in Grindavíkurbær, and appropriate obligations will be imposed on the company in the municipality.

- **Grundarfjarðarbær** – Míla has 100% market share of bitstream service, or fixed line networks and this share remains high at 96%, after taking into account mobile network connections. There are no parallel networks in the municipality and ECOI does not expect that this situation will change significantly in the near future. ECOI therefore designates Mila as an undertaking with significant market power in Grundarfjarðarbær, and appropriate obligations will be imposed on the company in the municipality.

- **Grýtubakkahreppur** – In this municipality, Tengir has a fibre network which reaches almost all spaces in the area. Tengir operates its own bitstream system, which is only operated in wholesale. The market shares of Tengir and Mila are fairly equal in bitstream service over fixed line, but mobile networks have some impact on the market where mobile network connections are nearly one third of bitstream connections in the municipality. ECOI considers that active competition prevails in the municipality and the obligations that have applied to Mila will be withdrawn.

- **Hrunamannahreppur** – Although the Mila share is dominant in bitstream on fixed lines, i.e. 72% at the end of 2022, the Hrunaljós network reaches 92% of legal residences in the municipality and Ljósleiðarinn (Sýn before) provides bitstream on the Hrunaljós network. ECOI considers that with the Ljósleiðarinn purchase of Sýn's bitstream systems, competition on the Hrunaljós network will increase. Mobile network service also has a significant impact on the retail competitive environment, which transfers to market share in bitstream service having taken mobile networks into consideration. ECOI therefore considers that active competition prevails in the municipality and the obligations that have applied to Mila will be withdrawn.

- **Hvalfjarðarsveit** – Mobile network connections have a significant impact in the municipality and also the Hvalfjarðarsveit fibre network, which reaches 90% of legal residences. ECOI considers that active competition prevails in the municipality and the obligations that currently rest on Mila on the relevant market will be withdrawn in the municipality.

- **Hörgársveit** – Tengir is achieving growing success in the municipality, and there is little impact from competition from mobile networks. Although one could consider that continued access to Mila bitstream system is important for competition at retail level, ECOI believes that there is a tendency towards active competition in the municipality and the obligations that have rested on Mila will be withdrawn.

- **Kjósarhreppur** – Both Mila and Ljósleiðarinn (Sýn before) operate bitstream service over fixed line networks in the municipality. One can assume that the competitive position of Ljósleiðarinn bitstream service has strengthened now when Ljósleiðarinn has taken over those operations from Sýn as of 29 September 2023. Mobile networks also have a significant impact on both retail level and on the underlying bitstream market. The above means that active competition prevails in the municipality and obligations that rest on Mila will be withdrawn.

- **Múlaþing** – Míla has a high market share, about 90% in fixed line network and 77% if mobile networks are taken into account, and in addition to this Mila is in a good position on the underlying wholesale market 3a. ECOI designates Mila as an

undertaking with significant market power and appropriate obligations will be imposed on the company in the municipality.

- **Mýrdalshreppur** – ECOI considers that market 3b in Mýrdalshreppur is tending towards active competition and it is not likely that this situation will change during the lifetime of the analysis. Those obligations that up to this point in time have rested on Mila in the municipality on market 3b will therefore be withdrawn.

- **Norðurþing** – Tengir has not achieved success in its bitstream service in the area and Mila also enjoys countervailing buying power vis-à-vis Tengir. In the assessment, economies of scale and scope of the companies and financial power were also taken into account. ECOI considers that Mila enjoys significant market power and that there is a need to impose appropriate obligations on the company in that municipality.

- **Rangárþing eystra** – In the first ECOI consultation document dated 15 September 2023, it was the ECOI conclusion that Mila had significant market power in Rangárþing eystra but in the light of information that came later to light regarding conditions on market 3b in Rangárþing eystra submissions from parties to the market in national consultation that took place during the period from 15 September until 16 October 2023, and of further data which ECOI has gathered, ECOI considered it necessary to examine whether there is reason to amend the prior ECOI conclusion to the effect that Mila be deemed to have significant market power in the municipality. Subsequent to a closer examination, ECOI assesses that competition will have become active on market 3b in Rangárþing eystra, all of that will at least be active during the lifetime of analysis. The obligations that have been imposed on Mila in the municipality on market 3b in the municipality will therefore be withdrawn.

- **Rangárþing ytra** – It is established that Ljósleiðarinn has in 2023 made an agreement on the purchase of various Sýn systems, including bitstream service. Therefore, the Ljósleiðarinn position with respect to bitstream service has strengthened in the municipality. Having taken into account competition in bitstream service on fixed line networks and the impact of mobile networks on competition in the municipality, ECOI deems competition to be active on market 3b in Rangárþing ytra and that it is likely to continue to be so during the lifetime of the analysis. The obligations that have been imposed on Mila in the municipality on market 3b in the municipality will therefore be withdrawn.

- **Reykhólahreppur** – Míla has considerable market power on market 3b in the municipality and ECOI considers it unlikely that there will be competition in bitstream service during the lifetime of the analysis. ECOI therefore designates Mila as an undertaking with significant market power in the municipality and considers it necessary to impose appropriate obligations on the company in the municipality.

- **Seltjarnarnesbær** – When the first draft consultation paper for this market analysis was published on 15 September 2023, the active competition in the municipality, financial strength, consequences of long-term agreements and countervailing buying power were taken into account. The above specified assessment led to the ECOI conclusion that it could not be seen that Ljósleiðarinn could act without consideration for competitors, customers and consumers in the area. ECOI therefore considered that active competition prevailed on market 3b in Seltjarnarnesbær and that it would

prevail throughout the planned lifetime were the analysis. In the light of revised wholesale data for the first half of 2023, ECOI investigated whether the data in question and comments from other parties from the first consultation, would alter the assessment of significant market power in Seltjarnarnesbær. The conclusion of that investigation is that there are no justifiable grounds to amend the assessment in Seltjarnarnesbær. Obligations that have rested on Mila on market 3b will therefore be withdrawn in that area.

- **Skaftárhreppur** – Míla has considerable market power on this market, where the Mila market share is 95% in fixed line network and 62% if one takes mobile networks into account. Parallel fixed line network coverage is almost none in the municipality. ECOI considers it unlikely that the Mila position will change considerably in the area and the company is designated as an undertaking with significant market power in the municipality. There is a need to impose appropriate obligations on the company in this municipality.

- **Skeiða- og Gnúpverjahreppur** – At the end of 2022, both Míla and Sýn operated a bitstream system with comparable market shares. At the end of September 2023 Ljósleiðarinn bought the Sýn bitstream system and therefore acquired Sýn´s market share. There is some impact from mobile networks, where Mila has 44% share against a 38% Ljósleiðarinn share, having taken mobile networks into account. With a forward-looking assessment ECOI concludes that there is active competition on market 3b in Skeiða- og Gnúpverjahreppur. The obligations that rest on Mila on market 3b will therefore be withdrawn in the municipality.

- **Skorradalshreppur** – In retail over fixed line networks, Siminn has a significant share, at 57%, while Sýn is in second position with 30%. Although Mila enjoys 100% share in bitstream over fixed line networks, the company's share is fourth smallest when the Siminn, Nova and Sýn mobile networks are included as the retail, and self-supply of these companies in this field is included in the relevant wholesale market. When one takes into account the wholesale shares on market 3b, having taken mobile network service into consideration, ECOI considers that there is active competition in Skorradalshreppur on the relevant market and that this will be the case throughout the lifetime of the analysis. The obligations that have rested on Mila in the municipality will therefore be withdrawn.

- **Súðavíkurhreppur** – Snerpa, which is a vertically integrated company, operates on the relevant market in this municipality. Snerpa also provides wholesale access to its bitstream service where access is on offer to bitstream, both on VDSL over copper and over fibre. Snerpa progress in uptake of the company's fibre local loops in Súðavíkurhreppur has been more than was expected in the first consultation on 15 September 2023, where Snerpa share has grown from 25% at the end of 2022 to 41% in mid-2023. One can therefore consider it likely that Snerpa will achieve 50% market share during the lifetime of this analysis. The company is however small and its ability to invest is limited compared with Mila. Snerpa is both a competitor and customer of Mila on that company's fibre network on market 3b, and the company's performance in retail is based to some extent on access to bitstream on Mila fibre. In the light of the growing status of Snerpa in Súðavíkurhreppur, both respect to market share on the relevant market and to deployment of fibre networks, the ECOI assessment is that

active competition is being established in Súðavíkurhreppur on market 3a, and that it is likely that such active competition will also prevail in the municipality on the relevant market 3b throughout the estimated lifetime of the analysis. The obligations that have rested on Mila in Súðavíkurhreppur are therefore withdrawn.

- **Suðurnesjabær** – In the opinion of ECOI, it is not likely that another operator will build a new fibre or bitstream system in the municipality, in competition with Mila. One cannot discern significant competitive pressure from mobile networks on the Mila bitstream system, and Mila had 66% share in bitstream service at the end of 2022, having taken mobile networks into account. ECOI has therefore designated Mila as an undertaking with significant market power and appropriate obligations will be imposed on the company in the municipality.

- **Svalbarðsstrandarhreppur** – Tengir provides access to its fibre local loops and Mila has developed successful operations and bitstream service, which competes with Tengir bitstream service. The shares of Tengir and Mila are equal on the municipality's fixed line network, and this has been the case for some time. Mobile networks have some impact towards strengthening the Sýn retail share in the municipality, where there are 100 summerhouses. In the light of this, ECOI deems there to be active competition on market 3b in Svalbarðsstrandarhreppur and that it is likely that this will continue to be the case throughout the lifetime of the analysis. The obligations that have been imposed on Mila in the municipality on market 3b in the municipality will therefore be withdrawn.

- **Sveitarfélagið Árborg** – The Mila market share is substantial on the local loop market but has been on the decline, while the Ljósleiðarinn share has been increasing. Mila share on the relevant market was 71% at the end of 2022 and 61% if one takes mobile networks into account. There is considerable parallel fixed line network coverage in the area. ECOI considers there to be no grounds to designate Mila as an undertaking with significant market power and deems that active competition prevails on market 3b in Sveitarfélagið Árborg. The obligations that have rested on Mila will therefore be withdrawn in this area on Market 3b.

- **Sveitarfélagið Vogar** – Míla has 100% share of both local loop lease and bitstream service over fixed line networks, but the impact of mobile networks is significant, and Nova has some share in that sector. ECOI considers that despite the fact that the joint development by Ljósleiðarinn and Mila will probably be completed in the first part of the period of validity of this analysis, it is unlikely that Ljósleiðarinn will achieve such market share within the period of validity that this will have a significant impact on the Mila position in the municipality, where Mila now has 70% market share when one takes mobile networks into account. ECOI therefore designates Mila as an undertaking with significant market power on market 3b in Sveitarfélagið Vogar, and ECOI therefore considers it necessary to impose appropriate obligations on Mila in the municipality.

- **Sveitarfélagið Ölfus** – Ljósleiðarinn market share was 71% in fixed line networks at the end of 2022 and 53% if one took mobile networks into account. Retail competition is therefore based on access to Ljósleiðarinn bitstream service for a significant proportion of consumers. When one considers the Ljósleiðarinn position in share of

the wholesale bitstream market, it is not likely that the large share of Ljósleiðarinn will be impaired during the lifetime of the analysis. In the light of the above, ECOI therefore designates Ljósleiðarinn as having significant market power on market 3b in Sveitarfélagið Ölfus and considers it therefore necessary to impose appropriate obligations on Ljósleiðarinn on the relevant market.

- **Tjörneshreppur** – In the rural part of the Tjörneshreppur municipality, both Tengir and Mila have bitstream service on the municipality's open network. The impact of mobile networks is not significant in the municipality, where about half of residences and companies in the municipality, about 48%, have access to one fixed line network and at least one mobile network with a good signal. ECOI concludes that there are no grounds to impose obligations on the bitstream companies operating on the market and that active competition prevails in the municipality on market 3b. ECOI considers there to be no indication that this situation will change in the near future. The obligations that have been imposed on Mila in Tjörneshreppur will therefore be withdrawn.

- **Vestmannaeyjabær** – In prior discussion on potential development of fibre network roll-out in the Westman Islands, the conclusion is reached that there is some uncertainty about how quickly the EYGLÓ plans for fibre roll-out will be realised. In the same way, there is also uncertainty about whether and then which parties will compete with parallel bitstream systems on that network. It does however appear clear that Mila will operate bitstream service on that network. There is a slight impact from mobile networks, but despite the fact that 5G deployment commenced quite vigorously some time ago, mobile networks have not achieved success there. Having taken the above into account ECOI designates Mila as an undertaking with significant market power on market 3b in Vestmannaeyjabær and considers it necessary to impose appropriate obligations on Mila in the municipality.

- **Vesturbyggð** – Míla has a dominant position in bitstream service on the fixed line network in Vesturbyggð. Part of the fibre local loops that are registered as being owned by Vesturbyggð are jointly owned by Vesturbyggð and Míla. Mila has control of most local loops that are jointly owned by Mila and Vesturbyggð, as those local loops are directly connected to the Mila trunk line and it is not possible to connect them in another manner under current circumstances. There is some impact from mobile networks in the municipality, where Mila has 67% market share on market 3b, having taken into account connections through mains connected mobile network routers. Having taken the above into account, ECOI deems the situation on market 3b in Vesturbyggð to be such that Mila enjoys significant market power and that there is a need to impose appropriate obligations on Mila in that municipality.

- **Vopnafjarðarhreppur** – Míla has a dominant position in bitstream service on the fixed line network in Vopnafjarðarhreppur. ECOI considers it unlikely that Tengir can provide Mila with meaningful competition in the municipality. There is not much impact from mobile networks in the municipality, where Mila has 83% market share on market 3b, having taken into account connections through mains connected mobile network routers. Mila is therefore designated as an undertaking with significant market power and appropriate obligations will be imposed on the company in the municipality.

- **Þingeyjarsveit** – Míla has a high market share on the relevant market which measured 67% at the end of 2022 and 59% when mobile networks were taken into account. The ECOI assessment has led to the conclusion that Mila enjoys significant market power in the municipality and appropriate obligations will be imposed on Mila on the relevant market.

Here above, the definition of the relevant product or service markets, geographic markets, assessment of competitive conditions on the relevant markets and the designation of electronic communications undertakings as having significant market power on those markets has been described. Subsequent to this, ECOI is required to decide whether electronic communications undertakings that have been designated as having significant market power on the relevant markets, fulfil legal conditions to be deemed wholesale-only companies. Then competitive problems on the relevant markets must be described and finally, obligations must be elaborated on the relevant companies for the purpose of facilitating competition on related retail markets, for the benefit of consumers.

In section 7.3, there is discussion on whether Mila, Ljósleiðarinn, Tengir and Austurljós fulfil legal conditions to be deemed wholesale-only companies. This means a company in the understanding of Article 59 of the Electronic Communications Act no. 70/2022, where, if an electronic communications undertaking that has been designated as having significant market power is considered to fulfil the conditions of that Act, then ECOI has more limited options with respect to elaboration of obligations than if the company does not fulfil the legal requirements in question. Should such a company fulfil the legal conditions then the only option for ECOI is to impose obligations for access, non-discrimination and fair and reasonable pricing.

As previously stated, ECOI opened consultation on 29 November 2023 on the second part of the preliminary draft of the market analysis in question, i.e. with respect to a description of competition problems, a decision on whether parties with significant market power fulfilled legal provisions to be considered wholesale-only companies, and elaboration of obligations on those companies that were considered in the opinion of ECOI to have significant market power on specific geographic markets.

In the consultation document the conclusion was reached that in order for the relevant company to be deemed a wholesale-only company in the understanding of paragraph 1 of Article 59, neither the company itself nor its controlling owner may conduct retail operations in the field of electronic communications within the EEA. As Mila is in 90% ownership of Ardian France SA, which also has a 100% share in the Spanish electronic communications company Adamo which among other things operates on the retail market in Spain, ECOI deemed that Mila did not fulfil the legal conditions of Article 59 of the Electronic Communications Act to be considered a wholesale-only company. The conclusion was then reached that both Ljósleiðarinn and Tengir fulfilled the conditions to be considered wholesale-only companies in the understanding of Article 59 of the Electronic Communications Act. The conclusion was however reached that Austurljós did not fulfil the conditions to be deemed a wholesale-only company as Austurljós is a retailer of Internet service.

In the light of comments received from Mila, Siminn and Nova on the above specified consultation on the second part of the market analysis draft, which lasted from 29 November

2023 until 3 January 2024, ECOI made a closer examination of whether Ljósleiðarinn and Tengir operate at retail level in electronic communications and thus would not fulfil the legal provisions of Article 59 of the Electronic Communications Act to be deemed wholesale-only companies, and ECOI has a limited number of obligations at its disposal where companies are designated as such. The ECOI conclusion is that the companies do not fulfil legal provisions, and that this nevertheless does not mean that ECOI plans to prescribe further obligations on the companies than were specified in the preliminary draft. In the initial draft market analysis, Mila was however not deemed to fulfil the legal provisions in question because of its ownership relationship with an electronic communications company within the EEA which conducts retail operations in the area, i.e., what is called the ownership condition, and ECOI does not propose an amendment to this assessment in this case. After a closer examination of Ljósleiðarinn and Tengir operations it also came to light that nor does Mila fulfil the condition in question relating to retail operations in this country, to be deemed a wholesale-only company.

There is discussion on competition problems on the relevant markets in section 7.5 and in its subsections. Obligations are imposed on undertakings with significant market power with the aim of combating real and/or potential problems in the field of competition on the relevant markets, and on corresponding wholesale markets and related retail market. Problems in the field of electronic communications, with the exception of problems that can derive from market structure, refers to any kind of behaviour by an undertaking with significant market power, which is intended or leads to other electronic communications companies being forced out of markets, which prevents potential competitors from entering the market and/or damages consumers' interests. When obligations are applied pursuant to the Electronic Communications Act, where the methodology in market analysis is based on the main principles of competition law, the reason for such does not need to be that significant market power is in reality being leveraged, and even less that a competition infringement has been committed, but it suffices that competition problems could possibly arise from the prevailing conditions, among other things because of specific market structure, that are detrimental to competition, for example lack of infrastructure competition in a specific area.

With respect to competition problems on market 3a, a variety of potential and real competition problems are described in section 7.5 that are related to market 3a, and also that interaction with competition problems related to market 3b, as these markets are closely related. There is furthermore a description of competition problems or disadvantages on a related market for trunk line lease that can have an impact on the relevant wholesale markets 3a and 3b. Problems that are likely to occur on the relevant wholesale market, or on a related leased line market, and that can have an impact on the relevant wholesale market, or on a related leased line market, and on those markets and/or related wholesale markets, if obligations are not in place on the market, can for example be manifested in denial of access, discrimination in pricing, cross subsidies, damaging predatory pricing, delays in negotiations and delivery, abnormal demands on counterparty, discrimination in quality, discrimination in provision of information or abuse of information from a counterparty. An undertaking with significant market power in a specific area can furthermore have both an opportunity and incentive to abuse its position with respect to purchasers in a specific area by excessive pricing or discrimination in pricing. It is furthermore concluded that Ljósleiðarinn and Tengir do not have the same guarantee that service providers will not switch their business to the Mila network, as Mila has a guarantee for Siminn not moving its business to Ljósleiðarinn and/or

Tengir to a significant degree, even though Siminn made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn fibre network in July 2022. With all the above in mind, identified and potential competition problems still exist on those geographical markets where active competition does not prevail, despite changes in circumstances on the market in the light of the Mila sale to Ardian.

With respect to competition problems on market 3b, there is a description of potential and real competition problems on market 3b in section 7.5.3, and also on the related market 3a and on a related retail market. Problems that are likely to occur on the relevant wholesale markets, including on the above specified market for leased lines, and that can have an impact on the relevant wholesale market 3b, or on market 3a, if obligations where not in place on the market, can for example be manifested in denial of access, discrimination in pricing, cross subsidies, damaging predatory pricing, delays in negotiations and delivery, abnormal demands on counterparty, discrimination in quality, discrimination in provision of information or abuse of information from a counterparty. An undertaking with significant market power in a specific area can furthermore have both an opportunity and incentive to abuse its position with respect to purchasers in a specific area by excessive pricing or discrimination in pricing. ECOI also comes the conclusion that Mila, Ljósleiðarinn and Austurljós could have the opportunity and incentive in those areas where they enjoy significant market power, to deny specific electronic communications companies access to market 3b, and as relevant to market 3a, or to offer access at unreasonable terms that could be equated to denial, for the purpose of making it difficult for them in competition on related markets, if obligations were not in place to oblige the companies to provide access, either to market 3b or to market 3a. With the above in mind, ECOI, assesses that identified and potential competition problems still exist on the relevant markets in those geographic markets where active competition does not prevail.

In other respects, reference is made to section 7.5.2 and 7.5.3, where one can find detailed discussion on competitive problems on the relevant markets.

It is clear from paragraph 2 of Article 1 of regulation 556/2023 on market analysis in the field of electronic communications, that the purpose of market analysis is to show whether active competition prevails on electronic communications markets and to decide on applying measures in the form of obligations if competition is not active, for the purpose of supporting consumer interests. Obligations need to be at once necessary, justifiable, transparent, supported by arguments, in accordance with the nature of the defined competition problem, to be designed to resolve this in accordance with those objectives that they are intended to achieve (i.e. to strengthen competition, support deployment of high-capacity networks, and create benefits for consumers), support investment in high-speed networks and to be in accordance with proportionality. In order to tackle the problems identified there, ECOI shall impose obligations on undertakings with significant market power pursuant to Articles 47-52, 55 and 59 of the Electronic Communications Act, where appropriate. The following discussion describes those obligations imposed on undertakings with significant market power on **market 3a**.

In the following 26 municipalities, Mila has significant market power on market 3a:

- Bláskógabyggð
- Dalabyggð

- Fjallabyggð
- Fjarðabyggð
- Grindavíkurbær
- Grímsnes- og Grafningshreppur
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Múlaþing
- Norðurþing
- Rangárþing eystra
- Skaftárhreppur
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Suðurnesjabær
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Sveitarfélagið Vogar
- Tálknafjarðarhreppur
- Vesturbyggð

In the light of the potential and real competition problems that can occur and of the strong Mila position on the relevant market in the 26 municipalities where the company is deemed to enjoy significant market power on market 3a, ECOI considers it necessary to impose obligations on the company for access, non-discrimination, and price control in the form of fair and reasonable prices. ECOI considers it however necessary to impose a more detailed obligation on Mila for price control in all of these municipalities with the exception of Fjallabyggð, Norðurþing Rangárþing eystra, where an obligation will be imposed on Mila for price control for access to ducts and conduits. ECOI also considers it necessary to maintain obligations on Mila that the company tariff for access to company facilities be cost oriented or decided on the basis of price benchmarking in all those municipalities where the company is considered to enjoy significant market power. ECOI will on the other hand not maintain obligations on Mila for transparency, separation of accountancy and cost accounting. It is therefore clear that Mila is being relieved of all obligations on market 3a in municipalities where around 80% of the country's inhabitants live, and in addition to this, that there is a very significant relaxation of obligations in those municipalities, where Mila will still have significant market power on market 3a.

With respect to the access obligation, ECOI considers that an obligation to access to infrastructure, pursuant to Article 47 of the Electronic Communications Act will not on its own suffice to tackle identified competition problems. Such an access obligation will on the other hand, continue to be necessary, as will the obligation for access to networks and service pursuant to Article 48 of the Electronic Communications Act, see further detailed discussion

in sections 8.3.2.1 and 8.3.2.2. ECOI thus considers it necessary to maintain the access obligation on Mila in the areas in question with respect to access to copper and fibre local loops and virtual access through them to networks, along with access to other necessary facilities. ECOI plans nevertheless to relax obligations for access to Mila copper and fibre local loops and for virtual access, or to those networks that have not been developed with state aid, in such a manner that Mila can now resolve the access obligation in question by providing adequate access to Access Option 1 in bitstream instead of such local loop access. As before it shall be prescribed that Mila shall notify planned fibre civil works, but now with at least 3 months' notice instead of 6 months' notice. Nor does the obligation apply where a Mila competitor has infrastructure that can be used for fibre development. This is not a case of new obligations but rather maintaining existing obligations with certain relaxations. ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems in accordance with those objectives that the obligations are intended to achieve are not in excess of proportionality. ECOI considers that obligations do not prevent investments in high-capacity networks in the relevant areas, but where infrastructure competition develops over time, it would be possible to withdraw such access obligations.

With respect to the non-discrimination obligation, ECOI considers it necessary to maintain the obligation on Mila, but now only in those areas where Mila has significant market power. These are continuation of the equality of input obligation (EoI), obligation for equal access to information, impact on development of product offer, equal delivery time, obligation for making service level agreements (SLAs), service level guarantees (SLGs) and obligation for measuring and publishing of key performance indicators (KPIs). ECOI will however no longer require that Mila publish openly the service level agreements that the company has made or will make with electronic communications companies. This therefore represents a certain relaxation of the obligations in question in those areas where the obligations will apply. ECOI considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as is further argued in sections 8.3.3.1-8.3.3.6.

With respect to the obligation on price control, this represents a significant relaxation with respect to the Mila copper network, but also represents a slightly greater burden with respect to the fibre network. In addition to this, all obligations including price control, are withdrawn from Mila on the relevant market in areas where about 80% of the population lives, and now there will only be a requirement for fair and reasonable pricing of Mila local loop lease on the company’s copper network, whereas up to this point in time an obligation had rested on the company for cost analysed prices across the whole country for the company’s copper network. The obligation for fair and reasonable pricing is imposed on Mila for Mila’s local loop lease on the company’s fibre networks in those areas where the company has significant market power. Furthermore, up to this point in time, an obligation for price control has rested on Mila for lease of facilities and access to ducts and conduits. These obligations will be maintained in these areas, expect in Fjallabyggð, Norðurþing and Rangárþing eystra, as far as ducts and conduits are concerned, as the obligation for fair and reasonable pricing will apply in these three municipalities. ECOI considers it necessary to impose this obligation on Mila in the areas in question on the relevant market. ECOI furthermore considers the obligation to

be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve, to support investment and competition in high-capacity networks, and that they are not in excess of proportionality.

Tengir has significant market power in 8 municipalities and appropriate obligations are imposed on Tengir in those municipalities. These are the following municipalities:

- Akureyrarbær
- Dalvíkurbyggð
- Eyjafjarðarsveit
- Grýtubakkahreppur
- Hörgársveit
- Svalbarðsstrandarhreppur
- Vopnafjarðarhreppur
- Þingeyjarsveit

In the above specified 8 municipalities, obligations have been in force on market 3a from a prior analysis. The obligations that have been in force on Míla are now withdrawn, which will come into force 15 days after the date of this decision. Now the case will be that there will be obligations on Tengir instead of those that applied to Mila in the areas.

In the light of the potential and real competition problems that can occur and of the strong Tengir position on the relevant market in the 8 municipalities where the undertaking is deemed to enjoy significant market power, ECOI considers it necessary to impose obligations on the company for access, non-discrimination, and price control in the form of fair and reasonable tariff.

With respect to the access obligation, ECOI imposes an obligation pursuant to Article 47 of the Electronic Communications Act on Tengir to accede to reasonable requests for access and use of civil engineering, including buildings or entry to buildings, to cabling in buildings, and aerials, towers and other constructions, poles, masts, ducts, manholes and cabinets. ECOI also imposes the obligation on Tengir pursuant to Article 48 to provide local access to its fibre network on the relevant market in those areas where Tengir is considered to have significant market power. In addition to the above specified access obligations, ECOI considers it necessary to impose an access obligation on Tengir in the relevant areas for access to fibre local loops and access to other necessary facilities.

As identified competition problems indicate that Tengir could have the opportunity and incentive in those areas where the undertaking has significant market power to deny specific electronic communications companies access to market 3a or to withdraw access that has already been granted, or offer access at an unacceptable terms that equate to denial, ECOI considers it necessary to impose on Tengir an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in those areas where Tengir is deemed to have significant market power on the relevant market.

To increase the effectiveness of obligation for access to ducts and conduits, and to support the deployment of fibre in areas where fibre is lacking, and is appropriate to strengthen parallel coverage of fibre networks where this can be considered financially feasible, ECOI

imposes the obligation on Tengir that the company shall publish a list of planned civil works with 3 months' notice in those areas where the undertaking is deemed to have significant market power on the relevant market.

ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve and that they are not in excess of proportionality. ECOI considers the obligations particularly necessary for the purpose of facilitating competition in provision of bitstream service (market 3b) and service competition among retailers in the areas in question, as Tengir is by far the largest network operator in the relevant areas. ECOI considers that the obligations do not prevent investments in high-capacity networks in the relevant areas, but where infrastructure competition develops over time, it would be possible to withdraw such access obligations.

With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Tengir, in those areas where the company has significant market power. This is an equality of input obligation (EoI) and an obligation for equal access to information. The obligation for non-discrimination with respect to access to the Tengir local loop network in wholesale, and to related facilities such as co-location and access to ducts and conduits, are necessary for companies, whether on the relevant market or related markets, to be able to compete on a level playing field between themselves and with Tengir in the relevant areas. The obligation should mean that all electronic communications companies that purchase access to Tengir local loops receive comparable services and prices and in this way the competition problems related to possible discrimination will be solved.

The obligation for fair and reasonable pricing will apply to the Tengir fibre networks in these areas. In the opinion of ECOI, Tengir is an undertaking with significant market power, which has the possibility and incentive to price higher than if active competition prevailed in the company’s marketing territories. These areas are characterised by less competitive pressure prevailing on the relevant market than in other more competitive areas. It should be clear that the relevant obligation for fair and reasonable pricing on Tengir is important for parties to the market, as benefits from the obligation for bitstream operators and retailers and thus for consumers are substantial. The objective of the relevant obligation is to prevent potential excessive pricing in Tengir operational territories where the company has significant market power and where there is little or even no active competition.

Ljósleiðarinn has significant market power in one municipality on market 3a, which is Sveitarfélagið Ölfus. In this municipality obligations have been in force on market 3a from a prior analysis. The obligations that have been in force on Míla are now withdrawn, which will come into force 15 days after the date of this decision. Instead, obligations will come into force that are imposed on Ljósleiðarinn.

With respect to the access obligation, ECOI imposes an obligation pursuant to Article 47 on Ljósleiðarinn to accede to justifiable requests for access and use of civil engineering, including buildings or entry to buildings, to cabling in buildings, and aerials, towers and other constructions, poles, masts, ducts, manholes and cabinets. ECOI also imposes an obligation on Ljósleiðarinn according to Article 48 of the Electronic Communications Act to provide local access to its fibre network on the relevant market in the area where Ljósleiðarinn is deemed

to have significant market power, in the case of a state funded fibre network, unless the access seeker rather requests bitstream access. In the case of those fibre local loops that Ljósleiðarinn has deployed in the area without state aid, Ljósleiðarinn can choose to provide local access or adequate bitstream access. In addition to the above specified access obligations, ECOI considers it necessary to impose an access obligation on Ljósleiðarinn in the relevant areas for access to fibre local loops and access to other crucial facilities.

As identified competition problems indicate that Ljósleiðarinn could have the opportunity and incentive in the area where the company has significant market power to deny specific electronic communications companies access to market 3a, or as applicable with provision of bitstream access on market 3b, or to withdraw access that has already been granted, or offer access at an unacceptable terms that equate to denial, ECOI considers it necessary to impose on Mila an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in the area where Ljósleiðarinn is deemed to have significant market power on the relevant market. In addition to this ECOI imposes an obligation on Ljósleiðarinn that the company shall publish a list of planned civil works with 3 months' notice in those areas where the company is deemed to have significant market power on the relevant market.

ECOI considers the above specified access obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve and that it is not in excess of proportionality. ECOI considers the obligations particularly necessary for the purpose of facilitating competition in provision of bitstream service (market 3b) and service competition among retailers in the areas in question, as Ljósleiðarinn is by far the largest network operator in the relevant area. ECOI considers that obligations do not prevent investments in high-capacity networks in the relevant area, but if infrastructure competition develops over time, it would be possible to withdraw such access obligations.

With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Ljósleiðarinn in that area where the undertaking has significant market power. This is an equality of input obligation (EoI) and an obligation equal access to information. The obligation for non-discrimination with respect to access to the Ljósleiðarinn local loop network in wholesale, and to related facilities such as co-location and access to ducts and conduits, are necessary for companies, whether on the relevant market or related markets to be able to compete on a level playing field between themselves and with Ljósleiðarinn in the relevant area. The obligation should mean that all electronic communications companies that purchase access to Ljósleiðarinn local loops receive comparable services and prices and, in this way, resolve competition problems related to possible discrimination.

The obligation for fair and reasonable pricing will apply to the Ljósleiðarinn fibre networks in this area. It should be clear that the benefits for parties to the market are substantial and that there are major gains from this for bitstream operators and retailers and thus for consumers, as it should prevent the possibility of higher pricing in areas where little or even no active competition prevails.

Discussion here above has been about obligations imposed on undertakings with significant market power on market 3a. Next there will be discussion about obligations imposed on undertakings with significant market power on market 3b.

Mila has significant market power in 31 municipalities on market 3b. They are the following 31 municipalities:

- Akureyrarbær
- Dalabyggð
- Dalvíkurbyggð
- Eyjafjarðarsveit
- Eyja- og Miklaholtshreppur
- Fjallabyggð
- Fjarðabyggð
- Grindavíkurbær
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Múlaþing
- Norðurþing
- Reykhólahreppur
- Skaftárhreppur
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Suðurnesjabær
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Sveitarfélagið Vogar
- Tálknafjarðarhreppur
- Vestmannaeyjabær
- Vesturbyggð
- Vopnafjarðarhreppur
- Þingeyjarsveit

In the light of the potential and real competition problems that can occur and of the strong Mila position on the relevant market in those municipalities where the company is deemed to enjoy significant market power on the relevant market, ECOI considers it necessary to impose obligations on the company for access, non-discrimination, and price control in the form of fair and reasonable tariff. ECOI will on the other hand not maintain obligations on Mila for transparency, separation of accountancy and cost accounting. It is therefore clear that Mila is being relieved of all obligations on market 3b in municipalities where about 80% of the country's inhabitants live, and in addition to this, that there is a very significant relaxation of obligations in those municipalities, where Mila will still have significant market power.

With respect to the access obligation, it should be emphasised that access to ducts and conduits belongs to market 3a, while co-location belongs to both market 3a and 3b. ECOI therefore plans to impose an obligation on Míla to accede to all normal and reasonable requests from other electronic communications companies for central access, see definition of service Market 3b. Access in question here is on the one hand, access to bitstream which goes through the upper frequency range of copper local loops and on the other hand, access to bitstream through fibre local loops.

In addition to the obligation to provide separate access in the form of bitstream access, the obligations is imposed on Mila with reference to points g, j, and h in paragraph 2 of Article 48 of the Electronic Communications Act, to provide at wholesale terms, co-location to other electronic communications companies and access to other facilities necessary for bitstream access to be fully used and to serve the intended purpose, including connections from Mila connection point to the connection points of wholesale purchasers and related equipment.

In addition to the above specified obligation for access to co-location, ECOI considers it necessary to maintain the access obligation on Mila in the areas in question with respect to central access (bitstream) to copper and fibre local loops over those networks and access to other necessary facilities. These are not new obligations - except to the extent that Access Option 4 is added again, which rested on the Siminn Group between the years 2008-2014 - but existing obligations are being maintained while they will however only apply in the 31 municipalities in question. ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems in accordance with those objectives that the obligations are intended to achieve and that they are not in excess of proportionality. ECOI considers the obligations particularly necessary to ensure competition in service between retailers in the areas in question, as at most locations, Mila is the only or at least by far the largest bitstream provider in these areas. ECOI considers that obligations do not prevent investments in high-capacity networks in the relevant areas, but where infrastructure competition develops over time, it would be possible to withdraw such access obligations.

With Access Option 4, retailers are enabled to access fully ready Internet access for resale, the same as is available to Siminn. Mila took over the technical operations needed to provide this service from Siminn some time ago, so there is no considerable experience of this within the company, which Mila operates for Siminn. ECOI therefore assesses that the obligation is not burdensome for Mila and thus not in excess of proportionality. The potential gain for consumers from more varied retail competition is greater, than the cost or inconvenience for Mila for this access option. As such an access option will be sold to those access seekers that so request at fair and reasonable rates, it will not result in a burdensome cost for Mila.

ECOI also considers it necessary to make arrangements such that Mila will not retract bitstream access that the company has provided on networks where the company has acquired local loop access to dark fibre, while Siminn does not provide service over bitstream systems from such parties, so that customers of all service providers will continue to have a choice of underlying electronic communications network as the Mila fibre roll-out progresses. ECOI imposed this obligation on Mila with the ECOI Decision no. 5/2021 and it is therefore in force vis-à-vis Mila and thus not a new obligation.

With respect to the non-discrimination obligation, ECOI considers it necessary to maintain the obligation on Mila, but now only in those areas where Mila has significant market power. These are continuation of the equality of input obligation (EoI) obligation for equal access to information, impact on development of product offer, equal delivery time, obligation for making service level agreements, service level guarantees and obligation for measuring and publishing of key performance indicators (KPIs). ECOI will however no longer require that Mila publish openly the service level agreements that the company has made or will make with electronic communications companies.

With respect to the obligation on price control, this represents a significant relaxation with respect to the Mila copper network, but also represents a slightly greater burden with respect to the fibre network. In addition to this, all obligations including price control, will be withdrawn from Mila on the relevant market in areas where about 80% of the population lives, and now there will only be a requirement for fair and reasonable pricing of Mila bitstream lease on the company's copper network, whereas up to this point in time an obligation has rested on the company for cost analysed prices across the whole country for the company's copper network. On the other hand, an obligation for fair and reasonable pricing will now also apply to Mila bitstream lease on fibre networks in these areas, as in the case of Ljósleiðarinn on the relevant market.

ECOI considers that the obligation on fair and reasonable pricing on Mila bitstream access to fibre networks in the relevant areas where the company has significant market power on the relevant market, will not hinder the company's continued fibre roll-out or investments in this area, or other areas, or the installation of bitstream systems on such fibre networks. As previously stated, this obligation is much milder than an obligation on price control. In the opinion of ECOI, the regulatory holiday that Mila has had for years, with respect to pricing for the company's fibre products on markets 3a and 3b has provided good results in development of high-capacity access networks and bitstream systems, up to this point in time, given the above specified competition problems existing in these area where Mila is deemed to have significant market power, but better competition needs to be ensured on the relevant wholesale markets and the downstream retail markets in the relevant areas, regardless of whether they are on copper or fibre networks.

Ljósleiðarinn has significant market power in one municipality on market 3b, which is Sveitarfélagið Ölfus. Obligations have been in force in the municipality that were imposed on Mila in prior analysis. The obligations that have been in force on Mila in the municipality shall be withdrawn 15 days after the date of this decision.

In the light of potential and real competition problems that can arise and of the strong Ljósleiðarinn position on the relevant market in the municipality where the company enjoys significant market power, ECOI considers it necessary to impose on the company an access obligation, non-discrimination obligation and an obligation for fair and reasonable prices. ECOI will on the other hand not impose obligations on Ljósleiðarinn for transparency, separation of accountancy, cost accounting or an obligation for cost analysed prices.

With respect to the access obligation, ECOI imposes an obligation on Ljósleiðarinn to accede to all normal and fair requests from other electronic communications companies for central access. The access referred to here is access to bitstream over fibre local loops. In addition to the above specified obligation for access to co-location, ECOI considers it necessary to impose

on Ljósleiðarinn in the relevant area an access obligation for central access (bitstream) to fibre local loops and to other necessary facilities. As has previously been stated, access to ducts and conduits belongs to market 3a, while co-location belongs to both market 3a and 3b.

In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in this area, where Ljósleiðarinn has been deemed to have a dominant market position, unless an access obligation is imposed on Ljósleiðarinn bitstream systems, with respect to access to such systems, for the benefit of consumers.

With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Ljósleiðarinn, in the area in question where Ljósleiðarinn has significant market power. This is an equality of input obligation (EoI), an obligation for equal access to information, for impact on product development and equal delivery times. ECOI furthermore considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with those objectives that the obligations are intended to achieve, to support investment and competition in high-capacity networks, and it is not in excess of proportionality.

With regards to the obligation for fair and reasonable pricing, it is clear that this is a much less burdensome obligation than an obligation for cost analysed prices. As the Ljósleiðarinn position is extremely strong in the area in question, ECOI considers it injudicious to not prescribe on fair and reasonable tariff for Ljósleiðarinn in the area. The above specified obligation should ensure that Ljósleiðarinn cannot apply excessive pricing in the area in question, to the detriment of access seekers and thus consumers. For this reason, ECOI considers it necessary and justifiable to impose such an obligation. With respect to such an obligation, Ljósleiðarinn has much greater freedom in pricing than if an obligation for price control rested on the company, and where prior endorsement from ECOI is not required for price changes. It is not certain that the obligation will be tested, but this will only happen if a complaint is received on excessive pricing or in special circumstances at the initiative of ECOI, e.g. if there was a significant price increase or prices developed significantly in excess of general price development. It should not necessarily require intervention from ECOI for the price of providing a service to be taken into account when deciding the tariff, where account should rather be taken of general price development and/or benchmarking should ECOI become involved.

Austurljós has significant market power in one municipality in market 3b, i.e. in Fljótsdalshreppur. In this municipality obligations have been in force on this market from a prior analysis. The obligations that have applied to Mila are now withdrawn which will come into effect 15 days after the date of this decision, and instead obligations will be imposed on Austurljós, a company that does not fulfil the conditions to be deemed a wholesale-only company in the understanding of Article 59 which means that ECOI has more varied measures at its disposal to tackle identified competition issues.

In the light of those potential and real competition problems that can arise and of the strong Austurljós position on the relevant market in the municipality where the company is deemed to enjoy significant market power, ECOI considers it necessary to impose an access obligation and non-discrimination obligation on the company, but ECOI will on the other hand not

impose an obligation on the company for a fair and reasonable pricing, among other things in the light of the fact that this is a very small company, and as the area in question is very rural and sparsely populated. In addition to this, Austurljós is dependent on the municipality for access to the municipality's fibre network which was built as a community project with state aid.

With respect to the access obligation, ECOI imposes an obligation on Austurljós to accede to all normal and fair requests from other electronic communications companies for central access. The access in question here is to the company's bitstream over fibre local loops owned by Fljótsdalshreppur, for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, particularly Internet service. ECOI also imposes an obligation for bitstream access to Austurljós in the area in question and also considers that this access obligations should in addition be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems and in accordance with those objectives that the obligation is intended to achieve and to be not in excess of proportionality. In the opinion of ECOI it is clear that gains from this obligation are much greater than its cost or inconvenience for Austurljós.

With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Austurljós in the area in question. This is an obligation for equal access to the company's bitstream system, related facilities, to information etc. ECOI considers that the obligation for non-discrimination is not particularly burdensome and that it should lead to a situation where all companies that lease access to the Austurljós systems receive comparable service, and will thus be conducive to resolving competition problems related to issues such as speed of delivery, price, quality, etc., which could give Austurljós an advantage in competition on the relevant market, or on related retail market. ECOI considers that if this non-discrimination obligation were not in place, then a negative competition situation in the relevant area could become even worse on the relevant wholesale market and/or related retail market.

1 Introduction

1.1 General

1. This document contains ECOI analysis of the wholesale markets for local access provided at a fixed location and central access provided at a fixed location for mass-market products, which are markets 3a and 3b in the EFTA (ESA) Surveillance Authority Recommendation on the relevant markets that can be susceptible to ex ante regulation from 2016. These are markets that largely correspond to markets 4 and 5 in the older ESA Recommendation from 2008, which were the wholesale market for access to local loops and the wholesale market for bitstream. The ECOI published an analysis of markets 4 and 5 along with its decision on obligations on undertakings with significant market power on 13 August 2014, see ECOI Decision no. 21/2014. The definition of these markets has changed in the current ESA Recommendation, with respect to developments in technology and access infrastructure, but markets 3a and 3b essentially correspond to markets 4 and 5 in the older Recommendation.

1.1.1 ECOI Decision no. 5/2021 on the relevant markets

2. The analysis here under discussion replaces the ECOI Decision no. 5/2021, dated October 19, 2021, on analysis of markets 3a and 3b, along with a decision on obligations on undertakings with significant market power. Analysis is made in the light of an ESA opinion on re-evaluation of geographic definitions of markets in the run-up to Decision no. 5/2021, of the ruling of the Appellate Committee for Electronic Communications and Postal Affairs (the Committee) in case no. 3/2021, dated 29 December 2022 and of significant changes to market circumstances that have taken place since Decision no. 5/2021, was made, see among other things the Siminn sale of Mila to the French asset management company Ardian France, which was finally completed with the settlement between the Competition Authority and Ardian on 15 September 2022. One can also note that the new Electronic Communications Act no. 70/2022 came into force on 1 September 2022.

3. The main conclusions of the ECOI Decision no. 5/2021, were to the effect that there was no active competition on related retail markets at national level, that substitutability was in place between local loops and bitstream access over copper and fibre, and that it was not justifiable to segment geographical markets in this country, as competitive conditions were not sufficiently heterogeneous between areas nor sufficiently stable. Míla was designated as an electronic communication undertaking with significant market power on those both markets and appropriate obligations were imposed on the undertaking as a measure in an endeavour to solve the identified competition problems on the markets in question. ECOI considered it however justifiable to apply obligations that were burdensome to a varying degree in 17 more specific municipalities, where it was deemed that there was more active competition, and in other municipalities in the country where competition was low or even non-existent. The obligations were mostly comparable to obligations imposed on Mila with PTA Decision no. 21/2014, but there was however an obligation added to the effect that Mila and Siminn - that then constituted a vertically integrated company group and were considered to form one economic unit in the understanding of competition law - passed an

economic replicability test (ERT). The new obligation led to Siminn being designated as a company with significant market power in the context of that obligation, along with Mila.

1.1.2 Changes to the market since ECOI Decision no. 5/2021

4. Since ECOI Decision no. 5/2021 was issued in October 2021, the situation on this market has significantly changed. Most notable issues were the Siminn sale of Mila, the conclusion of the Appellate Committee on the Siminn and Mila appeal regarding ECOI Decision no. 5/2021, the allocation of threads from the NATO fibre cable to Ljósleiðarinn and the subsequent agreement reached between Ljósleiðarinn and Sýn. New electronic communications legislation also came into force, see section 1.2.1 here below.

5. On 23 October 2021, some days after the ECOI Decision no. 5/2021 was issued on 19 October 2021, Siminn notified that the undertaking had signed a purchase agreement with Ardian on the purchase by the latter undertaking of Mila. The agreement was with a reservation of endorsement by the Competition Authority. Concurrently with the purchase agreement, Siminn and Ardian made a detailed long-term service agreement for a term of 20 years, which was to apply between Mila and Siminn. In the lead up to the sale, on 1 January 2021, specific electronic communications systems and specific wholesale service had been transferred from Siminn to Mila which strengthened Mila's position on the electronic communications wholesale market, which included the mobile distribution system (RAN), IP-MPLS data switching system, data transfer system, international gateway, Internet portal and wholesale of Internet service.

6. With the agreement between the Competition Authority and Ardian dated 15 September 2022, the Competition Authority endorsed the purchase and with the settlement, significant changes were made to the above specified service agreement between Mila and Siminn, and in addition to this Mila was required to accept certain conditions for the undertaking's operations. At the same time, Siminn signed a declaration where the undertaking guaranteed specific elements in the undertaking's operations. In the opinion of the Competition Authority, the barriers to competition, that were inherent in the Siminn sale of Mila and in the original service agreement, were removed and a fertile environment for powerful competition in the electronic communications market was created, and in addition to this the ownership of Mila and the removal of ownership ties with Siminn were positive steps for competition. In a news item from the Competition Authority on the day[1] in question, the following was stated by the director of the Competition Authority:

> *"Competition in rolling-out and operations of infrastructure in this country have brought Iceland to the vanguard in this field. During the times of change ahead, nurturing of competition by the authorities and commerce in this field will be a deciding factor in Iceland's competitiveness. The entry of an independent infrastructure investor in the Icelandic market and the cutting of ownership ties between Siminn and Mila are conducive to strengthening competition if things are done properly. For this to come to pass, the prerequisites and conditions for the transactions must support competition. The settlement presented here is intended to ensure this."*

[1] https://www.samkeppni.is/utgafa/frettir/kaupum-ardian-a-milu-sett-skilyrdi-til-thess-ad-vernda-samkeppni.

7. The main changes made to the Siminn and Mila service agreement were as follows:

1. Limitations were imposed on Mila's monopoly on providing wholesale service to Siminn. Siminn was then able to turn to other parties with up to 20% of wholesale service in fields where Mila has the strongest position, such as on the markets here under discussion.

2. Provisions were deleted that were to ensure rights for Mila to receive information on offers made by other suppliers to Siminn and thus equal them, i.e. "the English clause."

3. Cooperation between Mila and Siminn, among other things on commercial decisions, investments and development, were reduced to a significant degree.

4. Siminn and Mila reciprocal competition ban was removed or limited to a significant degree.

5. Efforts were to be made for technical development and efficiency to result in lower prices for customers.

6. The term of agreement was shortened from 20 years to 15, and there were amendments made to provisions for extension.

8. In addition to the above specified changes to the service agreement between Siminn and Mila, Mila undertook to comply with the conditions specified below in its operations:

1. A ban on bundling and intertwining of service elements that was to inhibit Mila from being able to exclude competition from the company's competitors.

2. Equal access to Mila systems and service was assured. Mila was obliged to respect non-discrimination, objectivity and transparency vis-à-vis electronic communications undertaking's that requested connection with Mila infrastructure in purchase of wholesale service. This also constituted a ban on any kind of discrimination between customers. In this way, access for all electronic communications companies to important Mila systems and services was assured, and steps were taken against the country's largest retail undertaking on the electronic communications market, Siminn, having priority in doing business with Mila.

3. Dissemination of information and obligations relating to changes to Mila systems and service. Mila is obliged to inform all customers in the same manner, about new or planned goods or service, to keep a level playing field.

9. In the above specified news item on the Competition Authority website dated 15 September 2022 it was also stated that as before, there would be strong commercial connections between Siminn and Mila, among other things for transfer of systems and service from Siminn to Mila in the run-up to the sale. With this in mind, Mila furthermore undertook to refrain from taking any measures that limited Siminn's freedom in this respect. Siminn also signed a declaration to the Competition Authority, where the undertaking guaranteed among other things that it would at any given time have the capacity to purchase electronic

communications service from Mila competitors. In addition to regular Competition Authority surveillance, an independent surveillance party was also appointed which was intended to conduct active surveillance to determine compliance with all conditions of the settlement.

10. It then states in the Competition Authority website news item in question:

> *"It is the assessment of the Competition Authority that the above specified changes to the wholesale agreement on the conditions that rest on parties to the merger, remove those competition barriers that the sale would otherwise have created.*
>
> *Without these changes and conditions, the Mila market dominance position in specific fields would have strengthened significantly and the conditions of the sale would have worked against competitive restraint on Siminn and other electronic communications undertakings. Without changes, these competitions barriers would have obliterated the competitive gains of cutting ownership ties between Siminn and Mila.*
>
> *Concurrently with investigation of the case, competition prospects and the future environment of electronic communications in this country have changed significantly. In this way Mila competitors in infrastructure and wholesale service have agreed and/or notified about the development and strengthening of data transfer in this country, particularly in the trunk line market. Foreseeable changes of this nature are taken into account when assessing the competition impact of the Ardian purchase of Mila.*

11. In a news item on the Ljósleiðarinn web page dated 30 June 2022[2], it was stated that the undertaking and the Ministry of foreign affairs had agreed on Ljósleiðarinn use of two of eight fibre threads in the NATO fibre cable which lies around Iceland to the West fjords. This is a lease of up to 10 years with the possibility of further extension. The undertaking's CEO was quoted as saying that the agreement in question was a watershed for Ljósleiðarinn, which would now be better prepared to serve its customers. Electronic communications undertakings used the Ljósleiðarinn fibre for their customers and in development and increasing density of 5G mobile phone systems. In this way, new opportunities became available for connecting to homes, companies and institutions, in areas that have not enjoyed Ljósleiðarinn service or its fibre connections up to this point in time. The undertaking was furthermore working towards the development of a new fibre ring, as there was need for more threads and a more extensive system than the current NATO cable could offer, in order to ensure further development and security in electronic communications. Development of Ljósleiðarinn on a new fibre ring would make the country better prepared for the future continuous increase in requirements and for increased competition on the electronic communications market. It was finally stated that the Ljósleiðarinn board had instructed the company's CEO to prepare for an increase in company share capital to strengthen the undertaking's economic and fiscal structure to enable it to grasp opportunities for investments that were now available with development of the fibre ring.

12. On 20 December 2022, Sýn and Ljósleiðarinn signed a purchase agreement for the Ljósleiðarinn purchase of the Sýn trunk line network and a long-term service agreement

[2] https://www.ljosleidarinn.is/frettir/ljosleidarinn-leigir-tvo-thraedi-i-nato-strengnum.

between the companies, for a term of 12 years on Sýn wholesale access and service over the Ljósleiðarinn trunk and access network, and also for service for Internet connections to foreign countries. The purchase was contingent on endorsement by the Competition Authority, which finally went through on 29 September 2023 with the Decision of the Competition Authority no. 37/2023. In a news item on the Sýn website dated 21 December 2022[3], the Sýn CEO is quoted as saying the following:

> *"It is positive for Sýn to complete an agreement with Ljósleiðarinn where we sell a powerful trunk line network that the company has developed during the last 22 years. With this, we sharpen our focus on company customers and rely on Ljósleiðarinn for development and maintenance of a high-quality fibre network across the whole country at competitive terms. With the service agreement we assure our access to secure connections, increase speed and high service level for the coming 12 years. This simplification of operation of company infrastructure provides a return in a lower investment requirement and lower operating costs for the future. The deal will strengthen Sýn balance sheet and liquidity and make the undertaking even more prepared to advance and increase market share on the electronic communications and media markets."*

13. In a news item on the Ljósleiðarinn website dated 20 December 2022[4], the undertaking's CEO is quoted as saying the following:

> *"We at Ljósleiðarinn celebrate this agreement with Sýn for three specific reasons. We purchase the Sýn trunk line network which helps us increase electronic communications security in the country to a significant extent, with a new and powerful fibre ring. In addition, we strengthen healthy competition on the electronic communications market by offering people and companies a choice for data transfer over fibre at as many locations as possible across the country. We finally ensure continuing good cooperation with Sýn, which has been one of Ljósleiðarinn's most important customers from the outset.*
>
> *The service agreement is now added to the prior agreement with Nova and Farice and increases efficiency of investments in which Ljósleiðarinn is currently involved. .. Ljósleiðarinn is proud to gather many parties together to construct a new and powerful electronic communications network around the country which both increases security and strengthens competition.*

14. Mila and Siminn appealed the above specified ECOI Decision no. 5/2021 to the Appellate Committee (the Committee). With the above specified ruling from the committee from 29 December 2022, the committee amended in parts the appealed decision on the Siminn sale of Mila, which was endorsed by the Competition Authority just under a year after the ECOI appealed decision was made. The ruling was mainly based on the changed situation brought about by the sale of Mila by Siminn.

15. The Appellate Committee therefore rescinded parts of the appealed decision that were based on the premise that Mila and Siminn belonged to the same company group. The

[3] https://www.ljosleidarinn.is/frettir/efnahagur-styrkist-og-traust-tok-a-rekstri/.
[4] https://www.ljosleidarinn.is/frettir/syn-og-ljosleidarinn-skrifa-undir-samninga/.

Committee noted that although there were still some connections between the companies as a result of their service agreement, it was not clear whether it would be possible to apply milder measures to counteract damaging impact from those connections on competition on the electronic communications market. The Committee considered it proper to rescind imposition of obligations that directly concerned the existence of the Siminn Group from and including 15 September 2022 when the merger had been authorised. This meant that the designation of Siminn as an undertaking with significant market power was rescinded, and the obligation on Siminn to pass, along with Mila, an economic replicability test (ERT) of the companies' fibre products, was withdrawn. This obligation was of course also withdrawn from Mila, as was the obligation that the companies needed to take care that there should not be an unnecessarily small difference between the Mila wholesale price and Siminn retail price. The Committee furthermore withdrew the obligation that had been imposed on Mila that the company should connect its bitstream equipment with fibre local loops of other network operators that so requested against a reasonable charge, as this obligation was intended to counteract the impact of vertical integration of Siminn and Mila. These obligations were never implemented.

16. On the other hand, the Committee made no changes to the main issues of the appealed decision, for example to the definition of the relevant markets, with respect to substitutability between fibre and copper, to the definition of geographic market, i.e. that the country was defined as one geographic market, to the designation of Mila as an undertaking with significant market power and to most of the obligations imposed on Mila by ECOI.

17. The ruling of the Committee came into force on 29 December 2022 and was to expire no later than 15 September 2023. Prior to that point in time, ECOI had to make a new market analysis of the relevant markets and make a new decision also before that point in time, which should replace the ECOI appealed decision, as it was amended with the committee's ruling. With a provisional decision, dated on September 15, 2023, ECOI imposed the same obligations on Mila that had been valid according to the above-mentioned ruling of the Committee until a decision on a new market analysis had been published, although no later than March 1, 2024. With a new provisional decision, dated on February 29, 2024, the obligations on Mila were extended, although no longer than until June 1, 2024.

1.2 Legislation and other legal sources on electronic communications

1.2.1 Electronic Communications Act no. 70/2022

18. In 2018, two new instruments were endorsed within the EU that replaced older Directives in the field of electronic communications from 2002 and 2009[5]. These are on the one hand, the Directive of the European Commission (EU)2018/1972 from 11 December 2018 on the setting of European regulations on electronic communications, European Electronic Communications Code or EECC Directive, sometimes referred to as "the Code". This is a new recast, that is to say, revised main material rules on the electronic communications market, which replaces older instruments. The other instrument is a Regulation of the European Parliament and Commission (EU) 2018/1971, from 11 December 2018 on the establishment

[5] The EU electronic communications regulatory framework from 2009 was never adopted in the EEA agreement and therefore not in Icelandic law.

of the Body of European Regulators for Electronic Communications or BEREC and the founding of the supporting Agency for Support for BEREC or BEREC Office, concerning amendments to the Regulation (EU) 2015/2120, and the annulment of Regulation (EU) no. 1211/2009 1211/2009.

19. The above specified instruments were adopted in the EEA agreement on 24 September 2021. The Electronic Communications Act no. 70/2022, which came into force on 1 September 2022, adopted the instruments in question into Icelandic law and provide authorisation to introduce the relevant regulations. In the Act on Electronic Communications Office of Iceland no. 75/2021, one can also find provisions that relate to case procedure and market analysis. This market analysis and the decision on imposition of obligations are thus entirely pursuant to the new Act on Electronic Communications and on the Act on the Electronic Communications Office of Iceland.

20. In the Act on Electronic Communications no. 70/2022, there were various amendments made to provisions on market analysis and obligations, though the methodology for making definitions of the relevant service markets and geographic markets and for assessment of undertakings' market power remain mostly unchanged. One of the objectives of the electronic communications legislation and of market analysis has, according to the new legislation, has now become to facilitate the roll-out of high-capacity electronic communications networks, and in addition for the objectives previously in force of facilitating effective competition and protecting the interests of consumers. Then various emphases in implementation of market analysis that were previously to be found in ESA Guidelines and Recommendations were enshrined in law.

21. It was also enshrined in law that ECOI should conduct market analyses within specific time limits. The general time-limit for review of analyses on specific markets will be 5 years and in exceptional cases 6 years, if ESA does not object to a reasoned request from ECOI for a one-year extension. If a new market is defined in a Recommendation on the relevant markets, market analysis shall be implemented within three months of the publication of the Recommendation. In such an instance, the analysis should be completed within 6 months of the completion of the above specified extension where ECOI has not completed or been able to complete the analysis within the time limits and has requested assistance from BEREC to complete the task. Markets shall be analysed at an earlier date than specified above where significant changes have occurred to conditions for competition.

22. Increased emphasis is placed on examining related retail markets as a first step, even where the markets being examined according to ESA Recommendation are all at wholesale level. If a forward-looking analysis leads the conclusion that competition will become active on related retail market/markets in the estimated term of validity of the analysis in question, even though there were no obligations in force on adjacent wholesale market/markets (the Modified Greenfield Approach) then obligations shall not be applied on the relevant wholesale market.

23. More emphasis is placed on geographic measures in the form of segmented geographic markets or varying obligations by areas, than was the case before.

24. There are various changes related to the imposition of obligations and material provisions that relate to obligations being more substantial than before, though some of them relate to some extent to lessening the level of complexity in the procedure.

25. In Article 47 of the Electronic Communications Act there is a new provision on access to civil engineering such as access to ducts and cable routes, and one must assess whether such obligations can suffice to facilitate competition, before a decision is made on applying obligations for another kind of access pursuant to Article 48, for example, access to local loops, bitstream or leased lines. This provision is intended to facilitate inter-platform competition, which is generally considered to facilitate more sustainable competition than intra-platform competition within the same electronic communications network. The provisions relate to cables, ducts and cable routes, unlike in Act no. 125/2019 on measures for efficient development of high-capacity electronic communications networks.

26. Another new provision can be found in Article 56 on an obligation for functional separation within a vertically integrated company, where such may only be applied in exceptional instances when other obligations do not suffice to tackle a serious competition problem. One can also find a new provision in Article 57 on a vertically integrated undertaking with significant market power implementing voluntary segmentation. If such an undertaking plans to transfer its access networks, or a significant part of these networks, to a separate legal entity owned by another party, or to create a separate operational unit for this purpose, and provide all retail suppliers with equal access, then ECOI shall be informed about this, with at least three months' notice.

27. Pursuant to paragraph 7 of Article 46 of the Electronic Communications Act, ECOI is obliged to monitor market development, such as in connection with business agreements, including agreements on co-investment, which have an impact on competitiveness, with respect to obligations on the market. If this development is not sufficiently important to require another market analysis, ECOI shall also without delay, assess whether it is necessary to review obligations that were imposed on undertakings with significant market power and shall amend prior decisions, including by withdrawing obligations or imposing new ones.

28. According to Article 55, an electronic communication undertaking with significant market power, that plans to build a new very high-capacity network, can submit an offer to provide other electronic communications undertakings with the opportunity of co-investment and/or access to such a network. Such a party can then be released from obligations to a greater or lesser degree, with respect to the new network, having fulfilled the conditions of Article 58.

29. According to Article 58, an electronic communications undertaking with significant market power has the option of submitting an offer of commitments with respect to a cooperative arrangement that relates to assessment of appropriate and moderate obligations pursuant to Article 46, to joint investments in very high-capacity networks pursuant to Article 55 and to efficient access for a third party without discrimination in connection with voluntary segmentation within a vertically integrated undertaking, pursuant to Article 57. In such instances, a certain procedure must be followed which among other things, requires national consultation and market testing. The procedure constitutes among other things that the company in question makes specific commitments in connection with access, that ECOI can

make binding for a given period of time, and the binding commitments in question can replace obligations to some extent or completely. ECOI can extend the term of the commitments.

30. According to Article 59, a wholesale-only undertaking with significant market power can be exempted from obligations to a significant degree, having fulfilled specific conditions, that among other things constitute that the undertaking in question and its owners only operate on a wholesale market and not on retail market for electronic communications service and that it is not bound to conduct business with one specific company on a retail market. The requirements that an undertaking needs to fulfil in order to be deemed a wholesale-only undertaking are as follows:

a. All undertakings and operational units within the undertaking; all are controlled by but not necessarily entirely owned by the same beneficial owner, and shareholders who can exercise management power over the undertaking, only have operations, now and in the foreseeable future, on wholesale markets for electronic communications service and therefore do not have operations on retail markets for electronic communications service provided for end users.

b. The undertaking is not bound to conduct business with one specific undertaking which operates on a downstream market and is active in a retail market for electronic communications service which is provided to end users, as a result of an exclusive agreement or an agreement which in reality is equivalent to an exclusive agreement.

31. The competitive risk resulting from behaviour of such parties should under normal circumstances be less than the risk from a vertically integrated undertaking, given that the business model is genuine and that there are no incentives to discriminate between electronic communications undertakings that provide retail service. Nevertheless, the existence of such a wholesale undertaking does not necessarily lead to active competition in related retail markets. If an undertaking is such a wholesale undertaking, the only option for ECOI is to impose obligations for access, non-discrimination and fair and reasonable pricing. ECOI shall review obligations imposed on such a party at any point in time, if the Administration comes the conclusion that the conditions of the provision are not fulfilled. In paragraph 4 of the provision one can find a safeguard that authorises ECOI to implement all obligations, should a competition problem arise, despite it being a case of a wholesale-only undertaking.

32. The main rule is that ECOI only makes market analysis of wholesale markets and imposes obligations at wholesale level in an endeavour to resolve identified competition problems on related retail market or markets. Article 61 does however make it possible in exceptional circumstances to analyse a specific retail market or markets and to impose obligations at retail level. ECOI is thus only authorised to impose obligations on the retail market when it is deemed clear that obligations at wholesale level do not suffice to achieve active competition. The retail obligations that would then be applicable could, among other things relate to an intervention in pricing and service offer (e.g., bundling), to measures that facilitate entry of new players in the retail market, to measures to prevent damaging predatory pricing, to measures to prevent discrimination etc.

33. Pursuant to Article 60, specific rules apply on procedure that shall be adhered to when regulated networks are withdrawn from operation (migration), e.g. when the operation of

copper network is decommissioned in some areas. In order to facilitate switching from copper networks to next generation networks, ECOI can with the interests of consumers in mind, monitor such decommissioning of networks and can where necessary, impose conditions for appropriate switching procedures, for example with respect to advance notifications on such switching, time schedule, transparency and access to other service that can replace that which is decommissioned and which is at least of comparable quality. In order to prevent unjustified delays on switching, ECOI can withdraw obligations that rest on the network being decommissioned or replaced, if certain conditions are fulfilled, such as that another access option of comparable quality is being offered. This requires national consultation and consultation with ESA.

34. An advisory opinion is expected from BEREC in those instances where ESA has raised serious doubts to ECOI draft market analysis and has moved the case to phase II.

35. In temporary provisions of the new Electronic Communications Act, one can among other things find rules on applicable law. Temporary provision I prescribes that until new regulations have been confirmed, those rules and regulations that now apply to the matters covered by the Act shall be fully in force, insofar as those provisions do not contravene the provisions of the Act. In temporary provision III it is prescribed that all obligations imposed on an electronic communications undertaking, pursuant to Chapter VII of the Act on Electronic Communications no. 81/2003, and that are in force on the coming into force of the new legislation, shall be maintained until a review of the provisions has been conducted, subsequent to market analysis.

36. A regulation on market analysis in the field of electronic communications, no. 741/ 2009, was issued in 2009. The regulation covers the process and the main criteria to be applied when defining electronic communications markets, analysing relevant markets, making decisions on designation of an undertaking or undertakings as having significant market power and making decisions on obligations. A new regulation on market analysis in the field of electronic communications was issued by the Minister on 23 May 2023, see regulation no. 556/2023, which replaced the above specified regulation. The new regulation is based on the Electronic Communications Act no. 70/2022, the act on the ECOI number 75/2021 and on relevant Recommendations and Guidelines from ESA on market analysis and it was used as a reference when conducting this market analysis.

1.2.2 Guidelines and Recommendations from the EFTA Surveillance Authority (ESA)

37. ESA has issued Guidelines and Recommendations that deal with implementation of market analysis. First, there are Guidelines for market analysis and the assessment of significant market power, from 16 November 2022.[6] Secondly, there are Recommendation on relevant markets, which can be susceptible to ex ante regulation from 11 May 2016 (hereafter

[6] The Guidelines took into account comparable Guidelines from the EU Commission from 2018, *see Commission Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and service* from 26 April 2018 (2018/C 159/01). See also Commission staff working document which has further coverage on market analysis, see *"Commission staff working document, C (2018) 2374 final."*

named "Recommendation").[7] The EU Commission issued new Recommendation on the relevant markets in December 2020[8], where the number of markets is reduced, and this Recommendation does not apply to this market analysis, as neither has it been adopted in the EEA agreement or published by ESA. Thirdly, one can note ESA Recommendation no. 65615 from 2 December 2009 on notifications, time frame and consultation with ESA and with other electronic communications regulatory authorities in the EEA in connection with market analysis[9].

38. When implementing the market analysis, account shall also be taken of various Recommendations from the EU Commission and Guidelines from BEREC, the Body of European Regulators for Electronic Communications. The Recommendations and Guidelines will be explained at appropriate points in this analysis.

39. In the existing Recommendation on the relevant markets that can be subject to ex ante regulation, four types of electronic communications markets that ECOI is obliged to analyse have been defined in advance in accordance with current electronic communications legislation and with Iceland's obligations pursuant to the EEA Agreement. Furthermore, the electronic communications legislation prescribes that ECOI define these markets in accordance with circumstances that pertain in Iceland. In this connection it could transpire that ECOI market analysis will deviate to some extent from what is prescribed in the Recommendation.

40. As stated here above, the EU Commission issued new Recommendation on the relevant markets in December 2020. This Recommendation has not been adopted in the EEA Agreement or been issued by the EFTA Surveillance Authority. ECOI is therefore obliged to apply the existing ESA Recommendation from 2016, where markets 3a and 3b are defined,

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[7] EFTA SURVEILLANCE AUTHORITY DECISION of 11 May 2016 RECOMMENDATION on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation (http://www.eftasurv.int/media/decisions/College-decision---Revision-of-ESA-recommendation-on-Relevant-markets-susceptible-to-ex-a.pdf They take account of Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Text with EEA relevance) (2014/710/EU). The above specified ESA Recommendation is based on comparable Recommendation from the EU Commission 2014/710/EU from 9 October 2014. On 18 December 2020, the EU Commission published a new Recommendation on this subject, see C (2020) 8750 final. In the publication, markets have been reduced from 5 to 2 and the new Recommendation is only wholesale local access provided at a fixed location, which is comparable to market 3a in ESA Recommendation currently in force, and wholesale dedicated capacity. Market 3b in the ESA Recommendation in force has thus been removed and ECOI therefore needed to demonstrate that the conditions of the Three Criteria Test were fulfilled in order to be able to designate a company with significant market power on that market and to impose appropriate obligations on such a party. As ESA has not updated its Recommendation, ECOI will use the ESA Recommendation in force from 2016.

[8] See C (2020) 8750 final.

[9] See https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:302:0012:0021:EN:PDF. The Recommendation was based on a comparable Recommendation from the EU Commission no. 2008/850/EC from 15 October 2008. On 30 March 2021, the EU Commission published new Recommendation no. 2021/554 on this subject. "Commission Recommendation (EU) 2021/554 of 30 March 2021, on the form, content, time limits and level of detail to be given in notifications under the procedures set in Article 32 of Directive (EU) 2018/1972. See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H0554. ESA has not updated its Recommendation on the subject and so the consultation procedure with ESA on the market analysis here under discussion will take place according to the ESA Recommendation in force from 2009.

and the definition of service markets in this analysis is according to this Recommendation. ECOI does however use as grounds for this market analysis, various views presented in the above specified Recommendation from the EU Commission from 2020, among other things on carrying out market analysis, as in this Recommendation, various elements have been included that describe the development since 2014 when the prior Commission Recommendation was issued.

1.2.3 Icelandic government policy in electronic communications

41. Act no. 132/2005 on the Electronic Communications Fund[10], prescribe that an electronic communications fund owned by the state shall have the role of supporting development in the field of electronic communications on the basis of a specific electronic communications plan. The Fund began formal operations at the beginning of 2006. Custody and management of the Fund is under the aegis of the Ministry of Higher Education, Science and Innovation (HIN). The role of the Fund is to allocate funds to projects that aim at rolling-out of electronic communications networks. The fund comprises a three-person board and receives contributions from the Treasury. There are plans to amend the legislation and regulation that apply to the Fund in the near future.

42. On 3 June 2019, a parliamentary resolution was passed on policy in electronic communications for the years 2019-2033.[11] This resolution placed emphasis on, among other things, the strengthening of competition on the electronic communications market and on increasing Iceland's competitiveness. The vision for the future was that Iceland would be in the vanguard with reliable and secure infrastructure, and that the country's electronic communications systems would form an integrated whole, for the benefit of individuals and economic activity. Core systems should be developed with, among other things, accessibility and security in mind and also connections between regions and the connection between Iceland the rest of the world. Development and operations of electronic communications should support strengthening of quality of living and economic activity, within and between regions, and access for residences and commercial premises to fibre should have reached 99.9% by the end of the policy plan in 2033. In funded deployment of fibre systems, particular attention shall be paid to trunk lines, wireless communication stations and interconnection of systems. Iceland should also be a leading nation in utilising fifth-generation mobile networks, 5G. To be a policy of increasing efficiency in electronic communications for users and the community, and implementation, maintenance and service shall be conducted in an efficient manner and funds used as efficiently as possible, taking into account considerations for competition.

43. On that same day, 3 June 2019, the Althingi also passed a parliamentary resolution on a 5 year electronic communications plan for the years 2019-2023.[12] Then it was stated among other things that the objective of economy and efficiency in electronic communications should among other things be achieved by evaluating incentives for investments in electronic communications infrastructure on the basis of competition and cooperation, such as for 5G, and proposals should be elaborated as appropriate. In addition to this, the objectives were

[10] https://www.althingi.is/lagas/nuna/2005132.html.
[11] https://www.althingi.is/altext/149/s/1688.html
[12] https://www.althingi.is/altext/149/s/1687.html.

defined that at the end of 2023, 99.9% of residences and undertakings should have access to 100 Mb/s connections, 90% should have access to 1 Gb/s, 95% should have access to a fibre connection and 99.95% should have access to a mobile phone and mobile network.

44. According to the Ministry of Higher Education, Science and Innovation, the above objectives no longer apply, see here below.

45. From the outset, the Electronic Communications Fund allocated funds to projects one could assume would not have been launched on market terms. The Fund has among other things, supported a large number of projects that relate to strengthening the country's trunk line networks. The project that matters most for this analysis is Iceland Digital Connected, which was a temporary national government effort to support municipality development of fibre systems in rural areas to residences, undertakings and to other locations deemed eligible for grants, outside market territories. The project commenced in 2016 and the final allocation from the Fund was made in 2021, where it was expected that deployment of the last tens of fibre local loops by the Fund will be completed in 2023. Grants were allocated to 57 municipalities, totalling something over ISK 3 billion with the addition of some hundreds of millions of ISK provided by the Treasury on the grounds of regional development. The municipalities themselves and owners of buildings, then provided funds for the implementation against the state contribution. The project covered about 6,300 locations eligible for grants.

46. In a document from the Electronic Communications Fund from early 2021, entitled "Iceland Digital Connected 2021" that dealt with the final allocation of funds from the project, it is stated on page 2:[13]

> *"The objective of the authorities is that the involvement of the state in funding the project for fibre roll-out to rural Iceland outside market areas, Iceland Digital Connected, would end in 2021. The project is an integral part of government policy for fibre roll-out to the whole country by the end of 2025[14]. There is among other things, the need for development of fibre systems outside urban areas in order to achieve this objective. Synergy with other projects and with existing electronic communications infrastructure shall be utilised where possible if this leads to more efficient development than otherwise. … The system that is built shall be designed for open access with an adequate number of fibre threads. Emphasis should be placed on future activity and decades of durability for future development that exhibits growing demand for connections and for increased bandwidth."*

47. In the state financial plan for 2024-2028 which was submitted to the Althingi in March 2023 and passed by the Althingi on 9 June 2023, it among other things, states in a section that deals with the main challenges ahead, that fibre deployment in the country needs to be completed if government emphases for Iceland, as a gigabit country are to be realised during the coming years. In 63 urban locations and urban nuclei of 102 across the whole country, something under 80% of residences and undertakings had high-capacity network connections

[13] https://www.stjornarradid.is/library/01--Frettatengt---myndir-og-skrar/Skjol---Frettatengt/%C3%8Dsland%20lj%C3%B3stengt%202021_skilm%C3%A1lar.pdf

[14] When this was written in 2021, the then minister in this field was looking towards this objective, but it was never official documented government policy.

over fibre at the beginning of 2023. On the country's arterial roads, there was a total of 180 km without secure voice telephony connection and network connection through a mobile phone. One of the main prerequisites for development and operation of these wired access networks being realised, was that the fibre trunk line systems across the country be increasingly strengthened, extended and connected to a distribution ring. The new electronic communications legislation places increased emphasis on security of electronic communications infrastructure and service, which required upgrading of electronic communications infrastructure and prioritisation of measures and funds.

48. In the section in the above specified financial plan on opportunities for improvements, it is among other things stated that development of fibre access connections in all of the country's rural areas should be successfully completed in the year 2022 and that continued deployment of fibre to residences and undertakings, was one of government's priority projects. Parties to the market have also announced plans in this direction in recent times. The lease of two NATO fibre threads, which had started in 2022, was intended to support increased competition on the wholesale market and development of fibre access networks across the whole country.

49. In a section on risk factors in the above specified financial plan, it is stated that as things stand, there was a risk of development of a continuous high-capacity network on all arterial roads and of fibre roll out to all urban locations, might not be achieved during the period of validity of this financial plan which extended to the end of 2028. The government planned to meet this challenge with, among other things, special requirements in frequency licences and with incentives for both cooperation and competition on the basis of the new electronic communications legislation.

50. With regards to objectives and metrics in the above specified financial plan, there is one objective, that all inhabited areas shall be offered access to a reliable high-capacity network connection and that on all main arterial roads there should be a reliable mobile network connection. The number of urban locations and urban nuclei (total 102), where fewer than 80% of residences and undertakings have access to a fibre electronic communications connection, was said to be 63 at the end of 2022. This number should be down to 48 at the end of 2024 and at the end of 2028, this situation should not exist in any urban location or kernel in this country.

51. It was stated in the government's manifesto that emphasis would be placed on purposeful efforts to strengthen network and electronic communications security and furthermore that capability and funding would be ensured for continued development of high-capacity networks in those locations where the market did not do so or where this was required for security reasons. The government objective was for Iceland to be a gigabit country. The prerequisite for this was public access for residences and workplaces to fibre Internet connection and 5G with the accompanying strengthening, enlargement and circular connection of fibre networks around the country, and uninterrupted mobile coverage on arterial roads. General access and reliable high-capacity Internet connection over fibre and/or 5G should strengthen quality of residence independent of job; opportunity for education independent of location; and equality for residents and genders.

52. It was finally stated in the financial plan that prescribed requirements for electronic communications that had been removed since the last financial plan were: Access to 100 Mb/s; Access to 1 Gb/s; Access to fibre; Proportion in urban/rural areas within 50m/500m from fibre; Access to 4G/5G. In their place, new requirements were elaborated that better reflected the projects on which the authorities intended to concentrate their efforts during the period of validity of the financial plan. As before, it would be possible to monitor the development of some of these older requirements in ECOI statistical reports.

53. In the 153rd parliament session 2022 to 2023, a parliamentary resolution was tabled for policy-making measures to strengthen the knowledge community in Iceland until the year 2025. The proposal was not passed during that parliamentary session, but it is considered likely, it will be tabled during the 154th parliamentary session 2023-2024. It was stated there that the primary objective in electronic communications during the period would be to connect the country's regions and the country as a whole to the outside world and that infrastructure and service should meet the needs of the public and of economic activity. Sustainable development across the country should be supported with the use of digital solutions. Robust network security must be ensured for this to be achieved. Under the heading "Measures that support objectives in electronic communications, information technology and network security", it is stated that Iceland should become a gigabit country.

54. In the explanatory memorandum to the proposal for the parliamentary resolution, there is among other things discussion on current status. It is stated there that access to reliable high-capacity electronic communications connections across the whole country is the most important equality and regional development issue of modern society. Iceland could become the world's first gigabit country. Distribution and capability of electronic communications infrastructure in Iceland have never been as great as now. Electronic communications networks have generally proven reliable in recent times, the offer of electronic communications services was good, and competition was active in most areas. The status of electronic communications in inhabited areas was particularly good and this also applied in most uninhabited areas, although there were still some remote areas in this sparsely populated country, where electronic communications possibilities were limited. One should keep in mind that the role of the authorities is first and foremost to create the environment for electronic communications, and only to a very small extent to fund them.

55. It is also stated that the criteria for performance of high-capacity networks has changed rapidly in recent years. At the same time, development of fifth-generation mobile networks (5G) offers uncharted opportunities, both with even greater performance in data transfer, but first and foremost through increased response speed of such mobile networks in communications between devices. Electronic communications service was provided on competition market that was subject to clear and demanding regulation.

56. With regards to future challenges, the memorandum to the above specified proposal for a parliamentary resolution state that despite the generally positive status of electronic communications and network security, the authorities are faced by a number of challenges in this field. Rapid technological development and the ever-present demand from the community for application of digital solutions to create opportunities and to enhance quality of life, meant that the sector was constantly subject to an endless stream of new demands. Increase data transfer speed to residences and undertakings clearly required a demand for

substantial increases in performance in other elements of electronic communications networks, such as trunk line networks and electronic communication submarine cables to foreign countries, as the chain is never stronger than its weakest link. One could assume that the weakest link in the overall structure of electronic communications networks at this point in time is the capacity and offer of trunk line networks, particularly between geographic areas. There was a need for increased capacity and performance and also for increased service offer and more active competition. Electronic communications legislation now includes an incentive for increased sharing when developing such expensive electronic communications infrastructure. In recent years, the authorities have provided strong support for development of high-capacity networks in geographic areas where the market has not sufficed. High-capacity electronic communications networks are however not yet available for all citizens. There were also various opportunities for further improvements to service over mobile networks.

57. With respect to measures that support the objectives in electronic communications, information technology and network security until the year 2025, it is stated in the memorandum that work will be done towards widening deployment of reliable high-capacity networks for residences and commercial facilities, that will be based on fibre technology and 5G mobile phone networks, with fair pricing which compared favourably with that of other countries. Work would also be done on developing 5G mobile networks on all main arterial roads and at tourism locations. For Iceland to be a gigabit country, residences and workplaces would need to have access to a 5G or fibre network. Fibre clearly carries such network speeds and within a few years such speed would also be available over 5G. General access and reliable wired and/or wireless gigabit network connections were dependent on powerful fibre trunk line networks across the whole country. With access for all citizens to high-capacity networks, opportunities to choose a place of residence independent of work would increase, as would opportunities for increased education and equality between citizens and the genders would increase. When implementing measures, the following factors would be taken into account:

- That the development of high-capacity networks to residences and undertakings would be in those areas where such networks had not been already connected.
- That development, supply and resilience of trunk line electronic communication networks would fulfil market needs at any given time.
- That the development of fifth-generation mobile networks would take place across the whole country.
- That new mobile networks would replace older systems such as GSM, third-generation mobile networks (3G) and Tetra systems.
- That mobile networks on the main arterial roads and tourism locations would be independent of the electronic communications undertakings' subscription in question.

58. It was also stated that work would be done towards ensuring that all inhabited areas would have an offer of a reliable high-capacity network connection and that this would result

in a significant reduction of those urban nuclei where fewer than 80% of residences and companies, had access to a fibre electronic communications connection. By Iceland becoming the first gigabit country in the world, it should be possible to ensure access for all citizens to high-capacity networks and thus make it easier for them to choose their place of residence, regardless of their work and to increase their opportunities for increased education.

59. With respect to the above specified objective that no urban location or urban nuclei in the country should have less than 80% access to fibre connection at the end of 2028 - thus withdrawing the prior objective of almost 100% fibre distribution at all locations - the authorities reason that it is not realistic to aim for more than 80% of this access, in the light of the fact that some citizens do not want an Internet connection, or do not want fibre, or do not wish to or cannot pay the connection charge, or choose to let a high-capacity mobile connection suffice. The last of the above specified points could indicate increasing substitutability between varying technologies for high-capacity network connections, whether they are wired or wireless.

60. The above specified financial plan for the year 2024-2028, which was passed by the Althingi on 9 June 2023 and the parliamentary resolution on policy-making measures to strengthen the knowledge community in Iceland until the year 2025, is intended to replace the above specified parliamentary resolution on electronic communications plans from 2019.

1.3 ECOI implementation of market analysis

61. Implementation of market analysis is divided into four main phases:

- Analysis of related retail markets.
- Definition of the relevant service markets and geographic markets.
- Analysis of each of the defined markets, assessment of whether there is active competition on these markets and a decision made as to whether one or more undertakings should be designated as having significant market power.
- A decision is made on whether obligations shall be imposed, amended or withdrawn on undertakings with significant market power. If obligations are imposed on an undertaking with significant market power, or maintained or amended, it shall be decided at this stage whether the undertaking in question is considered a wholesale-only undertaking pursuant to Article 59 of the Electronic Communications Act no. 70/2022 or not, where fewer obligations are available to ECOI if the relevant undertaking is considered to be a wholesale undertaking of this nature.

62. Work on the analysis, on which this review is based, commenced in 2018. The Administration has collected information, among other things regular statistical information, and has had communications with parties to the market, among other things in the form of queries and gathering of data. Statistics are collected from all parties to the market at 6 monthly intervals. In addition to this, ECOI collects and registers information on all changes

to tariffs as they take place. In addition to this ECOI operates a database on distribution of electronic communications networks (GAF).

63. A market analysis and draft decision on imposition of obligations, which became ECOI Decision no. 5/2021 were sent to the EFTA Surveillance Authority (ESA) for formal consultation on 14 November 2021, pursuant to Article 28 of Act no. 75/2021 on ECOI. With a letter from ESA dated 14 October 2021, that institution authorised ECOI to make a final decision in the case, while making a number of comments on the draft analysis and encouraged ECOI to take into consideration to the extent possible, the comments in question, which can be found in appendix D to the Administration's Decision no. 5/2021. The comments related to the following issues:

- Need to better explain instability with respect to local development in connection with geographic definition of markets.

- Need to ensure that obligations are justifiable and in accordance with proportionality in all areas.

- Need for reassessment of geographic definition and consultation with ESA on this issue.

- Ensure that market analyses are conducted within normal time frame and ensure compliance and efficiency of imposed obligations.

64. Mila and Siminn appealed the above specified ECOI Decision no. 5/2021 to the Appellate Committee. With the Committee ruling from 29 December 2022, the Committee changed in parts the appealed decision on the Siminn sale of Mila, which was endorsed by the Competition Authority just under a year after ECOI made the appealed decision, as stated in section 1.1.2 here above.

65. Since the Siminn sale of Mila to Ardian was finally processed by the Competition Authority on 15 September 2022, ECOI has worked on review of the market analysis that led to the ECOI Decision no. 5/2021 Among other things, the Administration collected various data and information from parties to the market and held meetings with them, and in addition to this, commissioned a consumer survey to investigate potential substitutability between connections over fixed line network and mobile network. During this process it quickly became clear, particularly after Sýn and Ljósleiðarinn negotiated an agreement in December 2022, that ECOI needed to conduct market analysis on these markets from the ground up, particularly with regards to definition of geographic market. In addition to this there are several indications that there is potential substitutability between Internet connections over a fixed network on the one hand a specific type of mobile network technology on the other at retail level and possibly also at wholesale level.

2 Definition of the relevant markets

2.1 General on definitions of service markets

66. In this section and in sections 3 and 4, the focus will be on definition of relevant service markets, i.e. markets 3a and 3b and related retail market or markets. There will be discussion on geographical definition of markets in section 5 below.

67. Market analyses are important tools to delineate and define competition boundaries between undertakings and the first step taken by ECOI in this process is to assess whether there is a need to apply obligations on an electronic communications undertaking with significant market power. This first step in market analysis is taken by defining and delineating markets that will be examined, both with respect to types of goods or service that can be included in the market and geographically. The main objective of market definition is to systematically determine the competitive pressure faced by undertakings and thus support the main concern of market analysis, i.e. to evaluate market power of undertakings on the relevant market and as required to impose appropriate obligations on undertakings with significant market power.

68. Market definitions are thus not an objective in themselves, but rather an initial step in the process to assess market power of undertakings.[15] Nor are they a mechanical or predetermined procedure, but it is rather that they require analysis of all available data and indications, among other things on past behaviour of parties and a broad overview of the workings of the sector in the country in question. As market analyses allow for a forward-looking vision, the need is more for a dynamic approach than static in market definition.

69. According to paragraph 1 of Article 43 of the Electronic Communications Act no. 70/2022 and Article 5 of the Regulation on market analysis in the field of electronic communications no. 556/2023, ECOI shall define service or goods markets and geographic markets in accordance with the main principles of competition law and with obligations according to the EEA Agreement. The Competition Authority shall be consulted, where appropriate. According to paragraph 2 of Article 43 of the Electronic Communications Act, ECOI shall to the extent possible, take into consideration Recommendation issued by ESA on the relevant service markets and the ESA Guidelines on market analysis and assessment of significant market power, having taken into account national circumstances, particularly with reference to geographical markets, where the nature of competition in infrastructure in specific areas is taken into account in accordance with the provisions of competition law. ECOI shall, where applicable, take into account the conclusions of a geographical survey made in accordance with Article 11 of the Act on ECOI no. 75/2021.

70. As has been stated, it is necessary for ECOI to evaluate whether the markets, as defined in the ESA Recommendation on the relevant markets, harmonise with Icelandic circumstances. Both the service and geographic markets must be defined before it is possible

[15] It is not necessary to make a detailed examination of all possible market definitions if conclusions with respect to market power are manifestly the same in all instances.

to assess whether market conditions require the designation of an electronic communications undertaking as having significant market power and imposition of obligations.

71. Having in mind the above specified ESA comments presented in section 1.3 here above on the prior market analysis and imposed obligations in Decision no. 5/2021, ECOI considers it now the proper time to review geographic definition of markets in Decision no. 5/2021 for the coming years. Other issues that justify such a review is the above specified Siminn sale of Mila, with the attendant transfer of systems from Siminn to Mila; the above specified allocation of two threads in the NATO fibre cable to Ljósleiðarinn; the above specified sale of Sýn electronic communications systems to Ljósleiðarinn and the long-term service agreement between the undertakings from December 2022 and the above specified Appellate Committee ruling from 29 December 2022. The uncertainty that characterised the market when Decision no. 5/2021, was made, has to a large extent been resolved, thus significantly stabilising the situation on the market which now affords the opportunity to examine geographic division of the market, rather than apply varying obligations by geographic area. In addition to this, several indications soon came to light, during the processing of the analysis, of potential substitutability between Internet connections over a fixed network on the one hand a specific type of mobile network technology on the other at retail level and possibly also at wholesale level.

72. In item 5 of Article 4 of the Competition Act no. 44/2005 a *market* is defined as a sales area for a product and substitute product and/or a sales area for a service and substitute service. Substitute product and substitute service are defined as a product or service that can fully or to a significant extent replace another. In competition jurisprudence, this has been interpreted such that such substitutability shall not only be evaluated on the basis of objective characteristics of the product/service, of its planned use by the purchaser and its price, but also by taking into account competition conditions and/or conditions of demand supply. Those products that provide competitive restraint are thus named substitute products and the services that provide competitive restraint are thus named substitute services, and each market comprises goods or services that have mutual substitutability.

73. ECOI shall therefore categorise under the same product or service market the products or services that consumers use for the same purpose. Products or service that only provide limited substitutability do not for this reason belong to the same product or service market. Although the final use of a product/service is closely related to its characteristics, varying goods or service types can be an option for the use in question.

74. Substitutability can broadly be assessed on the basis of two points of view or types of competitive pressure that must be taken into account in connection with the behaviour of parties to the market. First, how readily customers believe that one product can be a substitute for another (demand-side substitutability). Second, how easily a competitor of a given undertaking can adapt his production so that his product falls within the market to which a product of the given undertaking belongs (supply-side substitutability).[16] Demand-side substitutability is considered to be the foundation for market analysis, while supply-side

[16] See further article 7 of the regulation on market analysis in the field of electronic communications no. 556/2023 and paragraphs 38-40 in the Guidelines and Explanatory Memorandum to the Commission Recommendation, section 2.1.

substitutability is less significant. If one can show demand-side substitutability, one does not need to conduct a detailed assessment of supply-side suitability as the demand side suffices. Potential competition is, on the other hand not examined at the market definition stage, as potential competition calls for significant sunk costs, unlike demand-side substitutability. Potential competition is however taken into account when assessing market power pursuant to Article 21 of the Regulation on market analysis in the field of electronic communications no. 556/2023.

75. More specifically, demand-side substitutability measures the level of willingness of consumers to switch from the product/service in question to another product/service as a reaction to a small (5-10%) but non-transitory price increase in the reference product/service. It is not necessary that all consumers switch, but rather that they do so in sufficient numbers for the above specified price increase to be unprofitable (marginal customers).[17] ECOI shall use all data and indications on prior consumer behaviour and shall assess their likely reactions. Likely reactions of competitors on the relevant market shall furthermore be assessed. Consumer opportunities to switch can however be limited by significant switching costs, e.g. investments in equipment to enable use of the specific technical solution. Significant switching cost can lead to products or service not belonging to the same market. Technical development at retail level has generally led to increased competition between technical solutions as the various services have increasingly been deemed substitutable for each other, particularly when one considers electronic communications service provided over a network at a fixed location.

76. More specifically, demand-side substitutability indicates whether competitors of the party in question would make changes to their production in the short term (within 1-2 years) or offer the product or service in question without incurring significant additional costs, in the case of a small non-transitory price increase.

77. In addition to considering whether there is substitutability between a product/service because of its characteristics, price and planned use, ECOI can also investigate, where necessary, prevailing demand conditions (and as appropriate supply conditions) by applying the hypothetical monopolist test (SSNIP) in order to complete a definition of the relevant product or service market, among other things to decide whether varying technical solutions, such as copper, fibre or mobile network belong to the same market at retail and wholesale level.

78. When applying the SSNIP test, ECOI should assess what would happen if the price of the product/service in question would increase permanently to a small degree (5-10%), given that the price of other products/service would remain unchanged. If such a price increase were profitable, the market is no broader than the product/service in question as there is no substitutability. This generally happens when demand side elasticity is low. When demand side elasticity is however high, one can usually draw the conclusion that consumers consider there to be substitutability between product or service types.

[17] The Hypothetical Monopolist Test (SSNIP-test) as discussed in Article 12 of the Regulation on market analysis in the field of electronic communications no. 556/2023.

79. ECOI shall primarily focus on a specific reference/focal product or service that is provided in a specific area that could be susceptible to ex ante regulatory obligations. The next step for ECOI can be to add products/services and investigate whether competition from these products/services exert pressure on the price of the reference/focal product or service. This needs to be done until it is possible to assert that such a price increase is profitable, i.e. that there is no longer a risk that profitability will decrease because of a drop in sales resulting from switching by sufficiently large number of customers to substitute products or service.

80. The SSNIP test is generally applied to products or services where pricing is unrestricted. If a product/service is subject to ECOI price control, one shall generally assume that the cost analysed price is the competitive price and shall thus be used as a basis in the test. When consumer choice is impacted by other factors than price to a significant extent or entirely, the SSNIP test is not appropriate to assess substitutability.

81. It can be problematic to apply the SSNIP test to products/services, when the product/service has not been on offer and there is thus no price in place. If no such product/service is available on the initiative of the undertaking or resulting from obligations, but could technically and commercially actually be offered, ECOI can consider using self-supply on an electronic communications network, i.e. a notional market to define the relevant product or service market, if it is demonstrated that consumers will otherwise suffer harm on the retail market and that there is demand for such a product/service.

82. Under certain circumstances it is possible to expand the boundaries of the relevant market, such that it covers a product or service which would naturally fit within the relevant market with respect to chain of substitution, although there might be no direct substitutability between all products/services in the chain, i.e. when there is no substitutability between product/service A and C while product/service B is a direct substitute for A and C. This means that products/services A and C are in the same market as they are both subject to price constraint from product/service B. Such expansion of markets must be approached with caution and the conclusions must be adequately reasoned with reference to data. Among other things, one must demonstrate price interdependence at the extremes of the chain.[18]

83. Where the price for current technical generations can exercise constraints on the price for future technical generations it is likely that a chain of substitution exists, which justifies categorising all technical generations under the same product/service market. Where such constraint on price normally exists for varying technical generations, they are generally categorised under the same market. When most consumers have switched to higher performing electronic communications infrastructure, there can be a group of users that still use legacy technology. ECOI should endeavour to inhibit such development by refraining from defining overly narrow markets.[19]

84. There can be substitutability between varying products/service as a result of increased convergence between various technological solutions, which often means that electronic

[18] The chain of substitution is discussed in Article 9 of the Regulation on market analysis in the field of electronic communications no. 556/2023.

[19] See paragraphs 44 and 45 on page 14 in ESA Guidelines on market analysis and the assessment of significant market power from 16 November 2022 (SMP Guidelines).

communications companies can offer comparable bundles at retail level. The use of digital transmission systems can lead to similarities in the performance and characteristics of network services using distinct technologies.[20]

2.2 Definition of relevant markets, according to ESA Recommendation and Guidelines

85. The service markets being examined here have been defined in the ESA Recommendation on the relevant market from 2016 in the following manner:

a. Wholesale local access provided at a fixed location (market 3a).

b. Wholesale central access provided at a fixed location for mass-market products (market 3b).

86. ECOI point of departure for definition of relevant markets is the definition shown in the ESA Recommendation. ECOI must nevertheless assess whether this definition is consistent with national circumstances and where specific types of wholesale service that are offered in this country, belong within the relevant markets, see paragraph 2 of Article 5 of the Regulation on market analysis in the field of electronic communications no. 556/2023.

87. Markets 3a and 3b in the ESA Recommendation correspond to markets 4 and 5 in the older ESA Recommendation from 2008. The markets, however, are not defined in precisely the same manner as before. Specific characteristics of each service are taken into account rather than limiting the market definitions to on the one hand passive infrastructure and on the other hand to active service. Further explanation of this new delineation will be covered later in Section 4.

88. According to Article 8 of the Regulation on implementation of market analysis no. 556/2023 and in ESA and the EU Commission Guidelines on market analysis and assessment of significant market power, the point of departure for all analyses should be assessment of the relevant retail markets with respect to demand-side and supply-side substitutability from the end user perspective, and account must be taken of expected developments in market circumstances over the planned duration of validity of the analysis. When the relevant retail market has been defined, with respect to the product types that belong to the market, an assessment shall be made of whether there is a risk of consumer interests being impaired as a result of lack of competition if no obligations were in place on the underlying wholesale markets. This is done later in Section 3. If this is the case, the underlying wholesale markets shall be defined, see Section 4 here below.[21] In section 5 there will then be further discussion on the relevant retail and wholesale markets with respect to geographic analysis and boundaries shall be drawn between areas where active competition is deemed to exist, which means that there will be no need for obligations at wholesale level, and those areas where

[20] See Article 10 of the Regulation on market analysis in the field of electronic communications no. 556/2023 and paragraph 35 on page 12 in ESA Guidelines on market analysis and the assessment of significant market power from 16 November 2022 (SMP Guidelines).
[21] Guidelines page 4.

there may be a need for obligations. In section 6, the status of competition will be investigated in individual geographical markets of the case.

89. ECOI can define other markets than those specified in the ESA Recommendation on relevant markets from 2016 and examine whether it is justified to impose obligations on these markets because of special circumstances in this country. In such cases there shall be consultation with ESA. When other markets are to be defined, they need to meet the same criteria as other markets in the Recommendation, which are:[22]

- that high and non-transitory and systemic access barriers, or access barriers in law and regulations exist;
- that the market does not tend towards active competition within the relevant time frame, having taken into account the status of competition in infrastructure and in other sources of competition, that underlie access barriers;
- that competition law on its own may not suffice to respond to those market failures that have been identified.

90. The above specified conditions are in the opinion of ESA, generally in place within the EEA on those service markets here being examined, see ESA Recommendation on the relevant markets from 2016.

91. With respect to the markets to be found in the ESA Recommendation on the relevant market from 2016 one should have in mind that a detailed analysis of the general nature of the relevant retail markets and related wholesale markets has already been conducted by the EU Commission as described in the explanatory note to the Commission Recommendation from 2014. One may therefore take as read that the markets listed in the Recommendation fulfil criteria that justify the application of obligations. It is unnecessary for ECOI to make a detailed assessment of whether the criteria are fulfilled, unless the Administration specifically considers there to be a need for this as a result of circumstances that differ from those that generally apply in the EEA.[23]

[22] See, for example paragraph 5 of Article 5 of the Regulation on the implementation of market analysis no. 556/2023.

[23] See Explanatory Note to the Recommendation, page 11.

3 Competition circumstances on retail markets for access to broadband service at a fixed location

3.1 In general

92. This section covers in detail the situation on the retail markets for broadband connections and service at a fixed location, whether this is the case of a fixed line or mobile network[24]. The service offer is examined from various aspects, distribution of varying network and technical solutions and development of demand during recent years. There will be discussion on both service for residential and for non-residential customers with respect to companies for which normal household connections suffice. With respect to high-quality connections for undertakings, this will be covered in a separate market analysis of market 4, pursuant to the ESA Recommendation on the relevant market from 2016, and this analysis is currently being made. Taking into account circumstances on the market, the relevant retail market will be defined and this definition will, as appropriate, become the basis for definition of the relevant service markets and geographic markets at wholesale level, if active competition exists on the relevant retail market or in a specific part of that market.[25] The conclusion of substitutability assessment on service markets need not on the other hand be the same at retail level and on the relevant wholesale markets 3a and 3b.

93. Internet service has become the electronic communications service of most importance for residential and non-residential customers, including for purposes such as working from home (including VPN), distance learning, distance medicine, computer games and to connect network connected domestic appliances. Digital media, news-reading and TV consumption has largely replaced print media, and in addition to this, live transmissions by aerial and communications between people and institutions and companies, and with family and friends, have migrated from traditional telephone calls or TV transmissions to a variety of possibilities which are mostly provided through some kind of web or service provided through the Internet. The situation now is that each household can connect to the Internet through a number of network connected devices, which can even be counted in their tens.

94. Larger undertakings on Internet service retail markets have directed a significant percentage of their marketing activities at packaged solutions or service bundles where all electronic communications services for the home are sold in one package, in many instances, including TV service. This is a “triple play” over a fixed line connection which contains: home telephony (often with VOIP technology), general Internet connection and access to TV

[24] Those mobile network solutions in question here are only those that relate to Wi-Fi routers, and such equipment normally needs to be connected to electricity, such that it has a fixed location for use, i.e. where it is located in each instance. This does therefore not relate to mobile phone solutions connected to mobile phones, network keys for laptops etc. or USB “dongles” or “fobs”, as such devices are by the nature ubiquitous and have less capacity and range than fully equipped routers and are intended to service mobile individuals and not whole apartments or families, and in addition require batteries that need recharging.

[25] Paragraph 3 of Article 2 of the regulation on the implementation of market analysis no. 556/202 says: *“If competition is considered to be active on the relevant retail market and/or a specific geographic part of that market, without obligations on a related wholesale market, obligations shall not be imposed on undertakings on that retail market, nor on related wholesale markets and nor should obligations that have already been imposed be maintained.”*

distribution systems (IPTV) with the rental of the relevant set-top box and included selection of TV material or other kind of visual content. In addition to such triple play bundles, such operators have also added a fourth service, mobile service, thus offering significant benefits to those who purchase all services from a single party. Internet service on the above specified bundles were previously first and foremost marketed through fixed line network connections, but for some time now, Nova has marketed mobile network solutions side-by-side with fixed line network solutions. Sýn followed suit and at the beginning of 2023 Siminn also began to offer such solutions.

3.1.1 Access to electronic communications networks, their use and distribution

95. Consumers and companies have for many years benefited from the country's fixed line electronic communication systems, both access and trunk line networks, which have had the capacity to deliver dedicated broadband connections. In recent times, this has increasingly also applied to mobile networks, particularly since mobile phone network undertakings in this country began to offer 4G and 4.5G and then 5G.

96. Around the turn of the last century the Siminn Group built ADSL service at a relatively fast rate across the whole country. Competition also developed at this level through local loop leasing with the provision of ADSL service from other parties who competed with the Siminn Group. In the same manner that distribution of ADSL developed rapidly by the Siminn Group, its VDSL service was also rapidly distributed during the period 2011-2015. ADSL range with good performance according to the standards of its time, about 12 Mb/s, was one kilometre from the central equipment hosted in telephone exchanges, but connections could be achieved with a cable length of up to eight kilometres, but then with impaired performance. VDSL range is significantly less, within 300 m with full 50 Mb/s performance and about 30 Mb/s when the cable length reached one kilometre. Then one can achieve up to 100 Mb/s performance with vectoring, which Mila utilised to a very significant degree. For this reason, equipment for VDSL service is located in street cabinets which are in turn connected to telephone exchange equipment by fibre. Mila has distributed its VDSL system to most urban nuclei in the countryside and rural municipalities have received grants from the Telecommunications Fund to deploy fibre to homes and companies.

97. Ljósleiðarinn (previously Gagnaveita Reykjavíkur) and Tengir have furthermore during the last 20 years or so, developed their fibre networks within their operational territories, as has Snerpa in the West Fjords and Austurljós in East Iceland during recent years. Then Eygló ehf. commenced fibre roll-out in the Western Islands at the beginning of 2023, a company owned by the municipality. In the past years, particularly after 2016, Mila expanded its own fibre network to residences and undertakings to the scale of tens of thousands where this distribution reached 120,000 residences and undertakings in this country at the end of 2022, that is to say to 70-80% of residences and undertakings, depending on which official statistics for the total number of residences and companies are used as a reference. The Ljósleiðarinn fibre network reaches a similar number of residences as the Mila fibre network but is limited to the south-west corner of the country, at least up to this point in time, while the Mila fibre network is distributed more widely across the country. It is clear that this proportion will increase significantly in the coming 5 years with Mila, based on the company's roll-out plans and there will also be some more, with Ljósleiðarinn and others. For more than a decade,

market access to powerful access networks over fixed line networks has therefore been substantial and good in this country at any given time.

98. The situation is now such that in the Capital City Area, in large parts of Akureyri and in a number of areas in Northeast Iceland (e.g. Húsavík, Dalvík, Ólafsfjörður) and in other larger urban nuclei such as Árborg, Akranes, Borgarnes, Reykjanesbær, Hveragerði, Hella, Hvolsvöllur, Sauðárkrókur, Ísafjörður and Egilsstaðir, households and companies have access to fibre, as have most rural areas. Fibre-optic roll-out has now commenced at full speed in the Westman Islands as mentioned above. In addition to this, Mila has commenced fibre roll-out in many of the country's villages that have only had copper connections, and Ljósleiðarinn has declared willingness to increase the undertaking's operational territory beyond Southwest Iceland, in connection with the undertaking having received access to the NATO fibre which encircles the country. Tengir has deployed an extensive fibre network in the north and east parts of the country and has plans for further development there. Snerpa has deployed a fibre system in the West Fjords and has further plans there, and Austurljós at Egilsstaðir has deployed a fibre network in that town. One could say that about 90% of the country's citizens now have access to fibre connections. Almost all other urban nuclei have access to VDSL, but one must consider it unclear as to when, and then on what basis (on market terms, or state-supported or a mixture of both) all of these urban areas will be covered by fibre and whether they will be covered with fibre fully or up to 80% which is the new prescribed government policy in electronic communications as discussed in section 1.2.3 here above.

99. This widely distributed access to dedicated broadband Internet service has led to the level of penetration of such service being among the highest in this country, and one can assume that most homes in this country are customers of some service provider that offers high-capacity Internet service, though such service can vary somewhat. In a news item on the Mila website dated 21 April 2023, it is stated that for the fourth year in a row Iceland was in top place among European countries when it came to the proportion of households with active fibre connections, i.e. 76.8%, according to a review by the FTTH Council Europe.

Figure 3.1 Active residential fibre connections in a number of European states 2022



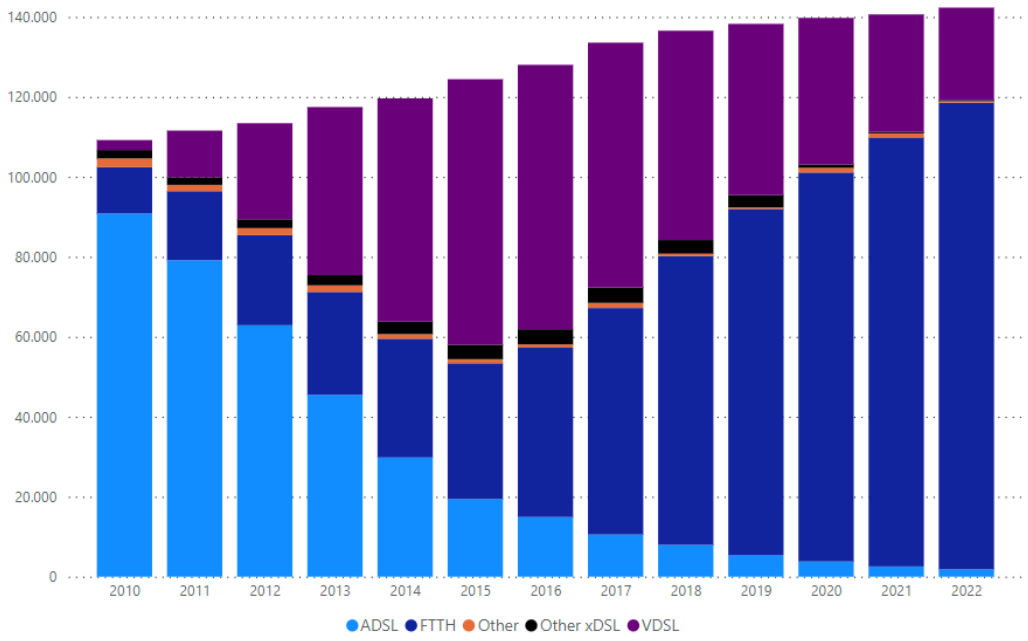
Heimild: FTTH Council Europe: „FTTH/B Market Panorama in Europe",

100. In the above specified news item, it states that this comparison shows how advanced Iceland is when it comes to access for residences and undertakings to high-capacity connections and to the level of success in fibre roll-out to residents in a sparsely populated country. Though fibre roll-out is working well, there is still some way to go before the whole country will be fibre connected. In the news item, it stated that Mila is making every effort to deploy fibre to the country's households. This is not least related to the fact that in the coming years, Mila's older copper system will be decommissioned. This means that Mila would have to invest more in 2023 than ever before in deployment of fibre to residences and undertakings, to the amount of ISK 5 billion in development of electronic communications infrastructure in 2023. Mila aims to invest for up to ISK 30 billion during the next 5 years.

101. As can be seen on the graph here below, there has been substantial annual growth in the number of customers in Internet service between 2014 and 2018, about 3-5 thousand each year. This growth has decelerated somewhat since and no longer keeps pace with the increase in population and homes. As will be discussed in further detail later in this document, it is likely that part of the explanation can be attributed to powerful mobile networks and that a certain proportion of citizens make do with such connections and decide not to have a fixed line connection.

102. It is worthy of note that the number of customers with dedicated fibre connection has grown quite rapidly since 2008 while the number with connections that use copper local loops is decreasing. The increase in the number of customers with a connection over fibre was about 14-16 thousand per annum for the years 2016 until 2020. Since 2020, this development has somewhat decelerated.

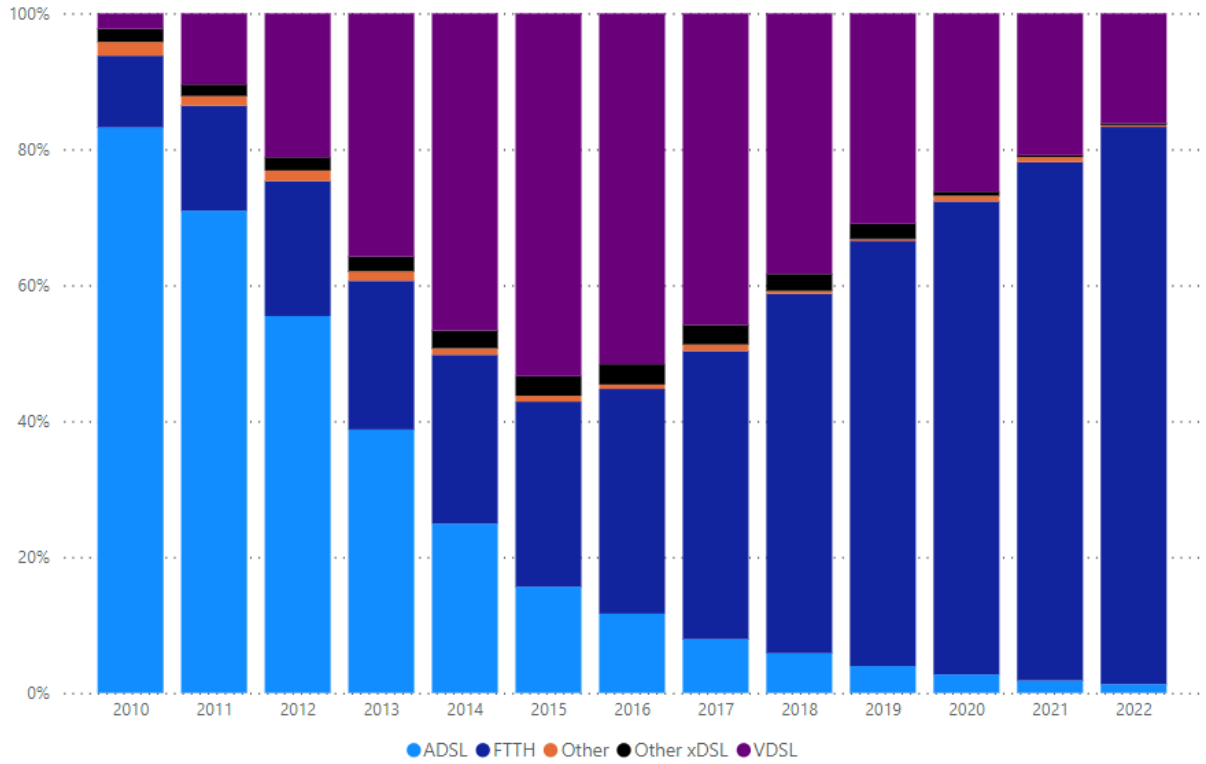
Figure 3.2 Number with dedicated Internet service over fixed line networks 2010-2022[26]



Source: ECOI

[26] In Icelandic the point "." is used as a thousand separator and the comma "," as a decimal separator, this applies to other figures in the analysis.

Figure 3.3 Proportion of technical solutions for dedicated Internet service 2010-2022



Source: ECOI

103. ADSL connections in use are now very few after Mila embarked on rapid distribution of VDSL solutions across the country during the years after 2011, which was mostly completed in 2015. This was succeeded with vigorous fibre deployment by Mila and other parties, which also had a significant impact. ADSL connections in use at the end of 2022 were just over 1,800 of 142,000 bitstream connections in use, which represents 1.3%. At the same time, bitstream connections over VDSL were about 23,000, i.e. 16% of bitstream connections in use and bitstream connections over fibre were about 117,000, which represents about 82%. It is clear that customers switched easily and rapidly from ADSL to VDSL. One can assume that the Internet service companies have also actively marketed connection upgrades to their own customers to prevent them from otherwise switching to another service provider. Migration from VDSL to fibre has taken much longer.

104. As previously stated, ADSL was offered for a considerable period of time with 12 Mb/s capacity download. VDSL entered the market with 50 Mb/s capacity, upgradable at many locations to 100 Mb/s with vectoring, and Mila has activated this technology for a large proportion of the company's VDSL connections. The Ljósleiðarinn fibre connections entered the market with 100 Mb/s capacity which was later upgraded in some areas to 400 and 500 Mb/s, and after 2015, Ljósleiðarinn embarked on a structured upgrading of connections for all of its customers to 1000 Mb/s i.e. 1 Gb/s. Mila also started offering fibre connections with 100 Mb/s downhaul and then 500 Mb/s. A few years ago, Mila started to offer 1 Gb/s in urban areas and offered only up to 500 Mb/s in rural areas. During recent times, Mila has upgraded its connections to 1 Gb/s at many locations. At the beginning of May 2023, Mila was still offering 500 Mb/s at 5 specified locations in the countryside, but the company intended that 1 Gb/s connections would be offered at all locations, no later than in the summer of 2023.

105. On 22 August 2023, at its Autumn meeting to which electronic communications companies and other stakeholders were invited, Mila presented the company's plans for upgrade of its G-PON bitstream service. This Mila service was a novelty in the market in this country, but Ljósleiðarinn soon matched Míla's offers. The upgrade constitutes the introduction of new active equipment that operates according to the XGS-PON standard, where X represents 10, G represents Giga as before, and S represents Symmetrical. Such XGS-PON equipment can operate side-by-side with existing G-PON equipment, with the use of other frequencies of optical signals, so that individual customers can upgrade their connections without this having an impact on other customers. According to the standard, it is technically possible for each customer to acquire a connection with up to 10 Gb/s symmetrical performance, i.e. equal upload and download.

106. It was stated at the meeting that Mila planned to immediately commence receiving pre-orders for customers connected to Mila fibre in the Capital City Area. The service commenced on 1 October 2023, and in such a manner that residences and companies connected to Múlastöð in Reykjavik could receive 10 Gb/s symmetrical performance from the start, while households outside the Múlastöð connection range could receive 2.5 Gb/s symmetrical performance which would be upgraded to 10 Gb/s in the winter 2023/2024, and such upgrades would be completed by 1 April 2024. Deployment of XGS-PON across the country is planned later, but this was not specified at the meeting.

107. Mila collects a fixed monthly additional charge to the amount of ISK 1250 ex VAT per month for each connection, which will be added to the charge that is otherwise connected for G-PON service connections. This charge is the wholesale price to Internet service parties that then sell their service to consumers. Internet service providers will still be able to connect individual customers to 2.5, 5 or 10 Gb/s symmetrical performance.

108. Mila installs new fibre endpoint equipment with the users that supports XGS-PON and the 10 Gb/s interface into the customer's local network and offer installation of in-house cabling of type CAT6 to three devices from the endpoint equipment.

109. In network technology, real performance to customers is never the same as the technical capacity defined for interfaces. Quite a volume of data is used in overheads for communications protocols. These data are controls and management of the content of the communications themselves. In this manner, full IP performance on 1 Gb/s interface is about 0.93 Gb/s and customer speed measurements will show this lower number, as it is these data that the customer receives as content of data packages. Mila states that real performance of 10 Gb/s XGS-PON is 9.6 Gb/s, which is slightly impaired by error correction and that it becomes 8.6 Gb/s having taken this into the equation. In-house cabling, the type of wireless solution being cast through the building, construction materials and buildings and indoor distances have a very large impact on the performance that each customer experiences on wireless networks, as do also the user's own computers and devices connected by Wi-Fi or by network cable.

110. The performance of the G-PON standard is 2.5 Gb/s download and 1.25 Gb/s upload which is divided over up to 128 users, in such a manner that each user can enjoy a maximum of 1 Gb/s symmetrical which should give 0.95 Gb/s real performance. ECOI has not received

a description of the performance of XGS-PON units, which describes the bandwidth that will be available for division between customers.

111. User equipment that supports 10 Gb/s interfaces is still extremely expensive and generally not on offer on the consumer market and can hardly be found in computer shops at this point in time. Interfaces with such performance are now offered in equipment intended for large companies with very large data transfer requirements on their internal networks. Information technology companies have offered such equipment on the corporate market, often through special orders. Network routers and switches that handle such performance cost many times more than the consumer products that electronic communications companies have leased to consumers in the past years. In the presentation, Mila offered electronic communications companies' routers for lease that they could then finally re-lease to consumers. This indicates that investment in equipment is something of an access barrier for the uptake of XGS-PON that Mila wishes to help people to surmount.

112. Wi-Fi solutions that can handle this performance are on the verge of becoming available. The most expensive Wi-Fi6 access points available in the shops now support 2.5 Gb/s interfaces for Internet service, but the interface on such equipment is generally only 1 Gb/s. Manufacturers have published technical information on new network routers that support the newest or seventh generation Wi-Fi networks (Wi-Fi7). In that information it is stated that 10 Gb/s interfaces will be available, but this equipment is hardly available for general sale. At the meeting, Mila introduced two types of network routers that electronic communications companies can lease, one from Nokia that supports 2.5 Gb/s interfaces and one from ZyXel that supports 10 Gb/s interfaces. Both these routers that Mila offers have Wi-Fi6 access points and not Wi-Fi7.

113. On 13 September 2023, Ljósleiðarinn issued a notification that stated that the company planned to offer 10 Gb/s upgrade on its fibre connections to homes and companies in all of its operational territory from and including 1 October 2023. The upgrade constitutes among other things, the changing of user fibre endpoint equipment and the laying of new CAT6 in-house cables to three devices. The Ljósleiðarinn upgrade will be on the company's P2P network topology. As is the case with other network connections, the speed of interfaces is not the same as what the user can use, and Ljósleiðarinn mentions in its notification that one can expect maximum data transfer capacity of up to 9.5 Gb/s to a user, but that there are many factors that can have an impact on speed measurement for each user. One can expect the same issues of uncertainty with respect to access and costs with regards to endpoint equipment and Wi-Fi networks for this upgrade, as were mentioned for the XGS-PON technology here above.

114. The purchase of dedicated Internet service entails additional cost in the form of line charge/access charge which is collected at retail level. The cost item collected by the retailer in question through these charges is partly to cover the wholesale cost of the access network through which the Internet service is provided. This arrangement seems to be a specifically Icelandic phenomenon, or it is at least not common in Europe. The charge in question is an unavoidable element for the customer in question to have an active fixed line connection, as things are organised in this country. A line charge was however for some considerable period of time not a part of the price that was advertised for general Internet service, as the line charge also opens access for the traditional home telephone (PSTN) and dedicated TV

distribution (IPTV), and for this reason not allocated solely to Internet service. Line charge is now generally included in the total price from retailers.

115. When Ljósleiðarinn commenced its services, the company collected what were called access charges directly from the homes that took out subscriptions with Internet retailers. The access charge in question can be equated to part of the wholesale price, including local loop leasing, which formed the final retail price of the service provided through the Siminn copper network. Retailers on the Ljósleiðarinn network could therefore price their service lower, to the equivalent of the access charge. The service provided over a fixed line network, whether it is copper or fibre, is varied and it is not possible to allocate all of the wholesale cost, particularly the local loop cost, to one service. Siminn therefore changed its charging and created a charge item called line charge in 2012 at the same time as the subscriptions for home telephones were restructured. In 2017, retailers of Ljósleiðarinn network connections began to collect the Ljósleiðarinn network line charge themselves from their customers. However,Tengir collects the access charge from end users for its own fibre.

116. For a considerable period of time in this country, three mobile network undertakings have operated their own mobile network, i.e., Siminn, Nova and Sýn. Siminn is the former incumbent monopolist in electronic communications in Iceland and began offering NMT mobile phone service in 1986[27] and GSM service (2G) in 1994. Sýn and its predecessors[28] have operated on the mobile phone market since competition in electronic communications was introduced in 1998. Nova then entered the mobile phone market in 2007 but did not provide fixed line service before 2016. At the beginning of 2021, Siminn transferred its mobile phone distribution system (RAN) to Mila, which means that after Siminn sold Mila at the end of September 2022, that system was no longer owned by Siminn. Siminn does however retain frequency licences and continues to operate a mobile phone core, unlike Mila. Since 2016, Nova and Sýn have jointly developed and operated their mobile phone distribution system in a separate joint operation undertaking i.e. Sendafélagið ehf.[29]

117. In March 2020, ECOI allocated frequency licences to the mobile network undertakings, for 5G service on the 3.6 GHz frequency range on a short-term basis, that is to say until the

[27] NMT service was decommissioned in 2010.

[28] Sýn, then Og Vodafone, was founded in 2003 with a merger with Halló! Frjáls fjarskipti hf., Íslandssími hf and the old Tal hf., Gamla Tal, had started to provide 2G mobile phone service in 1998.

[29] See PTA Decision no. 14/2014 and CA Decision no. 14/2015. This is what is called "RAN sharing" and "MOCN" technology where full sharing of equipment and frequency licences takes place. Both companies retained their own frequency licenses while Sendafélagið only operates technical equipment for its owners. Sendafélagið does not have access to core systems for wholesale, for example for a virtual network (MVNO) or for resale or for retail. This cooperation began formally in 2016. In July 2022, Nova and Sýn signed an agreement on cooperation between the companies on development and sharing of transmitters for 5G development. The agreement applies until the end of 2028 and prescribes development and sharing of 200 5G transmitters. The agreement is partly based on, and is in addition to, the above specified cooperation between the undertakings that started in 2016 and covered 2G, 3G and 4G service. Development of all transmitters shall be completed at the end of 2024, and each party is committed to allowing the counterparty to share those transmitters covered by the agreement, at least until the end of 2028. With the CA Decision no. 32/2021, CA endorsed the sale by Sýn and Nova of specific passive electronic communications infrastructure to a foreign party, i.e. Digital Bridge Group INC. Its Icelandic subsidiary is called Íslandsturnar ehf. More specifically, all of Sýn and Nova macro-tower sites were sold, i.e. passive infrastructure such as real estate, masts and other equipment that is not categorised as active equipment, such as for example transmitters and cables. Subsequent to this sale, Sýn and Nova made an agreement on leasing that equipment on a long-term basis.

end of 2021. The ECOI grounds for this were among other things, that in the light of the technical status of 5G technology, there was a need to develop it on top of the 4G technology currently in use. The reason why ECOI did not feel able to allocate these frequencies on a long-term basis was that the Administration was faced with uncertainty regarding the development of electronic communications legislation and of the arrangements for specific security measures to be taken by the authorities to ensure state security interests. The allocation allowed for the electronic communications undertakings being able to acquire the right for renewal of frequency licences for a longer period if 5G service was developed in accordance with certain defined ECOI criteria regarding efficient use. Nova and Siminn developed 5G networks in accordance with the ECOI criteria within the prescribed time limits and thus acquired the right to long term allocation. In the light of the fact that the above specified uncertainty factors were still unresolved on 31 December 2021, long term allocation was postponed. Frequency licences for the two undertakings were therefore renewed for a short period of time, i.e. until 31 March 2023.

118. In February 2022, ECOI received an application from Sýn for a new short-term allocation for 5G. It was stated that the undertaking had set itself a time limited development plan which allowed for substantial 5G development reaching into the second quarter of 2023. In March 2022, ECOI allocated the requested 5G frequency licensed to Sýn, until 31 March 2023. Sýn undertook to embark on wide-reaching development during the next 12 months, and it specifically prescribed development and deployment of service in certain urban nuclei in the countryside that neither had 5G service nor fibre. When this development was added to that which was already planned by the other mobile network undertakings, it was clear that in 2023, huge steps would be taken in citizens' access to the newest and most powerful mobile network service being offered.[30]

119. Siminn, Nova and Sýn had their frequency licences renewed for a term of 20 years on 21 March 2023. These were the frequencies on the 800, 900, 1800, 2100, 3600 MHz frequency ranges. In the frequency licences there were conditions set for the purpose of supporting high-capacity mobile network service being available for all citizens and so that on the country's arterial roads, the service would be uninterrupted, to the extent that was technically possible. Speed and distribution requirements will grow incrementally during the coming years, where the final minimum requirements are that at least 99% of residences and workplaces will have access to high-capacity service through mobile networks, and that at least 97% of them will have a minimum of 1 Gb/s speed. Facilities and service on the country's arterial roads and on specific highland roads shall be developed, such that at least 30 Mb/s can be achieved on all arterial roads within a few years and 150 Mb/s at the beginning of the next decade, should there be a need for such speed on the roads. In the highlands, allowance is made for 10 Mb/s speed on four specified roads. Licence holders are authorised to work together in development on arterial roads and in the highlands, but only in areas when the market is considered to have failed. When asked at the beginning of May in 2023, all of the three mobile phone companies stated that they intended to deploy 5G mobile networks

[30] In a news item on the Sýn web page dated 25 April 2022, it was stated that Sýn had during the previous weeks, invested very significant effort in improving the undertaking's 4G/5G distribution across the whole country. The system now reached 99% of the country's inhabitants.

quickly during the coming years in this country, both in the Capital City Area and in the countryside.

120. No pure mobile virtual network operator (MVNO) operates on the Icelandic mobile phone market and has not done so for many years, i.e. since IP-fjarskipti ehf. (TAL) was operating, an undertaking that merged with 365 miðlar hf. in 2015, which subsequently merged with Sýn in 2017. Hringdu is the largest purchaser of mobile network access at wholesale level in this country with less than 5% market share on the basis of number of subscribers in the retail market at the end of 2022, and this undertaking resells Siminn mobile phone service. Then there are other smaller parties, Hringiðan and Kapalvæðing who are resellers of the Nova mobile network system, and their market share can hardly be measured in mobile networks. For a period of time, Símafélagið ehf. resold Sýn mobile network service and Símafélagið merged with Nova in 2018.

121. In the PTA Decision no. 11/2012[31], the Administration came to the conclusion that purchasers' needs at wholesale level varied somewhat, which mainly depends on whether they owned their own systems and on the scope of the system. Despite this, the PTA did not consider it necessary to define the market by varying access services at wholesale level, as one can assume that substitute offers exist between them. Each mobile network operator that offers services for call origination to service providers through indirect access can, should the appropriate circumstances exist, relatively easily switch to providing access to virtual network undertakings (MVNO) and vice versa.[32]

122. At the end of 2022, Siminn had about 36% market share on the basis of the number of mobile phone subscribers, Nova about 33%, Sýn about 26% and others about 5%. Market shares had thus not changed much in the prior 2-3 years. When one considers the number of subscriptions for network service that only authorise data volume (i.e. not voice or SMS), the share was somewhat different, i.e. 35% for Sýn, 32% for Siminn, 31% for Nova and 3% for others. On the other hand, when one considers data volume, the picture is quite different.

[31] Market analysis for the wholesale market for access to call origination in public mobile phone networks (market 15/2004).

[32] On page 14 in Appendix A in the decision in question, it stated that virtual network access can be divided into a number of levels on the basis of the extent of access to electronic communications network infrastructure that is provided for wholesale. One could thus call the highest level "pure MVNO" where the technical implementation would be largely similar or the same as domestic roaming, except that the virtual network party would not operate any distribution system. Such a virtual network party could make its own agreements on roaming and interconnection. The second level of virtual network would be where the service provider operates its own service system which gives him increased possibilities to more effectively identify his services as being distinct from the "mother provider", such as having its own charging system and even its own voice mail boxes, SMS/MMS and various special services for further differentiation. Such a service party does not make agreements on roaming but can in some instances make agreements on interconnection. On-net termination of telephone calls, that become on-net calls with call origination, is included in access services that a virtual network undertaking purchases from the operator of a mobile network. Resale then provides the service provider with the possibility of reselling mobile phone services. He purchases either minutes or traffic capacity from the mobile phone operator at a discount, which gives him the possibility of generating income. In the case of pure resale under an independent trademark, the service provider does not have any independent mobile phone network infrastructure but sells services under its own independent trademark and purchases almost all support service at wholesale level.

Nova then had about 41% of used data volume, Siminn about 38% and Sýn about 14%, while others had 7%.

123. In addition to voice and SMS it is possible to use access to a mobile phone network to use other data transfer services based on a variety of different technical solutions. For some considerable time, mobile networks carried almost solely voice and SMS, but today the share of these two elements represents a negligible part of monthly data volume carried on mobile networks. It was not until the arrival of 3G (UMTS) around 2006, that a reasonable data transfer speed was achieved over mobile networks, by the standards of that time[33]. In 2013 and from about that time, the three mobile phone undertakings began to develop 4G (LTE) systems that offered much greater data transfer speed than 3G. Nova launched the first 4,5G (LTE Advanced Pro) transmitter in this country in October 2017, a technical solution that offers approximately three times the network speed of standard 4G technical solutions. The undertaking estimated that upgrading to 4.5G would take 3 years. Subsequent to this watershed event, Nova spokesmen declared that vastly increased use of networks, which would continue to increase year by year and which was among other things manifested by streaming of live material in high image quality, called for increased data transfer capacity of electronic communications networks[34].

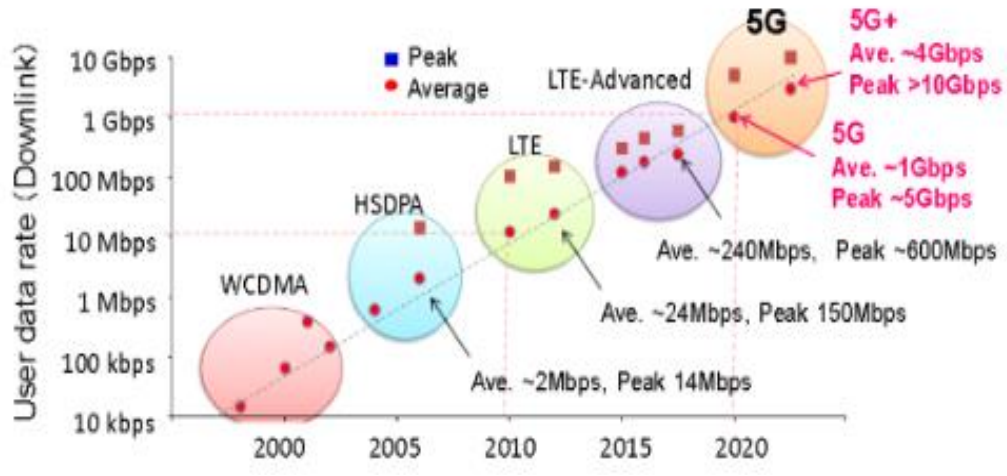
124. The development of mobile networks during the past 20-30 years is such that there has been an exponential or multiple increase in capacity with each generation of technology. Capacity and data transfer volume of high-capacity mobile networks have changed radically during recent years with distribution of 4G, 4.5G and 5G mobile networks. With 4G, the capacity of mobile networks was reasonable in optimal conditions, but for example, people felt that streaming of visual content was not at an acceptable speed and quality, compared with fixed line networks. The same can be said in a situation where many devices were being used at the same time in a household. With the advent of 4.5G, capacity tripled compared with 4G and was quite good in the best conditions and much better than in instances of traditional 4G systems, and streaming of visual content was for example much better than in 4G and it was possible to have many devices in use at the same time in a household with acceptable performance. One cannot call 4.5G a new technical generation in mobile networks, but rather it was an intermediate step towards 5G and was an upgrading of traditional 4G networks. The only difference between 4G and 4.5G is that 4G uses only one frequency band while 4.5G uses more than one frequency band, which significantly increases capacity. Capacity has become very good in the case of 5G, see figure 3.4 here below. This means that with each generation of mobile network, the general user is continuously

[33] In a news item from ECOI, dated 23 November 2022, the conclusion was made public that mobile phone undertakings were authorised to completely decommission 2G (GSM) and 3G (UMTS) mobile phone systems and that this should be completed no later than at the end of 2025. In other respects, timing of the decommissioning in question was in the hands of the companies. In mid-2022, about 76% of active mobile phone SIM cards were on 4G or 4.5G mobile networks, 12% on 5G, 7% on 3G and 6% on 2G.

[34] On 10 October 2017, Nova representatives declared on simon.is that 4.5G was a significantly upgraded edition of 4G connections which offered increased speed. 4G connection supported up to 150 Mb/s system speed, which was the highest possible speed, given optimal conditions. 4G+, which has been in use in this country, supported 250 Mb/s system speed while 4.5G supported up to 1000 Mb/s system speed. Nova considered that this would double real user speed which would be from 80-120 Mb/s in normal conditions.

experiencing a smaller difference between his access through mobile network or fixed line network.

Figure 3.4 Development of capacity of mobile networks



Source: "Future electronic communications product and service markets subject to ex-ante regulation", WIK Consult, 25 June 2020.

125. In February 2019, Nova was granted permission from ECOI for experiments with 5G and was the first mobile phone undertaking to commence actual 5G service in this country in May 2020. Siminn began providing 5G service in 2021 and Sýn in 2022. It was stated in a news item on mbl.is on 5 May 2020, which discusses Nova, 5G service, that speed and data transfer capacity with 5G was about ten times that of 4G systems. It was stated that Nova would increase 5G transmitters at a steady pace in the near future and that there were already various devices on the market that supported 5G and that soon, most devices and mobile phones would be able to use 5G. Then it was stated that Nova aimed at fast development of the 5G system, and PTA reckon that before the end of 2021, up to nine urban nuclei in the countryside and the Capital City Area, would have access to 5G service and the Administration's allocation of 5G frequencies was only until the end of 2021 where renewal would be contingent on the Administration's criteria having then been met. In a news item on Akureyri.net, dated 8 July 2021, it was stated that Nova had installed 5G transmitters at five locations in Akureyri. There it was stated that 5G had become common in all of the newest telephone devices and that Nova now offered 5G network routers for home networks. 5G would normally provide 150-200 Mb/s and regularly exceed speeds above 1,000 Mb/s.

126. In a news item in www.dv.is, dated 9 June 2023,[35] it was stated that Vodafone had activated 5G service on 100 transmitters around the country, which was part of the project "Ring Road 5G" which had begun in the autumn of 2020. 5G technology offers opportunities to achieve even greater speed and stability in network connections, both for residences and undertakings. Vodafone has also worked towards increasing the capacity of 4G transmitters. The undertaking will install up to 100 5G transmitters in addition during the next 18 months. When Nova and Siminn 5G transmitters are added, it is in the opinion of ECOI clear that

[35] https://www.dv.is/eyjan/2023/06/09/vodafone-virkjar-5g-thjonustu-100-sendum/.

development of 5G in this country has been extremely fast in the recent past and will continue to be so in the near future.

127. Today, telephone calls and SMS and other data transfer service through mobile phones is generally sold in one package. In the above specified PTA Decision no. 11/2012, the Administration came to the conclusion that the wholesale market also included mobile phone data transfer service. Competition conditions were the same, and these services were in most instances sold together. Data transfer service through mobile phone networks is however not always sold as part of a standard mobile phone subscription with voice and SMS. It is possible to buy a special subscription that only covers data transfer through a mobile phone network, and in those instances, the user's client side equipment is a network stick, network router or something of that nature, and not a mobile phone.[36] In the above specified decision it was stated that the PTA considered that such service did not constitute substitute service to mobile phone service, except to a very small degree. Nor was this service part of the package that was usually sold with mobile phone subscriptions. This service was intended to compete with xDSL and to service those areas that did not have high-capacity connections. The PTA therefore considered it appropriate to separate that part of data transfer traffic in mobile phone networks that was sold particularly through data transfer subscriptions and that did not go through a traditional telephone handsets.

128. Subscriptions and tariffs of the undertakings that formally differentiated between data subscriptions and subscriptions with voice, SMS and data service, are now priced more or less the same, as it is the included data volume that decides pricing. The price of mobile network service has also dropped in recent years, and data volume over mobile networks has throughout the years been significantly more expensive than corresponding data volume over a fixed line. The situation now is that pricing is very similar or even a little lower in mobile networks than fixed networks when subscriptions with unlimited data volume are compared and the line charge is added to the fixed network subscriptions.

129. Fixed networks and mobile networks both offer ways to connect to the Internet and it is usability of the service and price that matters most to the consumer. During recent years there have been significant changes with those who use electronic communications service. Very rapid development in recent years in information and software technology have revolutionised the pattern of usage of individuals and undertakings of telecommunications services. This information systems and technology now enable users to access and disseminate information and data, independent of endpoint equipment (e.g. laptop, desktop computer, tablet and smartphone) location[37]. The above specified changes in usage patterns

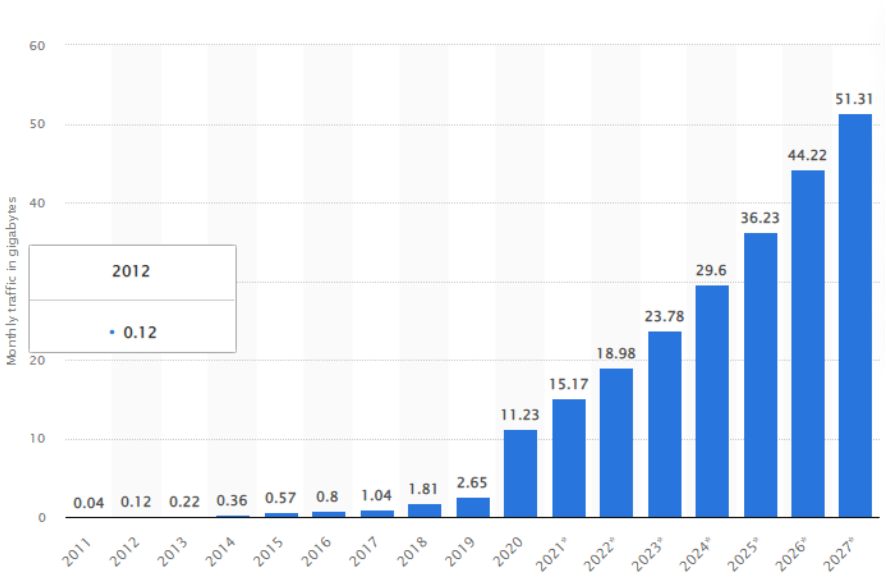
[36] At the end of 2022, the total number of mobile phone subscriptions in this country was just under 522,000, of which almost 65,000 were solely data transfer subscriptions. According to a special tally of user equipment connected to the systems of the mobile network undertakings made at the end of April 2023, these undertakings reckon that of these data subscriptions there are about 5,387 users with 5G routers and 23,227 users with 4G or 4.5G routers. Siminn and Nova say they cannot make a distinction between 4.5G and 4G as 4.5G is not a separate generation but rather an upgrade of the performance capacity of 4G.

[37] This has often been called “uses across devices”, indicating that the user has access to service or is using software independent of the type of end devices he is using. An example of this is an employee of an undertaking who is using Microsoft Teams at work, where he participates in a project, shares data and documents and is a participant in chat threads in the software, along with his colleagues. The user can work in a desktop computer at the workplace, continue to work on project documents and data in a mobile phone, participate in discussions

constitute a change in nature of functionality and interaction of underlying electronic communications systems that enable the above specified usage that is location and device independent. Users may even make no distinction between whether they are using a fixed line network or mobile network. The requirement is completely seamless use of service or software, regardless of endpoint device and underlying electronic communications network. One could even say that users of mobile network devices are hardly any longer aware of whether they are connected to a mobile network, even when at home or in the vicinity of a Wi-Fi connected fixed line network.

130. Because of increased data transfer capacity of mobile networks, practical usage, leisure and entertainment value of service that is accessed through the Internet have taken a huge step forward. This has revolutionised all kinds of dissemination of material, mass media, events, TV and almost all forms of streaming, from the way things were before. In addition to this, many domestic devices already have Internet connectivity, such as security systems, etc., and there is a huge increase in use of cloud services. Remote working in meetings have also increased greatly, subsequent to COVID-19. Users generally have little interest in the electronic communications technology that disseminates service to users, as long as the technology in question disseminates material and service with the quality and volume they require.

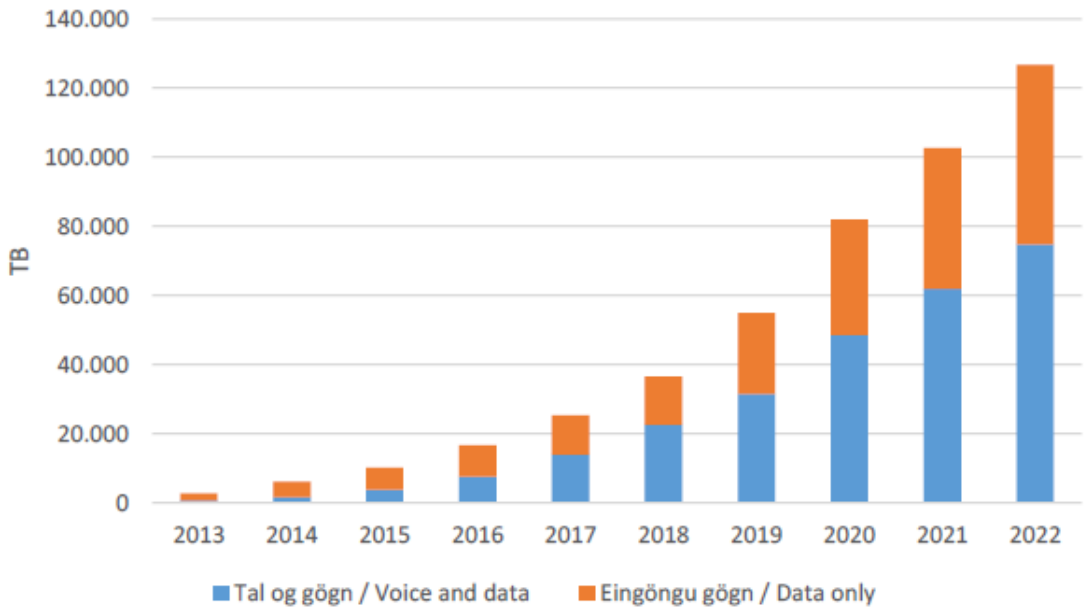
Figure 3.5 Data volume (GB) per smart phone on mobile networks per month in Europe 2011-2023 and projection to 2027



Source: https://www.statista.com/statistics/1133863/western-europe-monthly-data-traffic-per-smartphone/.

in real time and continue to work on documents and the project in a laptop at his home, which is updated in real time between colleagues, regardless of location or endpoint device that each participant is using. Despite passing through three different endpoint devices and through fixed and mobile networks, there is optimal continuity in the employees' work, without change in functionality or impairment of service.

Figure 3.6 Data volume in mobile networks in Iceland for the period 2013-2022 in terabytes per annum



Source: ECOI

131. Though the characteristics of Internet service over fixed line networks on the one hand and mobile networks on the other are in many ways comparable and can fulfil the same needs of a significantly large group of users, the service is not however completely comparable, as the technical characteristics are up to this point in time to some extent different. Acceptable performance in mobile networks is for example dependent on the number of concurrent users through the mobile phone transmitters in question, while access to a fixed line network is almost always guaranteed. When there are too many concurrent users of a mobile network, an acceptable connection to the Internet is therefore not guaranteed under such circumstances. In worst-case scenarios, users may not gain access to the mobile phone transmitter in question because of overload, but this is rare. Speed over mobile networks is decided by the number of concurrent users of the relevant mobile phone transmitter, and the users' usage pattern is also a factor. The greater the use and/or number of concurrent users, the lower the speed. The same applies to interference in the relevant frequency band. Speed over fixed line networks is however more stable and it is possible to promise a specific speed. VLAN are also on offer over fixed line networks, but not over mobile networks, which means that over fixed line networks it is possible to guarantee for example, the quality of TV, telephone calls, etc. As the situation is today, many service providers that provide Internet service over mobile networks can therefore not guarantee quality, traffic control or specific maximum or minimum performance. The main difference is therefore that in the case of mobile networks, many users can be sharing a specific performance capacity through a specific mobile phone transmitter, while the fixed line user in question has sole access to the capacity of the copper or fibre connection to his home, at least in the case of P2P fibre topology. PON topology actually constitutes a kind of sharing of performance capacity with more than one party, but there is considerable development in such systems, which will

greatly increase the performance capacity and will lead to the general user being unaware of the sharing in question.

132. In April 2023, ECOI sent a query to the three mobile phone undertakings on the one hand, about average download speed and on the other hand, about maximum possible download speed of mobile network connections under optimum conditions in the cases of 4G, 4.5G and 5G. It seems that the undertakings are not offering the same speed on 4G or that the quality of the information they have varies, but the undertakings reckon that the average download speed to devices in 4G is in the range of 15-50 Mb/s. Siminn and Vodafone say however that this is only 15-30 Mb/s. It was stated among other things that the average throughput depended to a large extent on the configuration of transmitters (number of frequencies) and/or load where bandwidth is shared. Only Nova could provide information on average download speed to devices in 4.5G, which is said to be 150 Mb/s. In 5G, the average download speed is said to be 100-300 Mb/s. It is worth noting that none of the undertakings yet offer 5G stand-alone, i.e. 5G cores on 5G transmitters, but they estimate that this could be a reality in the years 2024-2025. This will doubtless increase 5G speed even more.

133. With the coming of 4G and 4.5G and then 5G, it seems that mobile network solutions have in some instances become an option for households for Internet service. One can at least see indications that a certain proportion of homes only use mobile network solutions to acquire a dedicated broadband Internet service, or that people use such wireless solutions where no fixed line network solution is offered, for example in unapproved premises. There could also be some examples of younger people who are starting their own homes who let a mobile solution suffice rather than buy a fixed line connection[38]. Given the conclusions of the consumer survey commissioned by ECOI in the autumn of 2022, and information from electronic communications undertakings, this proportion could have reached about 11% of homes. According to figures that ECOI has gathered, it seems that this proportion was slightly higher and that it is not unlikely that the proportion will increase somewhat in the coming years as 5G deployment progresses and mobile network connections become more powerful. As can be seen from figure 3.2 here above, the bitstream connections over fixed line networks have increased slightly since 2019 and much less than during the years prior to that, and much less than the increase in population and in households would suggest. This indicates that mobile network connections are beginning to meet demand from a significant group of consumers, which could indicate substitutability at retail level between fixed line network solutions and mobile network solutions through routers. However, during the lifetime of this analysis, ECOI expects that a large majority of homes and undertakings will continue to have fixed line network connections.

[38] On page 4 in letter of reply from Mila, dated 2 May 2023 to a query from ECOI dated 14 April 2023, the undertaking considers that service over 4G/4.5G/5G routers in this country could be considered the equivalent of FWA service. On page 5, Mila states that there are many indications that FWA has limited substitutability for fixed line network connections or could possibly be considered additional service that only meets limited and/or temporary consumer needs, as for example in use in summer house areas or for tourists, itinerant workers and young people who are making their first home.

3.1.2 Supply, price and market share on related retail markets

134. The retail market that the relevant wholesale markets 3a and 3b serve are first and foremost retail of Internet access and related services provided over bitstream, i.e. distribution of television services over IP (IPTV) and IP telephony (VoIP). In the following subsections there will be discussion on the status on the relevant retail markets, among other things development of market share of the main undertakings, pricing policy et al. and an assessment will be made of possible developments during the lifetime of the analysis.

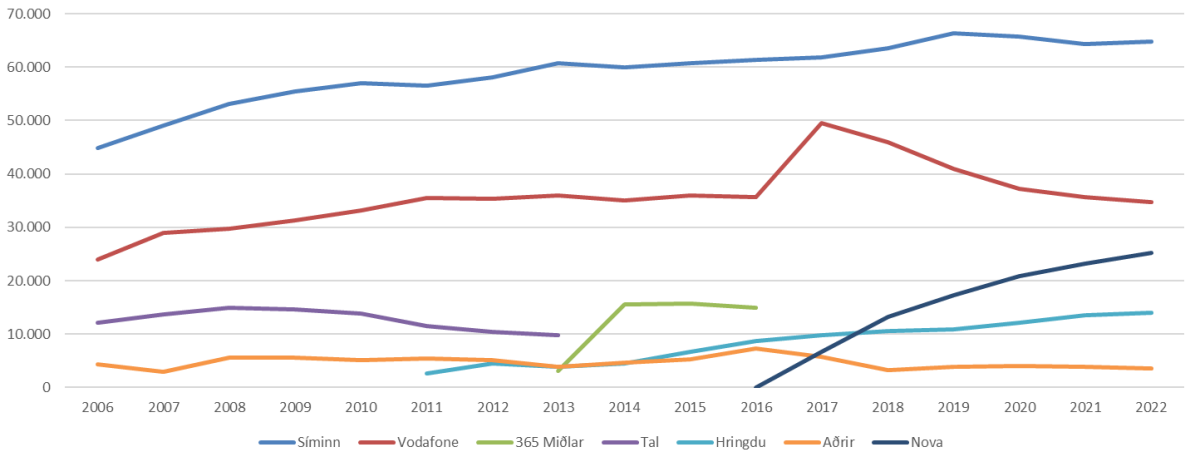
3.1.2.1 Market share in fixed line networks on the retail market

135. This section deals with market share of retail undertakings at a national level at the end of 2022, based on the number of connections in a fixed line network. Later there will be discussion on market share when connections through 5G, and as appropriate 4 and 4.5G mobile networks connected through routers are added.

136. Market share of the undertakings vary significantly by geographic area. For example, the Siminn market share is generally somewhat above the average national level of competitors in the countryside, but considerably lower than the country average in the Capital City Area. By simplifying to some extent, one could say that the opposite applies to Sýn, Nova and Hringdu. There will be further discussion on market share by municipality at retail level in section 5 here below.

137. Siminn is the largest undertaking on the retail market for Internet service market with over 65,000 customers and almost 46% share of Internet service over fixed lines at the end of 2022. The number of customers of the undertaking has remained fairly stable in recent years. The undertaking's share has decreased slightly from about 52.7% at the end of 2006 to 45.5% at the end of 2022, which is about 7.2% percentage points over a period of 17 years which is just over 0.4% per annum.

Figure 3.7 Number of customers, technically agnostic, at year end 2022



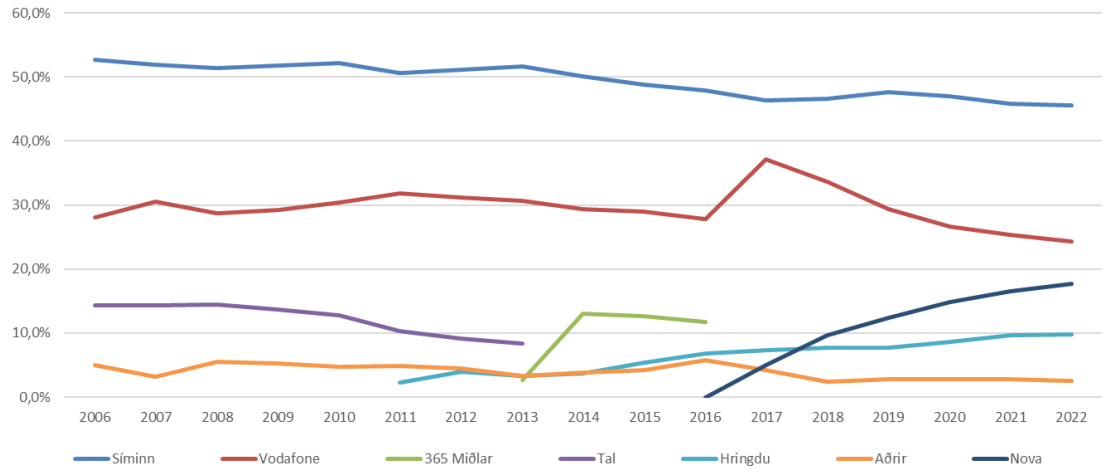
Source: ECOI

138. Sýn (Vodafone) has had the second highest market share during the same years. At the end of 2017, the undertaking's purchase of 365 Miðlar broadcasting was completed, and its market share spiked accordingly and had reached 37% at the end of 2017. It is interesting to

note that the undertaking was not able to retain this gain, and market share decreased by 2.7 percentage points in the year 2018, by 4.2% in 2019 and stood at 24% at the end of 2022.

139. Nova, which for many years operated solely on the mobile phone market, has grown rapidly in fixed line network connections since the undertaking begun operating on that market, particularly in the years 2016-2020. In fixed line connections the undertaking first and foremost offers Internet service over the Ljósleiðarinn fibre network but does however offer some services over xDSL (DSL other than ADSL or VDSL) and over the Mila GPON network, first and foremost with specialised solutions for the corporate market. The undertaking is not however [...][39] which means that it is not out of the question that the undertaking will turn increasingly to Mila for purchase of wholesale service on markets 3a or 3b, after Mila was no longer owned by the competitor, Siminn. The undertaking's share was 18% in 2022.

Figure 3.8 market share, technically agnostic, at year end 2022



Source: ECOI

140. Hringdu, which began operations in 2011, has grown slowly and steadily with the undertaking having reached 10% market share, at year end 2022. During recent years, Hringdu purchased its wholesale products from Siminn, both in fixed line and mobile networks. After the agreement between Siminn and Hringdu for Internet service over fixed line network expires [...]. Hringdu also purchases bitstream connections from Ljósleiðarinn.

141. A number of smaller undertakings operate on the Internet service retail market, but their share is very small, a total of 2.6% at end of 2022. The share of smaller undertakings has declined in recent years, which for a long time had been relatively stable at just under 5%.

142. The retail market for Internet service, if one only considers fixed line networks, is therefore characterised by large companies, Siminn and Vodafone, which offer packaged solutions or product bundles where television service is the main selling point of the bundles in question. In recent times, Siminn has held its ground quite well, and that is despite the powerful entry of Nova, while Vodafone has been losing significant market share. Nova bundles its Internet service and mobile phone service and specifically advertises that separate

[39] Removed for reasons of confidentiality. The same applies to text in square brackets from here on.

IPTV distribution of TV service is not necessary and that various OTT (over-the-top) solutions suffice, as the undertaking does not have such IPTV service in its product offer, as Siminn and Vodafone do. Nova offers an OTT solution called NovaTV in smart devices and through AppleTV sets.

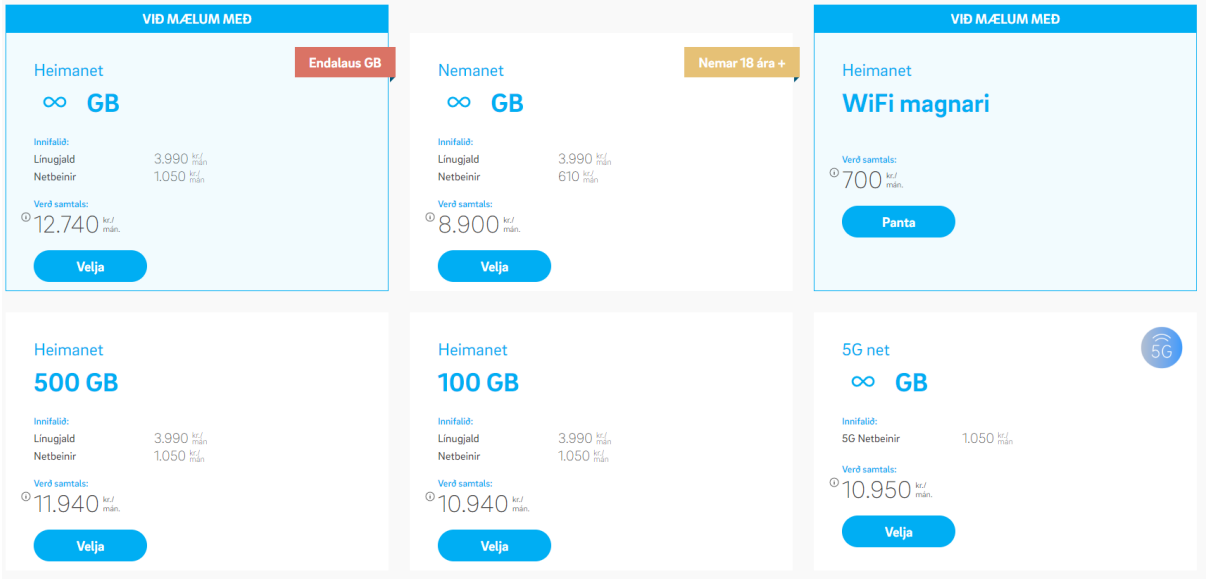
143. With wholesale access to bitstream service from the infrastructure undertakings, first and foremost Mila, Ljósleiðarinn, Tengir and Snerpa, Internet service suppliers at retail level could gain access to all fixed line connections of households and undertakings that bitstream service reaches. There one can particularly mention Access Option 3 with Mila, where Mila bitstream service reaches all VDSL and GPON connected homes and undertakings, which jointly have what is effectively national coverage. Through its long history of operations, Siminn has been the electronic communications undertaking in this country that has offered what is virtually service with national coverage, and Vodafone has customers in almost all municipalities in the country. Nova and Hringdu offer first and foremost, service in the Capital City Area and widely in Southwest Iceland, and also in larger urban nuclei in the countryside. A number of local service providers offer service first and foremost in their local territory, such as Snerpa in the West Fjords, Kapalvæðing in Reykjanesbær and Tölvun in the Westman Islands. As stated previously, the undertakings have wholesale access to all households connected to each other's bitstream networks. It must be considered likely that Nova and even Hringdu will, during the lifetime of this analysis, increase their service level in the countryside.

3.1.2.2 Síminn

144. Siminn offers its Internet service independent of speed of connection or access network, i.e. whether the connection is received through VDSL, Míla GPON connections or Ljósleiðarinn fibre network[40] or through a mobile network. Pricing has long been by included monthly data volume for customer use, since dedicated connections replaced dial-up modem connections. The reason for this is that one of the main cost items in Internet service in this country is data volume rather than the connection's bandwidth. This particularly applied to volume of foreign data during the years at the turn-of-the-century, when connections by submarine cable and data connections with the international Internet were particularly expensive. It was the practice to separately measure data volume brought from abroad, but in recent years, all data volume is measured, both upload and download, within the country and abroad. It is now much more common to offer the option of unlimited data volume and customers have increasingly moved to such an option in recent times. For some time, Siminn has offered this on a fixed line networks and in the beginning of 2023 began to advertise such 5G subscriptions, particularly as an option for household Internet service.

[40] Síminn did not offer service over the Ljósleiðarinn network for some time. Siminn and Ljósleiðarinn did however make an agreement on Siminn access to the Ljósleiðarinn network in July 2020. The aim was for Siminn service to be accessible on Ljósleiðarinn fibre early in 2021, but this was not activated until 25 August 2021. Tengir has also made approaches for Siminn providing service through the Tengir bitstream system, but an agreement has not yet been reached. On the other hand, Siminn provides service to the Mila bitstream system in the Tengir operational territory, over the Tengir fibre network, and Mila leases dark fibre on the Tengir fibre local loops.

Figure 3.9 Siminn offer of Internet service to households



Source: Screen shot from: "https:// https://www.siminn.is/internet" 5.05.2023.

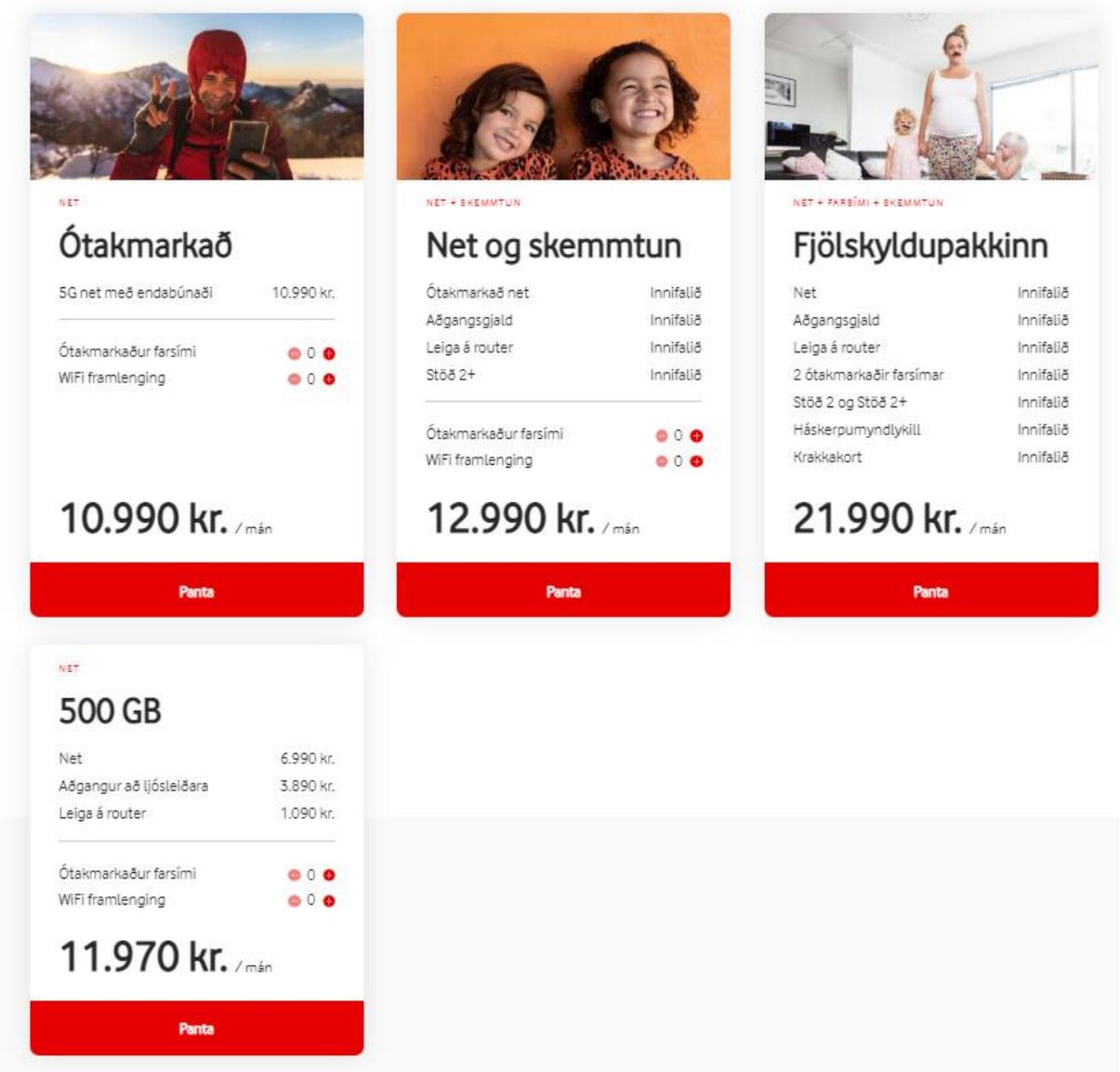
145. Figure 3.9 shows a screen shot from the Siminn web page taken on 5 May 2023, which lists service options and prices for Siminn Internet service. As can be seen, the price for the Internet service itself is dependent on the data volume that may be used each month, while the line charge and rental of network router are a fixed amount. About 3 years ago, Siminn begun to advertise an inclusive price for Internet service, with router and line charge combined. The Siminn price for Internet service without line charge and router is thus ISK 5,900 for 100 GB, ISK 6,900 for 500 GB and ISK 7,700 for unlimited data volume. During the last 2-3 years prices for data and unlimited data have converged, making the latter an increasingly advantageous and more popular option.

3.1.2.3 Vodafone/Syn

146. Vodafone also applies the policy in pricing of its Internet service such that the price is independent of the capacity of the access network and instead is based on included data volume per month. There, as with Siminn, unlimited data is the most expensive, but not much more expensive than 500 GB over a fixed line network, and in addition to this, TV content is included in the subscription with unlimited data. The price for the Internet service itself is not dissimilar from the Siminn price. Vodafone's access charge (line charge) is however ISK 100 higher than that of Siminn and the cost of renting a router is ISK 40 higher. For some time now, Vodafone has offered subscription with unlimited data with endpoint equipment over 4G and 5G mobile networks.

147. Figure 3.10 here below shows a screen shot from the Vodafone web page taken on 5 May 2023, which lists service options and prices for Vodafone Internet service. Lease of a router at ISK 1,090 is only shown on the bottom graphic for the 500 GB service option, and this also applies to the line charge to the amount of ISK 3,890.

Figure 3.10 Vodafone offer of Internet service to households



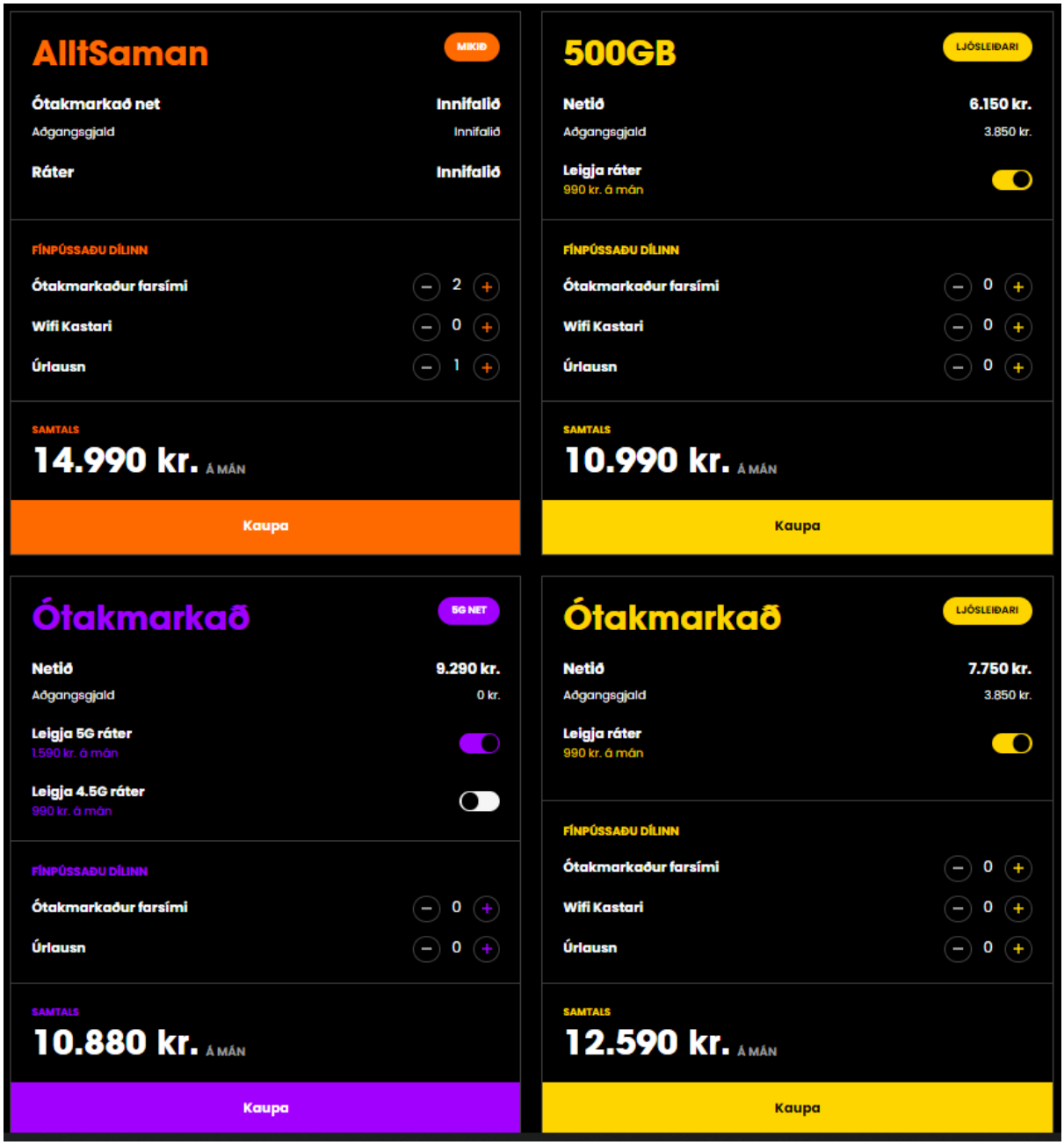
Source: Screen shot from: "https://vodafone.is/adstod/verdskra/internet/internet/" 5 May 2023.

3.1.2.4 Nova

148. The same applies to Nova pricing as to that of Siminn and Vodafone, that the price depends on included data volume. Now the prices are similar to those of Siminn and Vodafone, but they are a little lower than Siminn's for comparable data volume. Nova's line charge and router rental are similar to those of Siminn and Vodafone. Where there is no connection with Ljósleiðarinn fibre, Nova offers its 4G/4.5G and 5G mobile phone service through a Wi-Fi router for Internet connections for the household. Nova has not provided service over Mila fibre, but the company has used the Mila xDSL system to some extent on the corporate market. It is not out of the question that Nova will begin to offer Internet connections through the Mila fibre network as the undertaking is no longer owned by Siminn, which is in competition with Nova, as [...]. Nova commenced marketing of household connections over 4G, 4.5G and 5G mobile networks as a substitute for fixed line connections a number of years ago and sometime before Siminn and Sýn.

149. Figure 3.11 here below shows a screen shot from the Nova web page taken 5 May 2023, which lists service options and prices for Nova Internet service.

Figure 3.11 Nova offer of Internet service to households



Source: Screenshot from: "https://www.nova.is/netid/ljosleidari" 05 May 2023.

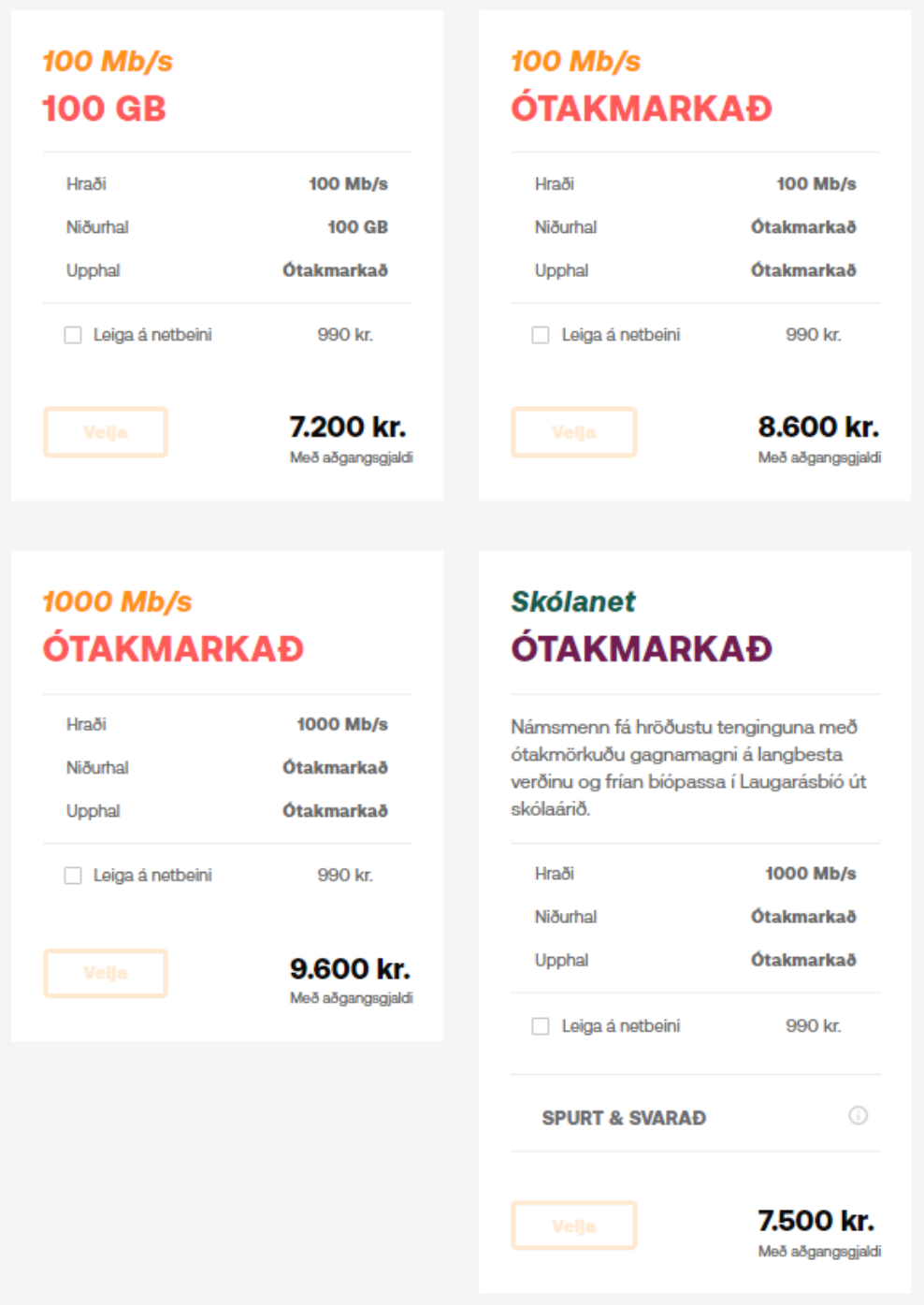
3.1.2.5 Hringdu

150. Hringdu is the smallest of the four undertakings that have market share over 5%, with about 10% share at the end of 2022. The undertaking takes another approach and differentiates itself from the other three by having varying price depending on the capacity of the connection. Connections with lower speed, 100 Mb/s, are the least expensive on offer.

Unlike Nova, Siminn and Vodafone, Hringdu does not market a mobile network as substitute service for fixed line network, but rather as a “travel network”.

151. Figure 3.12 here below shows a screen shot from the Hringdu web page taken 5 May 2023, which lists service options and prices for Hringdu Internet service.

Figure 3.12 Hringdu offer of Internet service to households



Source: Screen shot from: “https://www.hringdu.is/internet” 5 May 2023.

152. One could consider that the Hringdu pricing policy is characteristic of a maverick, that is to say a company that tries to distinguish itself from the larger companies on the market by breaking the mould and going against the norm.

3.1.2.6 In general, on prices, price development and pricing policy

153. One can consider Internet service to be in essence a kind of raw product. Each undertaking has adequate technical quality, so customers can hardly make any distinction in this respect. This has applied for a considerable period of time with respect to Internet service over a fixed line network (VDSL and fibre), but also increasingly in recent times with respect to Internet service over mobile network, first with the advent of 4G and then particularly after 4.5G was launched and even more after the advent of 5G. User surveys commissioned by ECOI in October 2020 and in April 2022, show that customers are generally satisfied with the quality of their fixed line connections, whether they are over VDSL or fibre, while 15% of respondents were not satisfied. Consumers also have limited awareness of performance as only 16% of respondents said they did. Pricing on the retail market does not indicate that any of the undertakings consider that they can vary pricing for Internet service, depending on whether it is provided over VDSL or fibre on the grounds of benefits segmentation and of higher prices for better quality. If one were to draw such a conclusion, then it would mainly be Siminn that thinks it can charge a slightly higher price and that competitors should charge a lower price or include other services. The price difference is, however, insignificant.

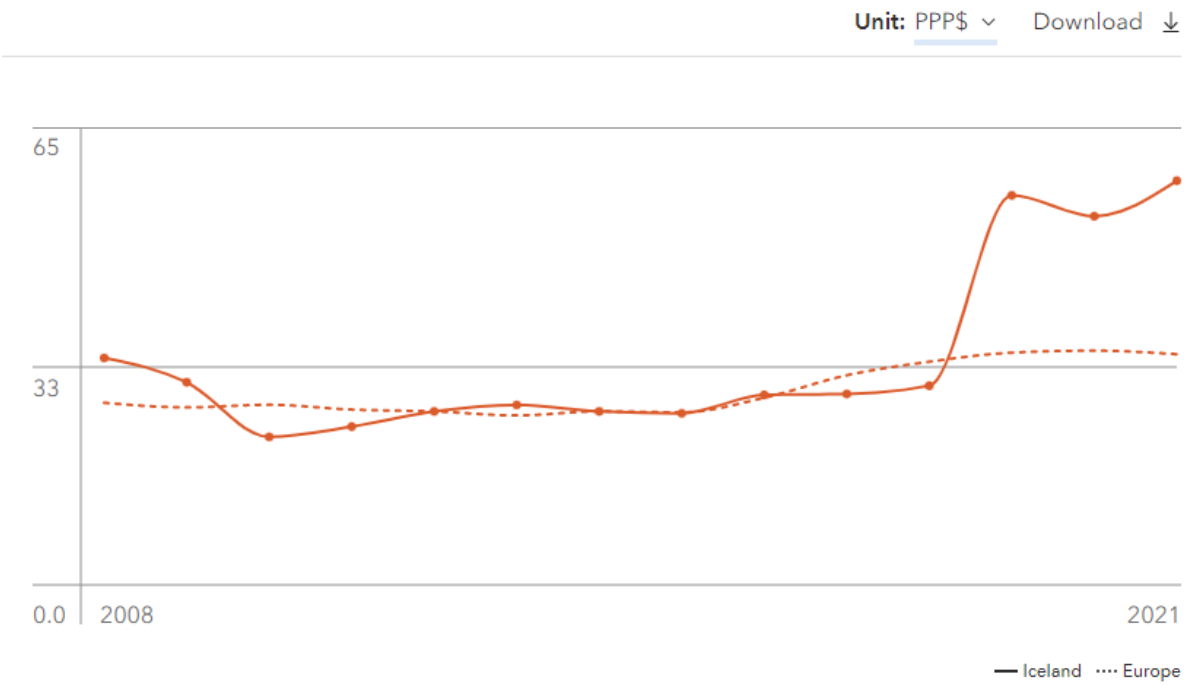
154. In a consumer survey commissioned by ECOI in November 2022, it was stated that about 11% of respondents said that they only had a mobile network connection in their homes. In the opinion of ECOI, this indicates that a chain of substitution could exist between fixed line network solutions over VDSL and fibre on the one hand 4G 4.5G and 5G mobile network solutions over routers on the other. The price for Internet service over mobile networks was for many years, not competitive with the price for such service over a fixed line network. During past months and somewhat before then, price for such mobile network solutions has been dropping and the situation now is that they are comparable or even a little lower on mobile network connections where the difference constitutes a significant part of the line charge, as wholesale cost is not paid for local loop lease in mobile networks that those providing service over fixed line networks need to recoup in the form of line charge.

155. In the above specified consumer survey, one of the questions was whether mobile networks could be an option for electronic communications connection for a household's Internet service. When asked whether an electronic communications connection with a mobile phone solution could replace a fixed line household connection, 55% in 5G urban areas answered the question in the affirmative. In other geographic areas, 44% answered in the affirmative and the proportion of total respondents answering this question in the affirmative was 53%. The questionnaire showed that just under 11% of users had 5G or 4G as the household electronic communications connection through which Internet service was received and it was interesting to see that this conclusion varied very significantly by geographic area. For example, 5G or 4G accounted for 23% of household connections for Internet service in East Iceland. These conclusions give an indication that a mobile network over 5G and even 4G or 4.5G, could provide substitutability for a fixed line connection in the opinion of consumers, in line with further reasoning presented here later.

156. Competition on the retail market is on the other hand continuously moving more and more over to bundles, where Internet service is one component of the offer. A discount from "list price" in the case of bundles is one feature in making it attractive and can lead to list prices for Internet service being higher than they might have been otherwise. There will be further discussion on bundling in Section 3.1.2.8-3.1.2.13 here later. Bundles with for example, TV service are not on offer in the case of Internet over mobile networks.

157. The price of a basket of various electronic communications services for homes and undertakings in this country has generally compared well in international comparisons in later years. On the other hand, the ITU price comparison which ECOI has taken into account in recent years has not shown that retail price for Internet service is particularly low in this country. In 2016, the conclusion with respect to Internet service with 1 GB data volume, when one considers purchasing power (PPP$) and including tax, was that Iceland was in 22nd place of 44 European states. From 2017 the reference has been 5GB included data volume, and Iceland was in 16th position that year, in 15th position in 2018 and then in 41st position in 2019, which was when ITU began to include the line charge as part of the price of Internet service. Iceland is thus one of the most expensive countries in Europe for 5 GB Internet service on the basis of the criteria used in the ITU price survey in this comparison. In 2020, Iceland was in 40th position and in 39th position in 2021 of 46 countries covered by the ITU comparison, but not all countries provide data every year. One must however note that ITU data collection is made at a world level where dedicated bandwidth Internet service is defined such that it includes 5 GB data volume and has at least 256 Kb/s performance. Prices for subscriptions are collected from those retailers that have the largest market share. The retail service offered in Iceland includes considerably more data volume and has many times the performance capacity. Europe is varied in terms of types of networks and their distribution, also with respect to pricing and purchasing power. The countries are thus not entirely comparable, and one must take this into account when interpreting these numbers.

Figure 3.13 Comparison of purchasing power adjusted prices of Internet services in Iceland the average in Europe



Source https://datahub.itu.int/.

158. ECOI considers it normal to include the line charge when considering the price of Internet service over a fixed line network, as it is unavoidable to pay the line charge in order to receive such service. The line charge is not specifically separated in many states and comparison between countries therefore does not give a true picture if the line charge is excluded in the benchmarking. ECOI requested information on line charges from its sister institutions in the Nordic countries, and the conclusion in this collection of information was that line charges were hardly known in the Nordic countries. This was mainly practised in a number of countryside networks in Sweden, but the charge seems to be on the way out among them. The main rule in these countries appears to be that the costs incurred for local loop lease is collected directly through the retail charge for each service. ECOI therefore considers that the ITU survey, as was last conducted, provides indications that competition is not exerting downward pressure on the price of Internet service in retail in this country.

159. One could note that the retail undertakings certainly do not collect a line charge for Internet service over mobile networks. When one considers this, then the electronic communications undertakings' prices at retail level are similar in the case of Internet service over mobile networks and over fixed line networks, including the line charge, or that the price for Internet service over mobile network has become a little lower. At Nova it is for example possible to purchase unlimited mobile network with a mobile network router at ISK 10,880, while a 500 GB fibre with line charge costs ISK 10,990. It is somewhat more expensive to purchase unlimited data volume over fibre with a line charge at ISK 12,590. This is very similar with both Vodafone and Siminn.

3.1.2.7 Company share by varying access technology in a fixed line network

160. Dedicated connections with xDSL technology were the first connections of this nature on the market, first ADSL and then VDSL. Throughout the years, Siminn has been the most active on this market shelf and did not offer its Internet service over a fibre bitstream system of the largest competitor to Mila, i.e. Ljósleiðarinn, until 25 August 2021, see agreement between Siminn and Ljósleiðarinn dated 1 July 2020. At the end of 2022, Siminn leased [...][41] connections from Ljósleiðarinn, against [...][42] copper and fibre connections on Mila systems at the same time. By the same token, Mila itself is the only party that offers xDSL service in wholesale.

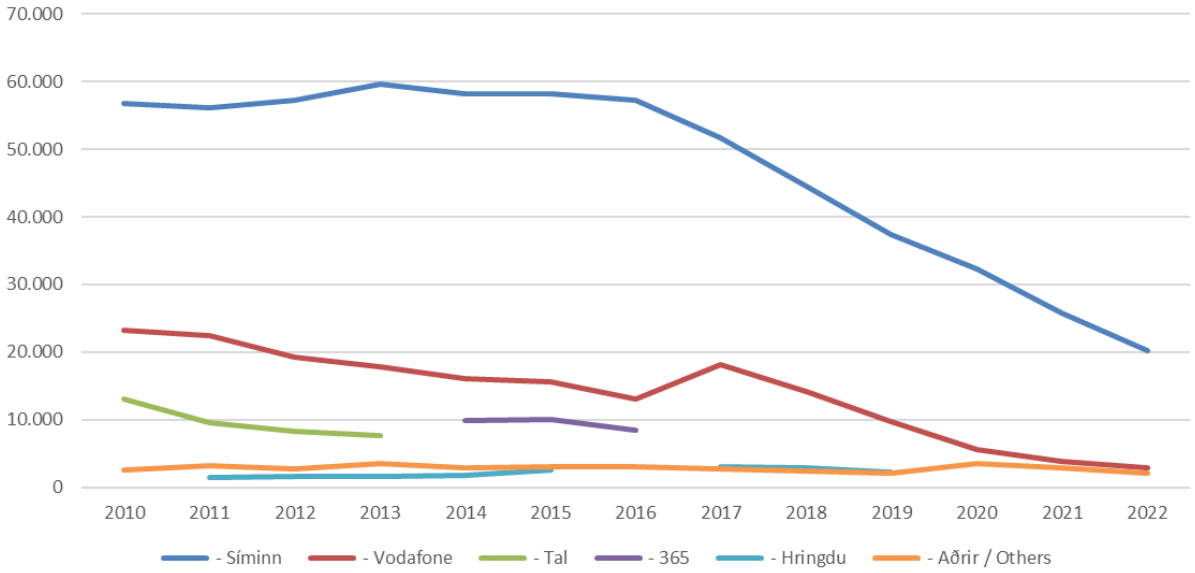
161. Vodafone operated its own ADSL system for some considerable period of time, which had diminished year by year, and was finally decommissioned in 2022. A few years ago, Vodafone made a decision to concentrate rather on selling Internet connections through the Ljósleiðarinn network fibre system and Access Option 1 with Mila, which is bitstream access, rather than leasing local loops. Vodafone has pointed out that the reason for this is that there had not been space in Mila street cabinets when the Siminn Group began VDSL roll-out in earnest in 2011, which was mainly completed in 2015. Vodafone has therefore been forced to and over to mostly bitstream access instead of local loop access. Nevertheless, Vodafone operated bitstream equipment on a number of local networks owned by municipality until late September 2023, when the 94equipment formally moved to Ljósleiðarinn, and also sells Internet connections over the Mila GPON and network to a significant degree.

162. During the last 7-8 years, after Mila commenced development of its fibre network in the Capital City Area in 2016, it seems that Siminn conducted a deliberate sales and marketing campaign to offer its customers a switch to the Group's fibre network. One can see in figure 3.14 that the Siminn xDSL connections decline significantly from the year 2016, while at the same time, the number of Siminn fibre connections rise sharply, see figure 3.15 here below.

163. In figure 3.14 it can be seen that there was a considerable increase in the number of Vodafone xDSL connections in 2017, which can be attributed to Vodafone's purchase of 365 Miðlar. It is interesting to note that Vodafone did not seem to retain 365 Miðlar customers who were connected through xDSL as can be seen in figure which shows a reduction in Vodafone xDSL connections in 2018 which continues in the years 2019-2022. Nor does it seem that Vodafone succeeded in migrating these customers over to the Ljósleiðarinn fibre network, as figure 3.8 here above shows a decrease in Vodafone Internet connections from 2017 and throughout 2022 (technically agnostic). In this connection it should be remembered that 365 Miðlar resold Siminn IPTV service on those connections and this may possibly have been a factor.

[41] According to Ljósleiðarinn data.
[42] According to Míla data.

Figure 3.14 Number of xDSL connections from 2010-2022



Source: ECOI

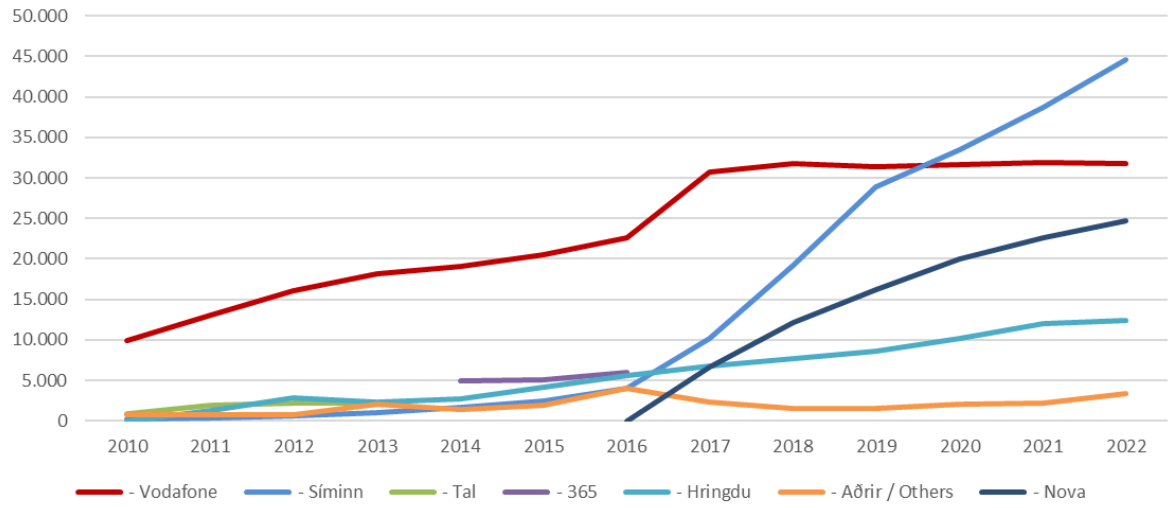
164. Since the launch of the Ljósleiðarinn fibre network, Vodafone has directed a significant part of its sales and market effort at connections over that network. This is evidenced in the undertaking´s percentage statistics for the number of Internet connections through fibre as can be seen in figure 3.15 here below, where the number of Vodafone fibre connections has been almost static since 2017, despite a significant increase in fibre during this period. Vodafone has however increasingly used connections in the Mila fibre network, but the majority of the undertaking's connections are nevertheless still on the Ljósleiðarinn network, i.e. over [...]% on the Ljósleiðarinn network and [...]% with Mila. On 20 December 2022, Sýn and Ljósleiðarinn signed a purchase agreement for the Ljósleiðarinn purchase of the Sýn trunk line network for ISK 3 billion and a long-term service agreement between the undertakings, for a term of 12 years on Sýn wholesale access and service over the Ljósleiðarinn trunk and access network, and also for service for Internet connections to foreign countries. It is among other things prescribed that Vodafone purchase at least [...]% of its bitstream connections through Ljósleiðarinn fibre. The purchase was endorsed by the Competition Authority on 29 September 2023.

165. At the end of 2022, Vodafone had [...]% share of Mila VDSL connections and [...] share of the undertaking's GPON connections. On the connections where a retailer's Internet service is received through Mila, the customers of this Internet service provider can choose to receive Siminn IPTV service, as is e.g. common with customers of smaller operators who do not have their own IPTV service to offer. The same applies to customers of Vodafone Internet service provided through the Mila system, as they can choose to have Siminn IPTV service through the connection.

166. As can be seen in figure 3.15 here below, Nova has made rapid progress in increasing fibre connections since the undertaking began to offer these connections in 2016 and had more than 21% market share in fibre local loops at the end of 2022 and about 18% market share if all retail, including over copper/xDSL is included, where Nova does not sell xDSL connections on the residential market.

167. It is worthy of note that Siminn is the undertaking that shows the fastest growth in number of fibre connections since 2016. Growth was substantial from 2016 until 2019, about 30% per annum during those years, and significant from 2019 until the end of 2022, between 15% and 18% per annum. Since beginning of year 2020, Siminn has had the highest share in fibre connections and at the end of 2022 there was a significant difference between the shares of Siminn and Vodafone, which is the next largest party on a hypothetical fibre market. Of the retailers of Internet service, Siminn has the greatest growth in the period in question on the fixed line market, which is showing greatest growth, i.e. fibre connections.

Figure 3.15 Number of fibre connections from 2010-2022



Source: ECOI.

3.1.2.8 Bundles in retail Internet service

168. There is a long-standing practice among electronic communications companies to offer their products in special offer packages, where a variety of services is offered in a bundle at one price, and often at discount terms when compared to purchasing each product separately. The importance of such packages has increased considerably in recent years, as is the case elsewhere in Europe.

3.1.2.9 Siminn bundles

169. After Síminn merged fully with the SkjáEinn TV station and migrated subscriptions to linear TV station to a non-linear content provider under the trademark "Sjónvarp Símans Premium" (Siminn Premium TV) (hereafter abbreviated to SSP), the company marketed a bundle in October 2015 under the trade name "Heimilispakkinn" (Home Package) (hereafter Heimilispakkinn) where three electronic communication services, i.e. home telephone, Internet service and IPTV were sold at one price with the media content provider SSP also included. In the summer of 2019, English football was then added to the Heimilispakkinn and Siminn has the transmission rights to this popular TV material until at least the summer of 2025. The media content provider was the main product in marketing Heimilispakkinn and was the focus of its advertising. In addition to this, Siminn commenced the offer of what is called "times 10" a few years ago through Heimilispakkinn, where up to 6 members of the

household of the subscriber got 10 times the data volume over mobile phone that was purchased with the relevant mobile phone subscription with Siminn. Siminn appears to have stopped offering the bonus in question in April 2023, and mobile phone subscriptions with unlimited data in bundles have replaced this. The very large number of Siminn customers in Heimilispakkinn that had taken the x10 offer, appeared however to have retained this benefit if they did not change their subscriptions.

170. With the PTA Decision no. 10/2018, dated 3 July 2018, the Administration came to the conclusion that Siminn had breached the prohibition provision of paragraph 5 of Article 45 of the Media Act no. 38/2011, which prohibits a content provider from directing its customers' business to a related electronic communications company. On 1 October 2015, Siminn discontinued distribution of Siminn non-linear visual content through the Vodafone system. From that time and until August 2018, such service was not available to Vodafone customers, as was the case at that time. Those consumers who chose to purchase access to the Siminn non-linear visual content (SSP) therefore needed to have a set-top box from Siminn and to access the content through the Siminn IPTV system. Subscription to the content was therefore only on offer through the Siminn TV distribution system and also only through the electronic communications network of Mila, a former subsidiary of Siminn, and e.g. not through the Ljósleiðarinn electronic communications network. The tens of thousands of users that used the Ljósleiðarinn network's fibre local loops as a carrying layer and who were customers of Vodafone, Hringdu, Nova and of other companies, could therefore during the period of time in question, not access this content distribution.

171. In the decision in question, it was stated that in comments to the bill which became the above referenced Media Act, it was stated that the provision was intended to enable consumers to choose both visual content and an electronic communications company, without binding themselves to one specific company, by preventing a company which controlled both visual content and electronic communications networks from abusing its position. The objective was furthermore to break up vertical ownership of material and distribution as there could be an incentive for individual media service providers to try to direct their customers to a related electronic communications company. The provision was included in the Media Act for a specific reason, among other things because of the strong position of IPTV distribution in this country where most households used such technology to access visual content, and both Siminn and Vodafone operate such TV distribution. It was the ECOI conclusion that the customers of electronic communication companies other than Siminn, had from 1 October 2015 faced the reality that their access to the visual content in question was limited in such a manner that they could not access it without switching electronic communications company or connecting to more than one electronic communications network.

172. Siminn appealed the above specified PTA Decision no. 10/2018 to the courts. With a judgement of the District Court of Reykjavik from 1 July 2020, the court confirmed the PTA conclusion on the Siminn infringement of the paragraph 5, Article 45 of the Media Act in question to a certain extent, but nevertheless on amended grounds. With a judgement of the National Court dated 24 June 2022, the court confirmed the PTA decision from 2018 in all respects. Siminn appealed this conclusion to the Supreme Court which, with its judgement dated 31 May 2023, rescinded the judgements of both the District Court and the National Court, and referred the case back to the District Court for new proceedings because of

shortcomings in case procedure at both court levels. The judgement of the District Court dated 1 February 2024, the District Court confirmed the ECOI decision materially and declared an ISK 9 million fine void for reason of a lack of clarity for authority to fine. The judgement was not appealed. The above ECOI decision from 2018 is therefore still in force, materially, with the exception of the fine.

173. In August 2018 Siminn introduced the OTT solution, i.e. a TV distribution system through the Internet (streaming service) which the company claimed was independent of electronic communications networks. Vodafone, Ljósleiðarinn and Nova considered that despite this solution, Síminn's infringement was still active. With the PTA Decision no. 27/2019, dated last 25 November 2019, the Administration came to the conclusion that Siminn had repeated its prior infringement until 1 October 2019. By making a specific set-top box that was sold by the electronic communications part of Siminn a condition for the OTT solution, the media service part of Siminn continued to direct the business of its customers to a related communications company.

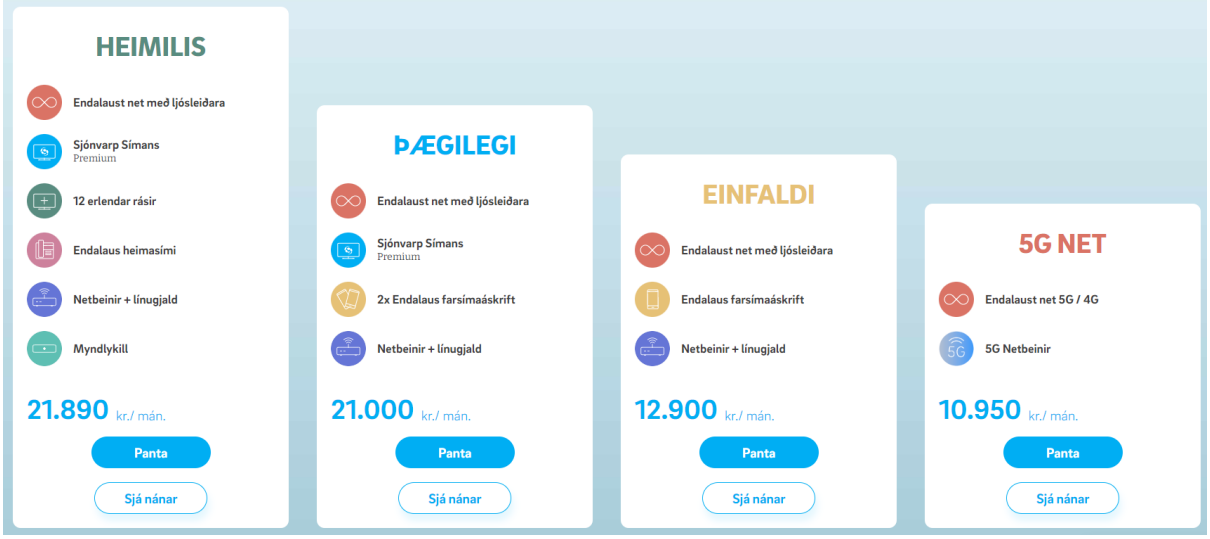
174. Siminn appealed the above specified PTA decision to the Appellate Committee for Electronic Communications and Postal Affairs no. 7/2019, and with its ruling dated 6 November 2020, the Committee rescinded the above specified PTA decision, as the Committee considered that there had been a lack of investigation and arguments on specific factors on the part of the PTA. ECOI and Vodafone have now appealed the ruling in question of the Appellate Committee to the courts and the case is still being processed by the District Court.

175. According to the above, the duration of the Siminn infringement of the provisions of the Media Act spanned almost 3 years. During that period the number of subscribers to the Siminn Heimilispakkinn increased dramatically and as previously stated, Siminn began offering Heimilispakkinn in 2015. At the end of 2022, Siminn had 64,778 Internet subscriptions and of them [...] included Heimilispakkinn, which represents [...]%.

176. As previously stated, Siminn began offering Sjónvarp Símans Premium and English football through an OTT solution, i.e. "Siminn TV - network neutral" from August 2018. The service has been subject to the condition that one must lease a specific set-top box from Siminn to be able to use the TV service in question. For some time, there was very little uptake of this network neutral service. According to the newest figures as of end of year 2020, there were [...] Siminn customers using this solution while 56,824 were using the Siminn IPTV solution. ECOI does not have new figures on the number of customers in the solution in question but believes that the proportion of OTT solutions in the total number in IPTV has not changed significantly. It is therefore clear that the proportion of those using the OTT solution has been low relative to those who use the IPTV solution. As previously stated, Siminn made an agreement with Ljósleiðarinn for access to that undertaking's bitstream service in July 2020 and started providing service over the Ljósleiðarinn network in August 2021. In 2022, Siminn then began to offer its TV material through a web app, and now the Siminn OTT solution is no longer dependent on using a set-top box from that company. The Siminn app is now accessible through a computer, tablet, telephone, Apple TV and android TV, and also through certain types of TV. The number of people in this country that use an IPTV solution has been on the decline in recent years and at the end of 2022, Siminn IPTV subscriptions were down to end of year 48,182, having peaked at 57,900 at the end of 2019.

177. In April 2023, Siminn announced new bundles where two new bundles are now on offer. As stated above, the offer of tenfold data volume has been discontinued as a bonus with the Heimilispakkinn in mobile phone subscriptions other than the triple play (Þrenna). Instead of this, Siminn offers its customers that have an Internet connection over fibre, a mobile phone subscription with unlimited data volume at ISK 3,000 per month, instead of the tariff price of ISK 9,900[43]. A new package, Comfort Package (Þægilegi pakkinn), includes two such mobile phone subscriptions with unlimited data volume, but without a home telephone, monthly charge for set-top box lease and 12 foreign TV channels that are part of Heimilispakkinn. "The Simple Package" contains Internet service with unlimited data volume and one mobile phone subscription, also with unlimited data volume. The price for Internet service on its own is ISK 12,740 and a mobile phone subscription can be included for an additional ISK 160. Siminn also offers unlimited 4G/5G network and network router at ISK 10,950. Figure 3.16 shows a screen shot of Siminn homepage from 5 May 2023 where the packages are described.

Figure 3.16 Siminn presentation of content of the "packages".



Source: Screen shot from: "https://www.siminn.is/iheimilispakkinn" 05/05/2023.

3.1.2.10 Vodafone family package

178. Vodafone offers the Family Package (Fjölskyldupakkinn) for ISK 21,990 per month. Figure 3.17 shows a screen shot of Vodafone homepage from 5 May 2023 where the package is described. The bundle contains TV subscriptions to Stöð 2 linear TV and the Stöð2+ content provider, to mobile phone subscriptions with unlimited data volume, as many Krakkakort (mobile phone subscriptions for children with limited data volume) as necessary, unlimited Internet, router, set-top box and configuration of equipment and also access charge for the

[43] There are no limits to the number of mobile phone subscriptions that a household can get on these terms, except that the party paying for the mobile phone subscriptions is the same as the one paying for the Internet service.

operator of the electronic communications network. It is possible to add more TV subscriptions to the package with the appropriate increased charge.

Figure 3.17 Vodafone presentation of "Fjölskyldupakkinn"

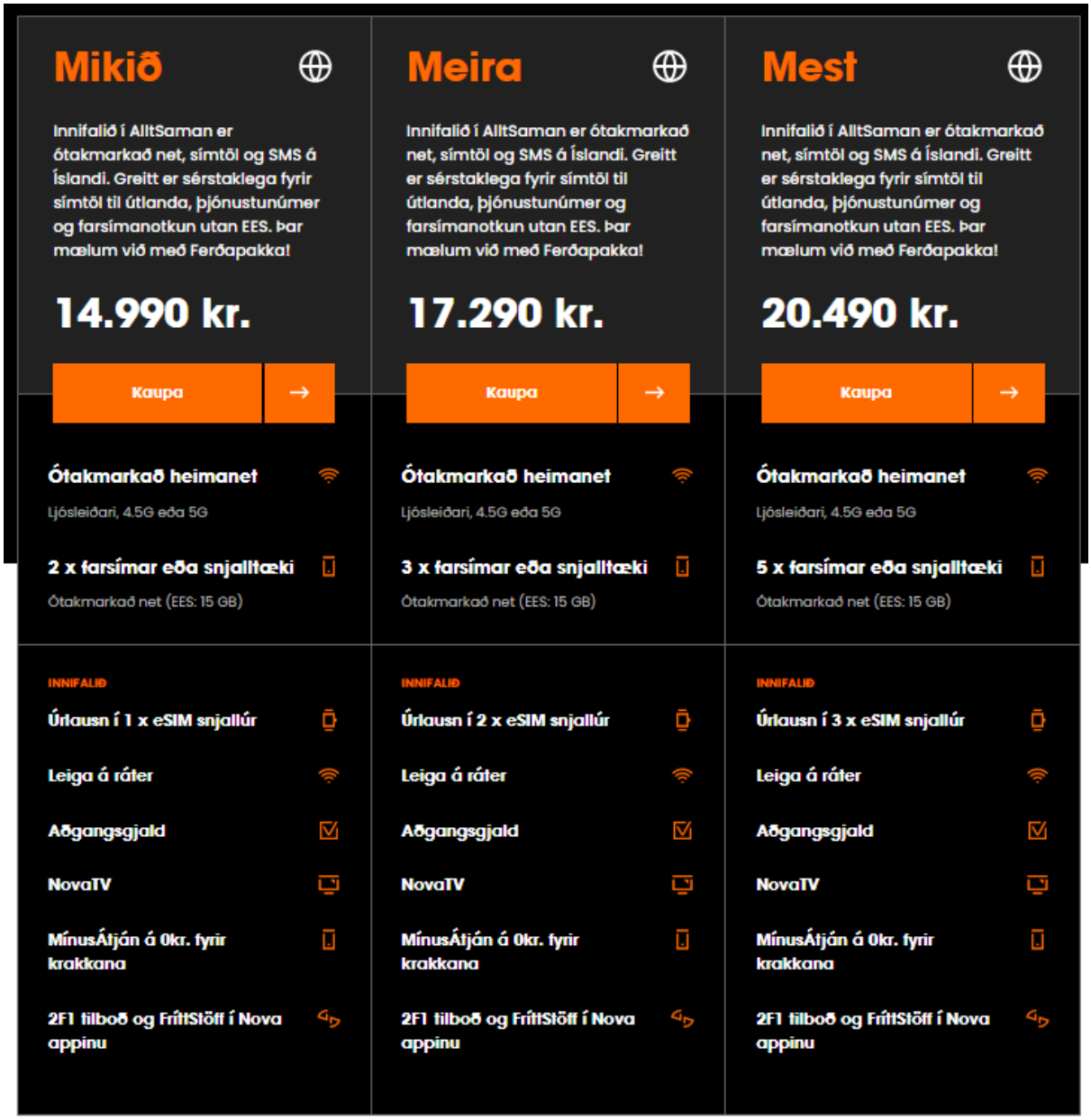


Source: Screen shot from: "https://vodafone.is/fjolskyldupakkinn" 5 May 2023.

3.1.2.11 "AlltSaman" from Nova

179. Nova offers the packages, Much (Mikið), More (Meira) and Most (Mest) under the umbrella name Altogether (AlltSaman), which includes fibre Internet connection or mobile phone solution over 4.5G or 5G with unlimited data volume, also with 2, 3 or 5 mobile phone subscriptions with unlimited data volume and 1, 2 or 3 connections for smart watches. The price of the packages from ISK 14,990-ISK 20,490, depending on the number of smart devices. Access charge of the mobile phone network operator and Internet router are included in this price. Nova neither operates TV service, nor is a content provider, like Siminn and Vodafone, but instead it operates the NovaTV app which is free for Nova customers. One can view a number of TV stations through the app, both Icelandic and foreign, free or for a fee. NovaTV can be used in the computer, tablet, telephone, Apple TV and Android TV.

Figure 3.18 Nova presentation of 'AlltSaman'



Source: Screenshot of "https://www.nova.is/alltsaman" on 5.5.2023.

3.1.2.12 Hringdu

180. Hringdu does not offer a special offer package in the form of discount terms on one service if another is purchased. On the company's website there is an offer to assemble an inclusive package according to customer needs, but there is no discount on the list price for each service.

3.1.2.13 Other small companies

181. Some of the smaller companies offer package solutions with a combination of Internet service and other service which is then often sourced from larger companies. Hringiðan as an

example of this, as it offers mobile phone sourced in wholesale from a mobile phone company, in a package with its own Internet service, that the undertaking provides over the Ljósleiðarinn or Mila network.

3.1.3 Internet service and Iceland in international context

182. Icelanders' Internet usage is among the highest known in international comparison, which has been the case for many years. Icelanders' Internet usage has been such that over 95% of inhabitants have used it since 2012, and where today the proportion is just over 99%.[44]

183. Distribution of high-capacity networks has been very high in this country in recent years and almost 99%[45] of the country's households had access to Internet service with performance of up to 30 Mb/s or more through fixed line networks of just under 93% of homes and 72% of undertakings, which is 89% of spaces, had access to a fibre connection (FTTH), according to information from the electronic communications undertakings at the end of 2022.[46] Furthermore, the distribution of 4G and later 4.5G mobile network service has been significant in recent years, as has also been the case with 5G distribution in the most recent period. The three mobile phone companies have ambitious plans for further 5G distribution in the coming years, both in the Capital City Area and also at many locations in the countryside.

184. Iceland is also in top position in the FTTH Council Europe[47] study on use of fibre connections by households in European countries in 2022, where according to the study carried out by that institution, more than three quarters of households in Iceland have fibre for their connection, see figure 3.1 here above. The ECOI statistical report for end of year 2022 stated that more than 80% of fixed line connections for general residential and corporate Internet service are over fibre, i.e. almost 117,000 connections of a total of just over 142,000.

185. It seems that market conditions in recent years have supported the development of new generation fixed line networks, and there has been considerable investment, both in development of VDSL in the years 2011-2015 and in fibre for more than 20 years. It also seems that years of investments by parties like Ljósleiðarinn and Tengir in fibre networks to the home have had the effect that from the year 2016 Mila has conducted major deployment of fibre to the home and to companies, while from the same point in time, the company's investments in xDSL have significantly decreased. Mila has plans to significantly increase these investments in the coming years. Mobile phone companies have also been building 5G networks in recent times and have ambitious plans to continue this in the coming years.

186. TV distribution over IPTV systems is widespread in Iceland in comparison with other countries, though this has been somewhat on the wane during the most recent years. One can probably attribute the popularity of the IPTV system to the fact that in this country there was never a cable TV system with significant distribution. This meant that there was already a demand on the TV market that had not been fulfilled. It is also possible that two factors had

[44] https://ec.europa.eu/eurostat/databrowser/view/tin00028/default/table?lang=en
[45] Because of varying definitions of households in datasets, there is some uncertainty about the precise number.
[46] With reservation on the precision of data received by ECOI on registration of households in Registers Iceland.
[47] https://www.ftthcouncil.eu/knowledge-centre/all-publications-and-assets/1710/ftth-b-global-ranking-2023

supported each other, that the copper system and the xDSL service provided over that system was of sufficient quality to support TV distribution and that demand already existed. IPTV has the advantage over reception through an aerial that it is possible to view programs in non-linear stream, and consumers therefore increasingly began to use this service. The uptake of IPTV was unusually rapid, and one can assume that IPTV systems in this country, their technical quality and the service options available to consumers, were good by international comparison. IPTV use in this country reached a peak in mid-2018 when 100,504 homes used this TV distribution option. At the end of 2020, they had decreased to 88,109 and at the end of 2022 they numbered 79,968. Siminn market share of that market increased from 56,1% 2018 to 60,3% at the end of year 2022 after having peaked at 64,5% at end of year 2020 while the Vodafone market share had dropped from 43,9% to 35,5% at end of year 2020 and is now at 39,7% at end of year 2022. There has been a great development in the possibilities for consumers to watch TV content through OTT solutions, which probably explains this decrease. Both Siminn and Vodafone have also announced apps that can be installed in TVs and TV computers that can be used instead of IPTV set-top boxes, where the app connects to the TV service through the public Internet (OTT). It is also on offer to connect to TV service from the undertakings through a computer and web interface. The ECOI collection of statistics on the number of set-top boxes does therefore not capture all company transactions in this field.

187. When this high and widespread Internet usage in Iceland is put in context with the widespread distribution of fibre networks that is now in place and the distribution of 4G, 4.5G and 5G mobile networks, one can consider it likely that in this country there is less need to specifically encourage investment in distribution of fibre in access networks than is widely the case across Europe, though deployment of fibre remains to be implemented to a number of homes and undertakings in the country, and in areas where this is more expensive than in the areas that have already been connected to fibre.

3.1.4 Demand on the market for Internet service

188. One thing that has to be examined on retail markets is whether defined customer segments have collectively some specific and other needs than other groups. Differentiation of customers on retail markets and the manner in which such needs are fulfilled is one of the key elements of competition on retail markets in general. One of the main elements of such benefits segmentation is that there is some inner or technical difference between products and that customers are prepared to pay for the product that best suits their needs.

3.1.4.1 Consumers

189. As an increasingly large proportion of electronic communications has migrated to the Internet, the volume of data used by consumers is increasing steadily. This is particularly the case because of the increased importance of digital media, digital entertainment and working from home, including virtual meetings. Visual content in high-definition, HD and 4K, has multiplied data transmission from what it was. This is evidenced in the composition of subscription packages provided by the electronic communications undertakings, where the included data consumption has increased significantly, and unlimited data is now almost always an option. One can also say about a large proportion of consumers, that they are not aware of the speed of the connections they are buying or of the underlying network that

provides the service. Nor do Icelandic electronic communications undertakings generally price their service by speed of connection.

190. Development in the building of networks has corresponded to this increasing need for data transfer capacity and it is almost given that fibre connections to consumers and general undertakings have a 1 Gb/s capacity. There is also the fact that capacity of mobile networks is increasing dramatically, first with development of 4G, then 4.5G and finally with 5G networks.

191. Differentiation in technical characteristics of Internet access, such as performance and service quality are small, if any on the retail market. One could say that a normal consumer connection carries the traffic that most consumers in this country want, with the quality that suffices for their purposes, whether this is in performance, lag or jitter. This can be seen in the way retailers present their products. Mila asserts on its website[48] that VDSL connections ("Ljósnet") fulfil all requirements for households. The supply and advertisements are all about data volume and price, not technical quality or benefits segmentation of some special characteristics. Electronic communications undertakings on the retail market are also beginning to offer connections over a mobile network through a router, particularly 4G, 4.5G and 5G, as a substitute product for fixed line network connections, and now at a comparable price.

3.1.4.2 Company

192. Companies in Iceland are almost all small in international and European comparison. Throughout the years, an Internet connection of consumer quality (home connection) has sufficed for almost all companies. The reason may be that old connections have had good performance, connection uptime has been reliable, malfunctions are rare, and they are quickly addressed.

193. For this reason, an extensive company market that makes greater demands on technical quality has not come into existence in this country, to the extent that is widely the case abroad, which makes increased demands such as on uptime, performance and response time in the case of malfunctions and also on service level where significantly more is paid for such quality assurance than is the case on the consumer market. Undertakings have therefore in general not felt the need to pay more for higher quality service, with the exception of the very largest and/or specialised undertakings.

194. Siminn and Vodafone have most connections on the corporate market, but the Nova share is increasing there, as it is on the residential market. It is characteristic that ADSL connections have very significantly decreased, being only 2.4% of the total number of corporate bitstream connections at the end of 2022, which is however almost a three times higher proportion than for residences. There are some examples of undertakings being slow to upgrade such connections, as they are used for a purpose other than for general Internet service and are for this reason still serving a relatively insignificant purpose. Another characteristic of the market is a significant decrease in bitstream connections over copper

[48] https://www.mila.is/heimili/ljosnet

local loops and the corresponding increase in connections over fibre local loops in recent years, where at the end of 2022 the proportion was 81% over fibre and over 19% copper.

195. Statistics on the number of companies purchasing retail Internet service are distorted by the fact that it is very common that companies pay for home connections for employees. According to a consumer survey commissioned by ECOI in the autumn of 2020, that proportion was almost 20% and it is not likely that it has changed much, except possibly by a slight increase. Such connections are in reality consumer service but in the statistics the connection is recorded as corporate service as the company in question is the payer. The statistics do however indicate where companies seek total solutions for their electronic communications requirements, as home connections for employees are often part of the total purchases of a company of fixed line telephone, leased lines, various kinds of IP solutions, mobile phone solutions, even hosting, payment solutions and so on.

3.1.4.3 Corporate market for specialised solutions

196. There is often an opportunity to offer comprehensive solutions, e.g. with a bid for tenders on varied solutions[49]. Electronic communications companies assemble their products to provide solutions for such needs.

197. If wholesale solutions that are normally used for the consumer market are used in such offers, then this will appear in the regular statistics collected by the ECOI; the Administration has regularly collected data on retail special solutions (e.g. leased lines) for companies.

198. Part of the comprehensive solutions offered to companies will often be home Internet connection for employees, which among other things, may be intended for employees working from home. The employer is then registered as the payer of such connections, and in the ECOI statistics the connection is therefore on the corporate market, though it may be for home use.

199. On the market for bitstream solutions there are also versions that are specifically intended to meet the needs of companies. They then include other functionality than the consumer connection, such as the possibility to set up a separate virtual network tailored to the needs of the company in question. Such connections also receive special service, among other things, shorter waiting time for fault diagnosis and repair, should, that be needed.

200. Shortly after Mila developed its VDSL system, such corporate solutions also appeared that were based on such handling of company needs, and now subsequent to the Mila roll-out of fibre, GPON corporate connections are offered.

201. Needs of undertakings for separate virtual networks have decreased as there is increased use of benefits segmentation and data protection on VPN connections through the public Internet, which can resolve such needs, in a somewhat comparable manner as OTT TV distribution can replace separated IPTV virtual networks for the needs of TV distribution.

202. Internet service intended for homes has generally been of a very high quality in this country, and one can among other things consider that this fact is one of the reasons why

[49] See Decision by the Competition Authority 42/2017, merger 365/Vodafone.

many companies have let consumer products suffice. Performance is good, and there are few faults. In addition to this, companies in this country are on average small and with few employees by European standards, so the performance offered by consumer connections will be sufficient for such operations in the majority of cases. Mila has adapted its product offer to this fact and now offers both “home connections” and “corporate connections” to companies.

3.1.4.4 In general, on demand on retail market for Internet connections

203. Increased capacity of connections and increased offer of media and entertainment content, working from home and virtual meetings, etc., have kept in step with growing demand for increased data volume. It is difficult to see what comes first, the egg or the chicken, i.e. whether new possibilities in streaming and other Internet connected service encourage demand for increased performance and for Internet subscriptions with increased data volume or whether growing technological capacity of Internet connections make the supply of such services possible. When IPTV first arrived, the quality of streaming of visual content over the public Internet was generally impaired because of unreliable capacity, both within the country and between countries. It was therefore a technical necessity that IPTV service received guaranteed capacity on a separate virtual network with priority over that part of the user’s bitstream connection that carried the public Internet. The huge success of streaming services such as Netflix, Amazon Prime Video, Apple+ and others that offer their services through the public Internet, demonstrates that there is no longer a need today for a separate service connection for these needs, which was the case before.

204. The IPTV service that Siminn and Vodafone offer their customers is as previously stated, provided on a separate virtual network as “specialised service” in the understanding of network neutrality rules. On such a virtual network, it is possible to provide the service with more reliable capacity than the public Internet offers, i.e. “best effort”. After Siminn started offering set-top box for its IPTV service in 2018, which can be directly connected to public Internet access (OTT), the undertaking has recently placed greater emphasis on offering the visual content in question without connecting to the Siminn set-top box, as was previously stated.

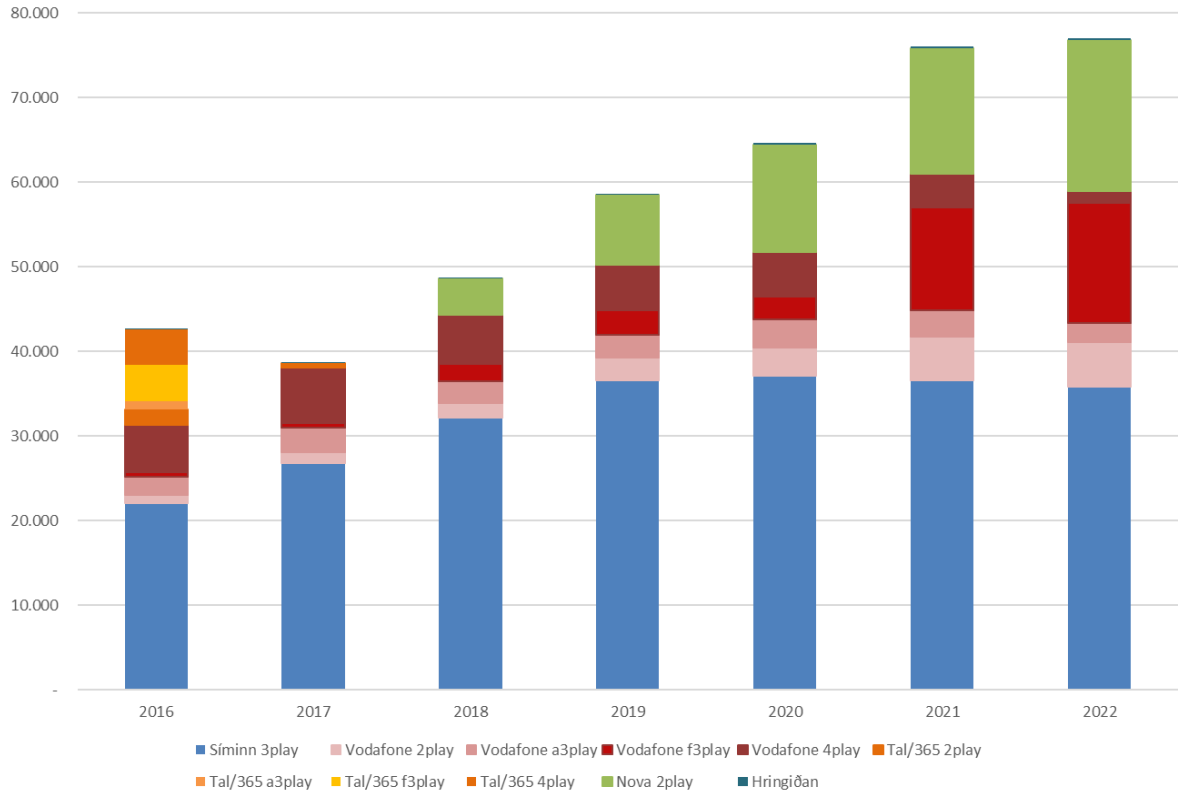
205. It is clear that increased access to visual content of various kinds in high quality is now one of the main drivers of consumer demand whether this is increased possibilities for older streaming providers such as Youtube, or new providers that have joined the steadily increasing content flora. These streaming providers are what are called OTT solutions, as they use the public Internet access of their customers for carrying data to consumers. The popularity and increased consumer demand for such OTT streaming service shows that, as far as quality is concerned, it is not necessary for streaming services to be provided over a controlled virtual network as is the case with IPTV.

3.1.4.5 Company shares of bundles

206. One aspect that one must keep in mind is the number and share of various bundles on the retail market, where some companies may have a stronger footing than others. In past years, ECOI has gathered data on undertakings varied offers of service bundles and on the number of subscriptions sold for these bundles.

207. In figure 3.19 here below one can see how Heimilispakki Símans - which is a trio of Internet services, home phone and TV - is the package that enjoys greatest popularity among consumers at the end of 2022, and that it is head and shoulders above the next bundle below, which is offered by Vodafone but however also offers mobile phone subscription. For many years, Siminn offered its customers that subscribe to its Heimilispakkinn the possibility of tenfold data volume on mobile phone subscriptions, which is tantamount to mobile phone subscription being also part of the offer Heimilispakkinn, though mobile phone service is not actually an integral part of the package. Siminn announced new packages in April 2023, as was previously stated.

Figure 3.19 Number of subscriptions to package offers



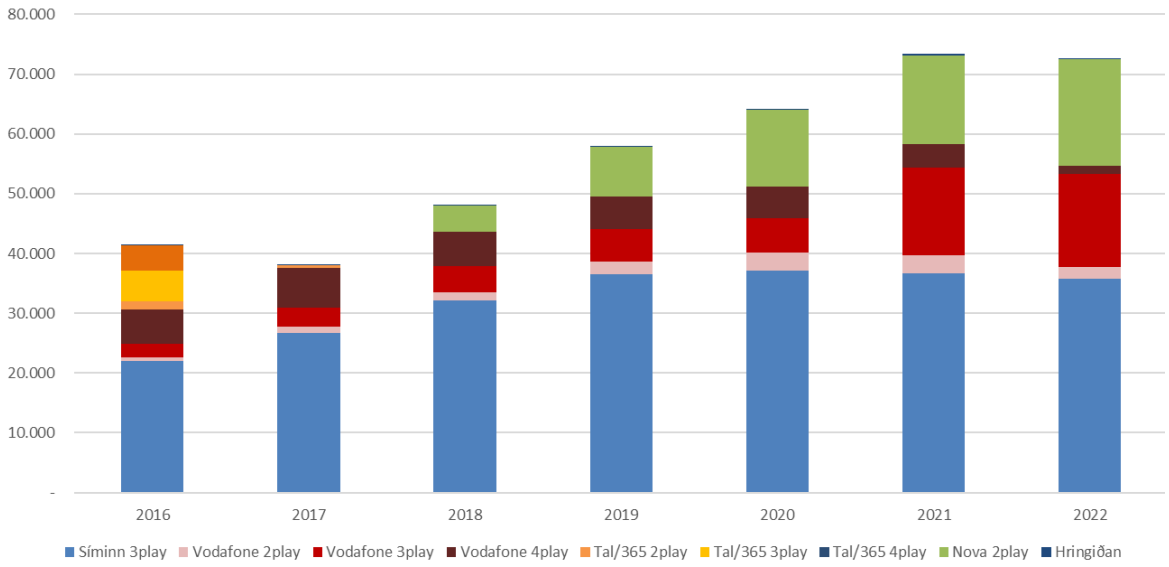
Source: ECOI

208. One must consider it likely that the Nova offer had some effect in maintaining the growth of the company's share in 2018, as the company's Internet service was offered at attractive terms in a bundle which included the company's mobile phone service. The bundle Nova now offers is a combination of Internet service with unlimited data volume and three or five mobile phone subscriptions, also with unlimited data volume, and connections for two or three eSIM connected smart watches, for a fixed monthly charge where the router rental and access charge for fibre are included. The Nova share in bundles has increased significantly between 2018 and the end of 2022.

209. Figure 3.20 shows that specific bundles enjoy greater popularity, i.e. those that include Internet service. The Siminn Heimilispakki includes Internet and TV; the most popular three service Sýn bundle for mobile phone also includes Internet and TV, while the undertaking's four service bundle which also offers home telephone has shown a decline in the number of

subscribers. The number of sold bundles from the undertakings that include Internet service is shown graphically in figure 3.20 here below.

Figure 3.20: Number of bundles that include Internet service



Source: ECOI

210. In analysis of retail markets, bundles can have such importance that they may even be considered to constitute a separate retail market. Whether such a position now prevails is unclear, but regardless of whether bundles are a separate retail market or not, it is clear that the underlying wholesale products are the same - whether Internet service, TV service over IP and IP voice telephony service are separate retail products or sold in one bundle. There is therefore no need in this market analysis to decide whether or not the market for bundles is a separate market at retail level.

211. In Section 9 in the Competition Authority Decision no. 42/2017 (merger of Vodafone and 365 miðlar hf.), dated 8 December 2017[50], there was discussion on a possible market for bundles. The Competition Authority did not take a definitive position on whether a separate market for bundles existed in this country, which contained electronic communications and TV services. It was stated that in recent years, it had become increasingly common that electronic communication companies would offer consumers varying types of electronic communications services, and even TV service as a single purchase. Another word for such marketing is bundling or tying of transactions. In competition law it has been deemed the companies with market dominance were bound by certain restrictions when it comes to bundling or tying.

212. It was then stated that in Iceland, it was common that consumers chose to purchase more than one type of electronic communications service from the same company. It was also clear that a significant number of customers of the merging parties purchased predefined discount packages which contained more than one type of service. The above specified offers were based on rewarding the consumer with a discount on list price if he purchased more

[50] https://www.samkeppni.is/urlausnir/akvardanir/nr/3017.

than one type of service from the company in question. The position on the market indicated a considerable and growing importance of packages in transactions for electronic communications and TV services. A large part of these package offers included TV service of some kind or another. From this it was clear that TV service was extremely important for the packages that these companies were selling.

213. It was also stated on pages 70-71 in the above specified Competition Authority Decision:

> *"Despite the fact that the market for bundles is still developing, one must in the opinion of the Competition Authority, take particular note of the impact of the merger on that market. This particularly applies to the market for bundles that include a mixture of electronic communications and TV services. An analogous approach was among other things, grounds in the above specified Decision of the ESB Commission in the Vodafone/Liberty Global case."*

214. With the CA Decision no. 25/2020, dated 28 May 2020[51], the Authority came to the conclusion that Siminn had, with the sale of the TV channel Siminn Sport with English football through Siminn Heimilispakkinn, breached three of the above specified conditions in two settlements that the company had undertaken with CA in 2015. With the Ruling of the Competition Appellate Committee no. 1/2020, dated 13 January 2021[52], the Committee confirmed that Siminn had breached Article 3 of the Settlement between Siminn and the CA, as stated in the CA Decision no. 20/2015. The provision in question that Siminn was deemed to have breached was to the effect that Siminn was not authorised to make it a condition for purchase of electronic communications service that the company provided, that some part of service of Skjárinn pursuant to the settlement should be included in the purchase. Siminn is furthermore unauthorised to bundle its electronic communications services and those of Skjárinn at a price or on such terms that would be equivalent to the above condition. Siminn was considered to have breached the second item of the provision.

215. It was confirmed by the Appellate Committee that Siminn had, with its selling and marketing of the TV channel, Siminn Sport through Heimilispakkinn, breached the conditions of Article 3 of the settlement in question. In the opinion of the Committee, Siminn had leveraged its position to cause its customers in one type of service to buy or receive Siminn service of another type, for a price or on business terms that could be equated to a condition to purchase these service types together. With marketing which made the TV station Siminn Sport part of the Heimilispakkinn through the content provider Sjónvarp Símans Premium, while at the same time increasing the Heimilispakkinn price insignificantly, one must deem that Siminn had specifically endeavoured to get that group of its customers that had already purchased electronic communications and TV service from Siminn through the above specified service option, to also purchase access to the TV channel in the same manner. Siminn could not have been unaware of the fact that the companies selling and marketing of the TV channel, Siminn Sport could be in breach of provisions of the settlement. With a judgement of the District Court of Reykjavik dated 11 October 2022, Siminn was cleared of

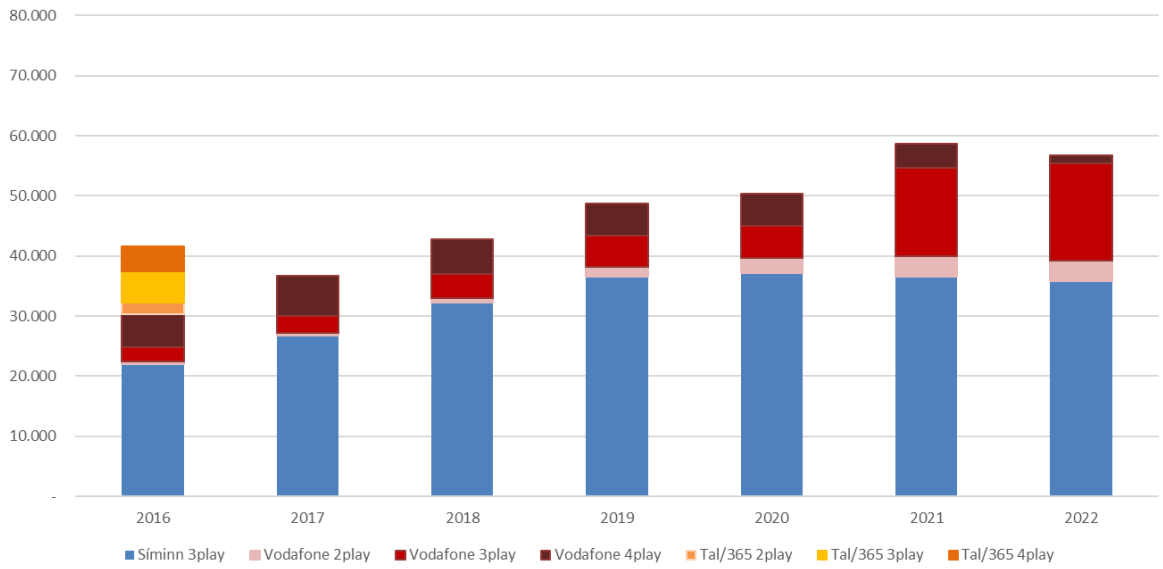
[51] https://www.samkeppni.is/urlausnir/akvardanir/nr/3755.

[52]https://www.samkeppni.is/urlausnir/akvardanir/nr/3755https://www.samkeppni.is/urlausnir/akvardanir/nr/3755

the breach in question. CA appealed the case to the National Court where a decision of the District Court of Reykjavik was confirmed on 16 February 2024. On CA webpage the same day it was stated that CA was considering appealing that ruling to the High Court.

216. TV service has proven an important service item for the undertakings and the lines of battle in competition in electronic communications have among other things been drawn there, as demonstrated by the discussion on the above specified decisions by CA and ECOI in cases related to TV. The figure here below shows the number of bundles that include TV.

Figure 3.21: Number bundles including TV

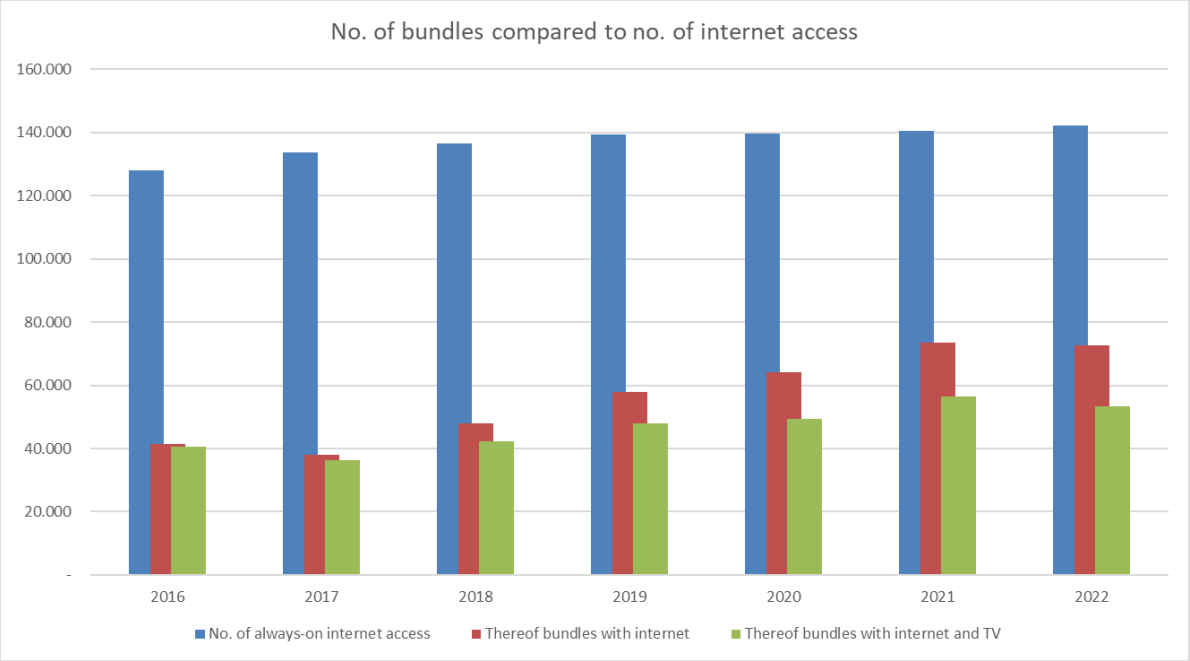


Source: ECOI

217. As stated here above, the importance of bundles can be of great significance in the retail offer of the electronic communications undertakings, and competition has, to quite some degree hinged on undertakings retaining as large a proportion as possible of household business, and in some instances, corporate business, by offering bundles with discount terms from list price of each constituent product.

218. In this case it is bundles that include Internet service and TV that carry most weight. The figure here below shows the number of all public Internet connections in comparison with the number of bundles including Internet on the one hand and bundles that include both Internet and TV on the other.

Figure 3.22: Number of bundles with Internet and TV in comparison with all Internet service on fixed line networks



Source: ECOI

219. As can be seen in figure 3.22, the proportion of Internet service sold as part of a bundle has been increasing in recent years, from 32% at end of year 2016 to 51% at end of year 2022. This has however remained almost unchanged between the years 2021 and 2022. Bundles that include both TV and Internet have increased from 32% of all public Internet service at end of year 2016 to 38% at end of year 2022. The importance of TV as a product sold along with Internet service is thus clearly significant.

3.1.5 Development of offer of various access technologies on the retail market for access at a fixed location

220. Mila, having inherited the Post and Telephone monopoly, has throughout the years, controlled copper network with close to the national coverage, though the scope of this has decreased in recent years because of deployment of fibre networks.[53] Though such networks were first deployed solely for fixed line telephone service, they were upgraded to carry data in parallel with telephone traffic. This was first done with ISDN, which made it possible to offer consumers up to 128 Kb/s connections. Mila subsequently upgraded the data transfer available to consumers through the copper network to a very large degree through VDSL connections during the years 2011-2015.[54] Then the development of fibre networks

[53] At the end of 2020, the Mila copper network reached 86% of homes and companies in the country, but this proportion had dropped to 85% at the end of 2022. In recent years, Mila has only deployed fibre local loops to new buildings. When the company's fibre local loops are included, the companies local loop network reaches almost all homes and companies in the country. Mila has now announced the decommissioning of the copper system in phases until 2028, and given those plans, copper will be decommissioned in the most populated areas of the country during 2027 and 2028, i.e. towards the end of the lifetime of this analysis.

[54] About 93% of Mila DSL bitstream connections were made with the VDSL technology at end of year 2022, where VDSL connections were on 74% of the total number of copper lines in use.

commenced, and their distribution has increased year by year since the company began their deployment in earnest in 2016, and the undertaking's networks of this kind at the end of 2022 reached 120,000 residences and undertakings in the country, which represents 70-80%. Mila has ambitious plans for continued fibre development at many locations in the country for the coming years.

221. Undertakings like Ljósleiðarinn and Tengir commenced their fibre roll-out in their territories more than 20 years ago. At end of year 2022, the Ljósleiðarinn fibre network reached about 120,000 of the country's households and companies in that undertaking's operational territory[55] and the Tengir network reached about 13,000 households and companies in the North and East Iceland. Ljósleiðarinn is now acquiring access to the NATO Fibre Optic Ring, and it remains to be seen whether and then to what extent the undertaking will commence fibre roll-out at more locations in the countryside.

222. Smaller companies like Snerpa in the West Fjords and Austurljós in East Iceland have deployed fibre on a much smaller scale, as have some municipalities here and there across the country and they have mainly deployed fibre in rural areas, often with state aid. Eygló ehf. which is owned by the Western Islands municipality has for example commenced fibre deployment for that municipality, which is planned for completion in 2025, where this will be something over 2,000 fibre local loops.

223. Concurrent with this development in fixed line networks, a number of wireless solutions for data transfer were on offer. The following subsections deal with the most common categories of access technology in use in this country.

3.1.5.1 xDSL copper solutions

224. xDSL is an umbrella definition for a variety of digital solutions used to offer powerful data transfer through traditional copper lines. This is implemented with fibre connections to telephone exchanges or street cabinets where the copper system distribution frames are located, and from those points the access line, i.e. the local loop lies to each user and equipment which is called DSLAM (Digital Subscriber Line Access Multiplexer) makes a connection over the copper local loop. Using equipment (DSL modem) located with the customer, then provide access from the point of view of the user. DSL technology has gone through many upgrades and versions which provide more and more powerful data transfer to customers.

225. In this country, in broad terms, the following DSL technical solutions have been used, among other things, to provide services on the consumer market.

- ADSL with 8 Mb/s download and 1 Mb/s upload maximum performance, with usable range of up to 3-4 km local loop, as such, with a 4 Mb/s connection, but it is possible to achieve connections with very limited performance to a maximum of 8 km.
- ADSL2 with 12 Mb/s download and 3.5 Mb/s upload maximum performance where about 12 Mb/s is achieved on a 1,500 km line length.

[55] Capital City Area, South Iceland, Reykjanes and West Iceland.

- ADSL2+ with 24 Mb/s download and 3.5 Mb/s upload maximum performance where about 12 Mb/s is achieved on a 2,500 km line length.

- VDSL with 50 Mb/s download and 25 Mb/s upload maximum performance on an approximately 300 m line length. With the VDSL, the DSLAM equipment is usually located in a street cabinet, instead of the distribution frame at the telephone exchange and thus much closer to the customer, as the technology does not support long-range connections.

- VDSL with vectoring with 100 Mb/s download and 25 Mb/s upload maximum performance. By using error correction called vectoring it is possible to double the performance of VDSL connections. The line length is still about 300 m.

- VDSL has however been offered to customers with up to 1,000 m line length, but then with impaired performance which gives about 30 Mb/s download.

226. One cannot expect further investments of any magnitude to be made in DSL technology on copper networks, but there are solutions such as G.fast where it is possible to achieve 1 Gb/s download on lines shorter than 100 meters. Then there is the possibility of fibre to the house and copper lines to residences within the building. Experiments with XG-Fast have shown that it is possible to achieve 10 Gb/s performance on copper lines up to 150 metres. A few years ago, Mila decided to discontinue upgrading the copper network and has concentrated on more intensive fibre roll-out from the year 2016. As previously stated, Mila aims to decommission the copper network in phases until the end of 2028, but most of the phasing-out will take place in the years 2027 and 2028 according to information from the undertaking.

3.1.5.2 Cable networks

227. Some years ago, there were cable systems for TV distribution that were built in neighbourhoods or in smaller urban clusters. These systems were mostly almost all decommissioned when the offer of TV content increased through other distribution channels in this country, mostly over IPTV.

228. There is however one company that also offers Internet service through a cable system, i.e. Kapalvæðing and it had some share in one municipality, i.e. in Reykjanesbær where it operates, but the share at a national level is negligible. The company operates on its own DOCSIS infrastructure and does not offer wholesale to other service providers. The cable system in question reaches just under 4,000 households in Reykjanesbær, where the active connections totalled just under [...] and usage of the system was therefore less than [...] at the end of 2020. Kapalvæðing suffered the misfortune of a fire in its system control facility in the autumn of 2021[56] where its customers experienced service outage. The company responded by moving its customer connections to fibre at Mila and Ljósleiðarinn, and also to 5G network routers. The cable system has been partly reinstated but distribution is now limited to Ásbrú, which is a district in Reykjanesbær. Service commenced on the system in the latter part of 2022 and there are now only [...] customers connected to the system. Kapalvæðing has now reached an agreement with Ljósleiðarinn on access to that undertaking's fibre network, and now offers retail service over the Ljósleiðarinn fibre network at more locations than in Reykjanesbær. In the opinion of ECOI, it is unlikely that the

[56] https://www.vf.is/frettir/talsvert-tjon-i-bruna-i-stjornstod-kapalvaedingar-i-reykjanesbae--

company's cable system will extend to other parts of Reykjanesbær, beyond what has already been done in Ásbrú, and even less likely that this would take place outside that municipality.

3.1.5.3 Fibre networks

229. Service through fibre local loops has been on offer for just over two decades in this country. It was first offered in very limited experimental projects and then rapidly to mass market consumers. Fibre roll-out was not particularly speedy however in the first years, but it has been rapid during the past 10 or so, particularly since 2016 when Mila started fibre roll-out, and both Ljósleiðarinn and Tengir have slowly but surely rolled out fibre for more than 20 years, as also has Snerpa in the West Fjords and Austurljós at Egilsstaðir during the past years. Many fibre networks have been deployed by municipalities in the most rural areas, most frequently with state support, and about 6,300 fibre connections were deployed in connection with the project Iceland Digital Connected. In recent years and months, Mila has purchased a significant number of these countryside networks. Tengir and Snerpa have also cooperated with municipalities in deployment of fibre networks. Some fibre networks are jointly owned by the municipalities and the electronic communications undertakings.

230. Today, the fibre access network has first and foremost two network topologies, i.e. passive optical network (PON) using passive optical splitter on the one hand and point-to-point network (P2P), using optical switch, on the other.

231. In many places, market conditions are such that former monopoly holders in electronic communications in Europe, i.e. former state telephone companies, have chosen passive optical network (PON) solutions while new parties on the competition market have chosen P2P. This, however, is not without exception, but this has among other things been the situation in this country.

232. On 22 August 2023, Mila introduced XGS-PON standard where each customer can get a connection with up to 10 Gb/s symmetrical performance, i.e. equal upload and download. Having taken into account the overheads of communication protocols and error correction, 8.6 Gb/s will be accessible for customers on Mila fibre. The service area for XGS-PON was the Capital City Area as from 1 October 2023, 10 Gb/s being only available in the Múlastöð catchment area and 2.5 Gb/s at other locations in the service area. Upgrading to 10 Gb/s in the whole area will on the other hand be completed by 1 April 2024. Deployment at wider locations in the country was not specified.

233. On 13 September 2023, Ljósleiðarinn announced its plans to offer an upgrade to 10 Gb/s service across its whole operational territory from and including 1 October 2023.

234. [...].

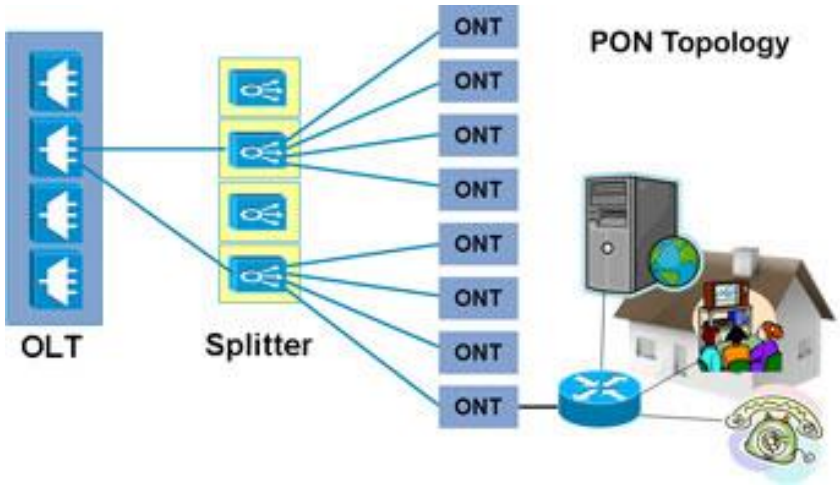
Passive network topology

235. Passive Optical Network (PON) network topology is implemented with a single optical fibre from an Optical Line Terminal (OLT) to a conduit access, which is close to the customers, often 32, 64 or 128 end-users. In the conduit access pit there is a passive splitter which divides the light from this one fibre in 32 to 128 directions, i.e. to the customers that are connected to the splitter. The splitter is passive, i.e. a kind of prism that breaks up and directs the light

rays into other fibre lines. An Optical Network Terminal (ONT) is located at the user end for connections to traditional in-house network cables, such as for a router from an Internet service provider. There are many standard solutions within PON technology, but Gigabit PON (GPON) is currently in all likelihood the most used, among others by Mila.

236. The GPON solution, like the one used by Mila, can carry light over a 20 km line route to 32, 64 or 128 customers. Varying bit speeds are possible, but it is usually 2.4 Gb/s download and 1.2 Gb/s upload that are shared by the customers who are connected to the same optic splitter and its optic fibre to the central connection point. Mila offers customers up to 1 Gb/s symmetric service on its GPON network through sharing, where the most usual configuration is for 64 customers to be connected to one splitter.

Figure 3.23 Topology of PON fibre networks



237. Future envisaged solutions include, among others XGS-PON, 25G-PON and 50G-PON where up to 10 Gb/s symmetric bandwidth can be offered to customers in the case of XGS-PON, 25 Gb/s in the case of 25G-PON and 50 Gb/s in the case of 50G-PON.

238. The Mila XGS-PON solution can send an optical signal over a 20 to 60 km cable route to 4, 8, 16, 32 or 64 customers, all depending on network operator needs. The carrying signal bears 10 Gb/s symmetrical, i.e. to and from the user, and is shared with the customers that are connected on the same optical splitter and its optical fibre to a central connection point. Mila offers consumers up to 10 Gb/s symmetrical service on its XGS-PON network. In order to approve stability of connections, the intention is to use forward error correction (FEC), which causes what is called an overhead weighting the limits real-time speed to end users to 8.2-8.6 Gb/s on an IP layer. There is also inbuilt technology to encrypt all data between users and central equipment in order to prevent the possibility of monitoring communications.

239. As the splitter is located quite close to rather few customers and is passive, i.e. there is no need for electricity or cooling and though it is small in volume, it is almost impossible for outside parties to gain physical access to dark fibre local loops to users. There are few options to install the equipment and access is obtained to few users from each manhole.

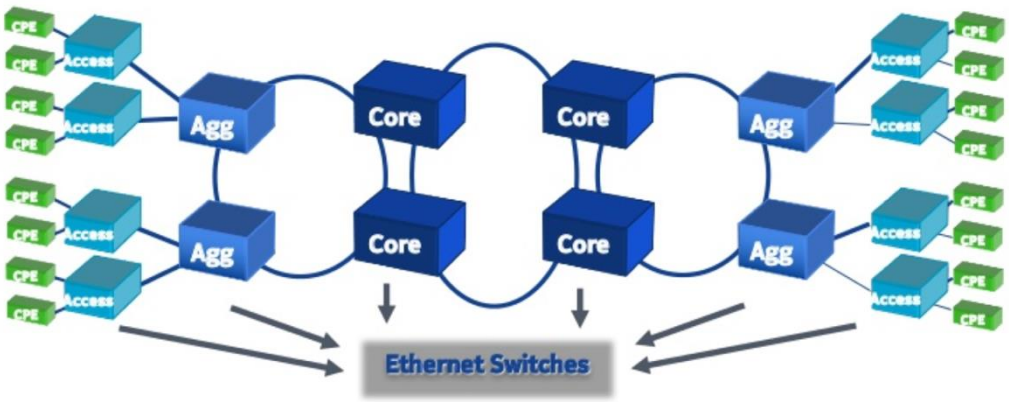
240. By far the largest part of Mila fibre system has the above specified PON topology, and Mila, in addition to strong fibre roll-out on market grounds from 2016, has to a significant degree been purchasing or assuring long-term control over fibre networks in the countryside that have been developed with active P2P topology. This applies in other things to a network developed by Gagnaveita Skagafjarðar in Sauðárkrókur, which is now owned by Mila, and to smaller rural networks that have been developed with state aid in the most sparsely populated areas. Mila then adds PON equipment to such P2P fibre to ensure harmonisation in the company's network operations.

241. It is technically problematic to provide physical local loop access to a PON fibre network, and up to this point in time, such access is too expensive in execution to be profitable.

Active network topology

242. Active networks are often based on many connection points being connected together in rings or nets. The rings often form a core layer, aggregation layer and access layer. At each connection point there is a network switch which directs traffic into the next ring or segment in the network. The network switch is active equipment which means that it uses electricity and needs cooling and makes decisions on where the data in question is directed. It reads the data that the incoming light signal holds, decides through which connection port it should be sent and sends new light signals into the fibre connected to those connection ports. With such rings or nets, many routes are made through which data can stream through the network. At the perimeter of the rings or nets, users are connected with the connection point (CPE with access). That is the only location in the network where there is no reserve route.

Figure 3.24 Topology of active fibre networks



243. As all equipment is active, the quality of the service can be controlled through the network, but this requires that each connection point needs to have equipment with performance that can handle all traffic that goes through the connection point or that is foreseeable. Each customer therefore has an independent and quality-controlled connection to the network switch of the access layer. As the fibre is whole and undivided from the access switch to each customer, it is the connection equipment of the access layer switch and the endpoint devices of the customer that control the performance of the connection. By replacing equipment one can therefore increase transfer capacity.

244. Ljósleiðarinn has from the outset operated a network of this type, as has Tengir in North Iceland. [...]. In municipalities that have received a grant from the Telecommunications Fund, connection points are few and the final local loops are often long. Countryside networks are seldom based on rings or nets. In many cases, the fibre network is P2P topology and use is based on PtMP as Mila's PON equipment is the active service that is connected to the passive lines.

245. Ljósleiðarinn first offered 100 Mb/s, then 400 and then 500 Mb/s, but since late in 2015 all customers have been moved to a 1 Gb/s symmetric service. Tengir also operates its active P2P network with 1 Gb/s capacity.

246. On 13 September 2023, Ljósleiðarinn announced its plans to offer an upgrade to 10 Gb/s service across its whole operational territory over a P2P topology network from and including 1 October 2023.

247. Connection points on the access layer, where the last leg to the user is connected, are often rather large and connect a considerable number of users. There is room there for a connection cabinet with electricity and cooling. It is therefore generally technically possible for external parties to have access to the local loop from that point and to connect to their own equipment. In some instances, there are connection points, but they are in restricted space which can hinder access to local loops. As an example of access to technical space, one could mention that Mila receives hosting for an optical splitter in Tengir technical space and uses the last leg to make its own GPON bitstream service on dark fibre local loops leased from Tengir.

3.1.5.4 Wireless access network with fixed use location (WiMax and similar)

248. In the countryside, where line lengths are too long for xDSL solutions in existing copper networks and where there is no available fibre, it can prove feasible to build networks on wireless technology. As the user is at a fixed location, even with a reasonable aerial on the roof, a good connection can be maintained. Over shorter distances, e.g. in urban areas, one may provide such service to users who are on the move.

249. WiMax is one standard for such service, and such networks have been operated in this country for many years by e.g. Ábótinn in South Iceland, Gagnaveita Suðurlands and by the company eMax which subsequently merged with Vodafone, which decommissioned the system some years ago. Ábótinn also decommissioned its service some years ago. Gagnaveita Suðurlands does however still operate such systems in South Iceland, Borgarfjörður in West Iceland at Vogar in Reykjanes - and has local frequency licences for this purpose, with customers, totalling about [...]. With this technology, it has been possible to achieve performance on a par with ADSL or even VDSL, up to 40 Mb/s download speed and 10 Mb/s upload and ping about 50 ms, similar to what was achieved in modem service.

250. WiMax networks have therefore mostly been decommissioned, among other things because of the Iceland Optical Connected project operated by the Telecommunications Fund. Mobile network service over 3G, 4G, 4.5G and 5G has totally replaced WiMax in urban areas. Now there is only one company, Gagnaveita Suðurlands, with a frequency licence for operating a WiMax network on 3.5 GHz frequency range, which is in force until 2024.

3.1.5.5 Mobile network

251. The capacity of data transfer in mobile networks has changed dramatically in recent years with deployment of 4G technology, which has national coverage, 4.5G technology which has local coverage at many locations in the country and now most recently with 5G technology, which has been deployed during the past 2-3 years to various urban locations across the country, and this deployment will continue in earnest during the coming years. Customers of mobile network service have several possibilities to use an Internet connection through a mobile network.

252. Most common is that the handset itself, a smart telephone, is open for data transfer. Not all smart phones can handle 5G, but such handsets are increasing rapidly in number. The situation on the mobile phone network market is now such that telephone minutes and SMS, which were previously the main source of income for mobile networks, are now provided in unlimited quantity while data quantity has become the sales product.

253. The usage pattern of consumers in handheld devices is to be connected with various services on the Internet, among other things social media, chat systems, web pages, visual content and email while on the move. Fixed line service is clearly not a substitute for such mobile network service.

254. In the same way, fixed line service has for a long time offered network connections at another quality level than mobile networks, though 5G and to some extent 4G and 4.5G have made the difference in quality level much less than before. The performance of fixed line networks is still much greater than 4G and older mobile network technology, and somewhat better than 4.5G technology, particularly if one takes fibre into account. This difference has become much less with 5G and in the best conditions the performance can be similar to fibre. Ping is often somewhat less in fixed line networks, which is important for real-time communications and particularly for network games, but this difference has lessened somewhat with 5G and to some extent with 4.5G. Jitter is often somewhat less in fixed line networks, which is important for real-time communications for stable service, but this difference is also lessening with 5G and to some extent with 4G and 4.5G. Then the capacity of each mobile network transmitter is also shared by those who are using the service at that point in time. Fluctuations in capacity of mobile networks are therefore more likely to lead to impaired or varying capacity for each user than is generally the case on fixed line connections, though this problem is lessening significantly with 5G and to some extent with 4G and 4.5G. It is appropriate to note in this connection that network topology of electronic communications undertakings and capacity of trunk line connections used for data transfer can also have an impact on capacity for users, both in the case of mobile networks and fixed line networks.

255. Pricing of the service has been varied and it has been somewhat more expensive to use data transfer on mobile networks than on fixed line networks through the years. This difference has decreased in recent times and mobile network undertakings now offer subscriptions with unlimited data volume over mobile networks at the same or even slightly lower prices than subscriptions for fixed lines, as can be seen in the discussion in section 3.1.2 on retail offer.

256. There has been significant development in next generation mobile networks, 5G, in this country in recent times. Siminn, Sýn and Nova have rolled out 5G service in the Capital City Area and in the country's main urban nuclei.[57] In March 2023, ECOI sent three questionnaires to mobile phone undertakings where there were questions among other things on plans for 5G roll-out. From the answers received from the undertakings, one can see that they have ambitious plans for vigorous development of their 5G systems in the coming years. It was also stated that in the years 2024-2025, the undertakings expected that mobile phone cores, and not only transmitters, will have become 5G, which means that the undertakings will then have stand-alone 5G.

257. As stated in section 3.1.1 here above, Siminn, Vodafone and Nova had their frequency licences renewed for 20 years on 21 March 2023[58]. These are the frequencies 800, 900, 1800, 2100 MHz and 3.6 GHz, among other things for 5G. The speed and distribution requirements made in the licences are characterised by ladder development, where the final minimum requirements are that at least 99% of households and workplaces will have access to high speed service over mobile networks and that 97% of them will have service with a minimum of 1 Gb/s speed, and in the table below the general distribution requirements of the electronic communications undertakings in question are specified for the coming years[59].

Table 3.1 Dated distribution and speed requirements in inhabited areas

Hraði	Dagsetning	Hlutfall (heimili og vinnustaðir)
150 Mb/s	31. desember 2026	95%
250 Mb/s	31. desember 2027	99%
500 Mb/s	31. desember 2028	95%
500 Mb/s	31. desember 2030	99%
1 Gb/s	31. desember 2032	95%
1 Gb/s	31. desember 2034	97%

258. Taking the above into account, ECOI believes that a significant proportion of the population will have access to 5G service during the lifetime of the market analysis. ECOI believes that initially for the coming months and years, 5G service will first and foremost mean increased data transfer speed made possible by the 5G frequency band, used with 4G service core and in addition to this, the 3.6 GHz frequency range will be used to fill in the gaps in areas under pressure that are calling for increased bandwidth to maintain good (adequate) speed. New service elements of 5G, what is called stand-alone 5G where the service core is also 5th-generation, that among other things, offer significant bandwidth, low ping and very little jitter can, in the opinion of ECOI, be introduced in late in 2024 or early 2025. The effect that stand-

[57] Mobile network distribution systems:
Síminn: https://www.siminn.is/5g#dreifikerfi
Sýn: https://vodafone.is/simi/thjonustusvaedi/
Nova: https://www.nova.is/farsimi/thjonustusvaedi

[58] https://www.fjarskiptastofa.is/fjarskiptastofa/tolfraedi-og-gagnasafn/frettasafn/frett/Fr%C3%A9ttir/utgafa-tidniheimilda-til-20-ara-med-skilyrdum-um-hahradafarnetsthjonustu-i-byggd-og-a-stofnvegum.

[59] See, for example. Siminn frequency licences, from 23 March 2023, and the Nova and Sýn distribution requirements are similar: https://www.fjarskiptastofa.is/library?itemid=cb0ff82e-b3bc-4539-972c-d19f1d1d3f45.

alone 5G service will have on the offer on the relevant market is still not clear, as the content of these elements is not yet established.

259. According to all of the above, it is the opinion of ECOI that high-capacity mobile network service, particularly those of fifth generation, 5G, and furthermore 4G and 4.5G can provide substitutability for data transfer service over copper and fibre networks during the lifetime of this analysis. A consumer survey commissioned by ECOI in November 2022 strongly supports this conclusion. There will be further discussion on the possibilities of mobile networks for substitutability with fixed line service at retail level later in section 3.2.4 and in section 4 with respect to wholesale level.

260. Westman Islands was the first municipality in the country to offer general public distribution of 5G service, measured as a proportion of inhabitants. This appears not to have resulted in the municipality not seeing a need for fibre roll-out to the municipality's households and places of work, as in the summer of 2020 a decision was made to commence the first phase of fibre roll-out for the municipality. The following is stated on this issue in minutes of a municipality council meeting: *"The town council is unanimous that there should be no further delays to fibre roll-out in the town, as this is part of the infrastructure that is good to have in place in order to make the employment sector more varied with increased innovation and entrepreneurship."*[60] This decision by the Westman island municipality council increases consumer choice for electronic communications of households in the municipality, where powerful mobile phone solutions are in place. The municipality founded the private limited company Eygló, which has commenced fibre deployment in the town, which is planned for completion at end of year 2025. Mila has in the same way from the year 2021 embarked on some fibre deployment in the Westman Islands, such that both competition and price and requirements made by households and companies for quality of service may decide in the Westman Islands, as at other locations in the country where there is both 4G, 4.5G and 5G mobile network service and fibre connections, which electronic communications connection will be chosen by inhabitants and companies.

261. In prior analyses by ECOI one can see that neither companies nor consumers considered broadband data transfer service over mobile networks as a substitute service for general broadband access on fixed line networks at that time and during the lifetime of those analyses. ECOI has recently noticed changes in this respect with increased use of 4G and 4.5G networks for data transfer and particularly with the advent of 5G mobile networks that connect through routers. This applies both to the behaviour of electronic communications undertakings, i.e. pricing and marketing, and also to consumer demand for such solutions.

262. As stated previously, ECOI commissioned a consumer survey in November 2022 to particularly evaluate whether mobile networks now provided substitutability for general broadband access on fixed line networks. When asked whether an electronic communications connection with a mobile network could replace a fixed line household connection, 55% of those living in 5G urban areas who had an opinion, answered the question in the affirmative. In other geographic areas, 44% answered in the affirmative and the proportion of total

[60] See minutes of Westman Islands town Council meeting from 11 June 2020: https://www.vestmannaeyjar.is/stjornsysla/stjorn/fundargerdir/DisplayMeeting.aspx?id=08637272205243966 5591&text=

respondents answering this question in the affirmative was 53%. The questionnaire showed that just under 11% of users had 5G or 4G/4.5G as the household electronic communications connection through which Internet service was received and it was interesting to see that this conclusion varied very significantly by geographic area. For example, 5G or 4G/4.5G accounted for 23% of household connections for Internet service in East Iceland. These conclusions provide an indication that mobile networks over 5G or 4G/4.5G can provide substitutability for fixed line connections in the opinion of consumers. The conclusions of the consumer survey will be dealt with in more detail here below in section 3.2.2.3.

3.1.6 Internet service companies' business model

3.1.6.1 Own infrastructure

263. Companies have the option of building their own infrastructure. During the last two decades or so, infrastructures based on fibre have been the only realistic option in new investments in fixed line networks when one considers how long the lifetime of investments in electronic communications infrastructure needs to be if they are to pay for themselves. In the light of the fact that three mobile network undertakings operate in Iceland using their own infrastructure to a greater or lesser extent[61] and that the country has few inhabitants and is sparsely populated, it is not expected that more mobile phone network undertakings will join the fray and build their own mobile networks. The three incumbent mobile network companies are all currently involved in vigorous 5G roll-out.

264. A company can lay its own fibre and be the only retailer of all services on such a network. The company then accepts all the risk of the utilisation ratio of its own retail business supporting the investment in infrastructure. Mobile network undertakings all operate their own electronic communications core. Nova and Vodafone have for many years, jointly operated an electronic communications distribution system and have sold its passive infrastructure, such as masts and buildings. Siminn has now sold Mila, which operates a mobile phone distribution system that was previously owned by Siminn and that Siminn continues to use.

3.1.6.2 Leased infrastructure

265. A company that builds its own infrastructure can gain additional revenue by leasing access to its infrastructure to other electronic communications companies. If the company is itself retailing on the network, it is then opening its infrastructure to direct competition, but would possibly gain wholesale revenue from the additional usage that would outweigh the potentially reduced share in retail business. An undertaking can also invest in infrastructure for the purpose of selling wholesale access to the infrastructure, while still not itself operating at retail level.

[61] Síminn transferred its electronic communications distribution system to Mila at the beginning of 2021 and then sold Mila at the end of September 2022, but there is a long-term agreement between Siminn and Mila for Siminn access to the distribution system. Sýn and Nova have sold their passive infrastructure that connects those undertakings' mobile networks.

266. A company that uses such access, i.e. leases access to another company's infrastructure on market terms, benefits from not having to invest in infrastructure itself, or at least, to a lesser degree. This is counterbalanced by it being in the interests of the lessor to have sufficient income from the connection and thus to maintain a high wholesale price, thus gaining as much of the retail price of the service as possible. It is also in the interests of the lessor not to lose his own share of the retail business to a competitor, if the undertaking is also a retailer of service to end users, e.g. by differentiating himself clearly on the market, such as by not giving the lessee access to all the resources of the infrastructure or to new technical possibilities as soon as they become available, but using it rather for himself and his own customers. Such a risk hardly exists any longer in the access network on the Icelandic electronic communications market, with respect to fixed line networks, after Siminn sold Mila, and to a lesser degree on the mobile network market for the same reason. Nova and Vodafone could have such an incentive in the mobile network, as these undertakings are vertically integrated there.

267. The Siminn Group was an example of a vertically integrated undertaking prior to the sale of Mila to Ardian which operated both at wholesale and retail levels. Snerpa operates at wholesale and retail level, and the company's fibre network is in the West Fjords and reaches more than 1,400 homes and companies, first and foremost in Ísafjörður. Ljósleiðarinn and Tengir are examples of telecommunications companies that build their own fibre system but do not sell Internet service to companies or homes and instead sell access to their fibre network to other electronic communications companies, Ljósleiðarinn, only with bitstream access (market 3b) and Tengir both local loop lease (market 3a) and bitstream access (market 3b). Eygló in the Westman Islands plans only to be a wholesaler on its fibre network and the same can be said about all the smaller countryside networks that have been developed with state aid. In addition to this, Austurljós has deployed 200-300 fibre local loops at Egilsstaðir in East Iceland, and leases local loop access to other electronic communication companies, but also operates on the retail market. This undertaking also operates bitstream equipment on its network.

268. Before the Siminn Group sold Mila to Ardian, the technical production of Internet service and the IP addresses and AS numbers necessary for the service were transferred from Siminn to Mila. Mila therefore produces fully developed Internet service that Siminn purchases in wholesale and resells to end users, households and undertakings. Siminn therefore not only leases infrastructure from Mila for transmission of service, but also purchases the service itself to a large extent.

3.1.6.3 Regulated access to infrastructure

269. If there is a party on the market who has been designated as being an electronic communications undertaking with significant market power, he may be bound by obligations to provide access to his infrastructure at cost analysed prices and must respect non-discrimination and transparency. It should however be noted that ECOI has never imposed price control on Mila fibre local loops, only on the undertaking's copper local loops.

270. The obligation means that such a party is not authorised to deny access for a competitor to his infrastructure or for related parties, while non-discrimination obliges him to provide external parties with the same service as his own retail operations or related

parties; transparency is an obligation to provide external parties with the same information and cost analysed prices ensure that such a party cannot take an unreasonably large part of the revenue from the service. The obligation for cost analysed prices is dependent on the party in question having significant market power at wholesale level. If ECOI comes the conclusion that the conditions prescribed in paragraph 1 of Article 59 of the Electronic Communications Act no. 70/2022 are fulfilled, the Administration can only impose obligations on the undertaking for access and non-discrimination and for fair and reasonable pricing if such is considered justifiable on the basis of market analysis. In paragraph 4 of Article 59 it is however stated that all possible obligations may be imposed on such a company if competition problems exist or are likely to arise and damage end users. It is appropriate to note that the obligation for fair and reasonable pricing is a much milder obligation compared to the obligation for price control, which among other things can require cost analysed prices.

271. A company that uses such access has thus the option of acquiring economical access to infrastructure over which to provide his service. The company avoids substantial investments and can enter the retail market in question as a newcomer without significant access barriers. This particularly applies if effective obligations are in place on market 3b. There is a greater need for investment in place if obligations are only imposed on market 3a, which very few electronic communications companies or possible new entrants in this country could handle. Against this there is the fact that such 3b access is most often standardised and "mass-market". The company thus has limited possibilities to differentiate itself on the basis of special technical solutions or quality criteria.

3.2 Evaluation of competitive status on related retail market for broadband access (Internet service)

272. The first step towards defining wholesale markets 3a or 3b is to evaluate the competitive status on a related retail market or retail markets, see paragraph 7 of Article 44 of the Electronic Communications Act no. 70/2022. In this instance, a retail market for broadband access (Internet service). *In paragraph 3 of Article 2 of the Regulation on market analysis in the field of electronic communications no. 556/2023, it states that if competition is considered to be active on the relevant retail market and/or a specific geographic part of that market, without obligations on a related wholesale market, obligations shall not be imposed on undertakings on that retail market, nor on related wholesale markets and nor should obligations that have already been imposed be maintained."*

273. As previously stated, one option could be to analyse a special bundle market where Internet service is among service items, but in the opinion of ECOI, this would not change the conclusion of the analysis, and for this reason the Administration did not embark on analysing this aspect in this analysis.

274. In the ESA Guidelines on significant market power of 16 November 2022, it is stated that the starting point for each analysis shall be assessment of the relevant retail market, taking into account demand-side and supply-side substitutability from the end user's perspective, based on the available status assessment and likely development of market conditions over the period of validity of the analysis. After the relevant retail market has been defined, having taken into account the relevant service market and geographic market and

the competitive status assessed on that or those markets, and if the NRA comes to the conclusion that a lack of competition could damage the interests of consumers if wholesale obligations are not in place (the modified greenfield approach) on that market or a specific geographic part of the market, the NRA shall define the underlying wholesale market or markets and assess whether there could be reason to designate one or more undertakings as having significant market power and impose obligations on that or those undertakings on that or those markets or on specific geographical parts of the market[62].

275. In the following subsections there is discussion on varying options for Internet access and data transfer for end users and an assessment is made as to whether they all belong to the same service market at retail level.

3.2.1 Varying access technology in broadband access (Internet service) at retail level

276. End users can access Internet service in a number of ways. During the last two decades, there have been many types of service which have in common the function of providing end users with access to the Internet. During the first years of the Internet, end users used dial-up connections and ISDN connections over the copper network, whose data carrying capacity would be considered very small today, and hardly capable of maintaining what one would call usable Internet service given current user needs. These types of service are no longer on offer to users in this country.

277. After the dial-up connections and ISDN came xDSL technology or digital user lines over the copper network. This is a technology which sends a signal along a copper local loop at another frequency than that used for the telephone service signal. The first version of the service was ADSL, which could provide up to 8 Mb/s to the end user and 1 Mb/s from the user. After this, there came several generations of ADSL, i.e. ADSL2 and ADSL2+ which can supply up to 24 Mb/s capacity to users. At the end of 2022, the proportion of ADSL connections had dropped only 5.4% of all copper connections. A more powerful technology on copper networks, VDSL, came onto the market later and this technology can provide up to 50 Mb/s speed to users and 25 Mb/s from users and up to 100 Mb/s to users with error correction or so-called vectoring. The Mila copper system has this topology at most locations today. In order to further increase speed, some electronic communications undertakings abroad have adopted next-generation xDSL solutions which are called G.fast, but Mila did not take this route but has rather placed the main emphasis on fibre roll-out from and including 2016. In theory, xDSL connections can have a download speed in the range of 2-1000 Mb/s. It is most common in Iceland to use a VDSL connection that provides 50 Mb/s to and 25 Mb/s from the user, which can be doubled if vectoring is used on the connection, and Mila uses such technology on a significant proportion of the undertaking's VDSL connections as stated above.

278. Access networks, based on fibre has become increasingly more common and have achieved wide distribution. In this country were at the end of 2022 they reached more than 90% of households and companies. Today, such networks can return up to 1 Gb/s speed both to and from the end user, and subsequently, more with upgrades, if required. On 22 August

[62] Guidelines page 6-11. See also Article 8 of the Regulation on market analysis in the field of electronic communications no. 556/2023.

2023, Mila, announced its plans to adopt an XGS-PON solution which could offer 10 Gb/s symmetric performance and to open service on 1 October 2023 in the Capital City Area, but such that 10 Gb/s would initially only be on offer in the Múli telephone exchange area, and 2.5 Gb/s elsewhere in the area. The whole Capital City Area would then be upgraded to 10 Gb/s performance by 1 April 2024. The XGS-PON service would also be offered in Akureyri in early 2024. Ljósleiðarinn then announced on 13 September 2023, its plans to offer an upgrade to 10 Gb/s service across its whole operational territory from and including 1 October 2023.

279. In the EU Commission Explanatory Note to the Recommendations on the relevant markets from 2014, on which the ESA Recommendation on the relevant market from 2016 are based, the Commission mentions a number of varying ways to receive broadband access at a fixed location through threads. There it mentions technical solutions based on copper network, such as ADSL, ADSL2, ADSL2+, VDSL, fibre network and cable systems. It is also mentioned that satellite systems and wireless terrestrial TV broadcasting systems can carry data transfer service and can provide access to the Internet. It is also mentioned that wireless solutions, such as Wi-Fi WiMax and mobile phone network services can be considered as substitute services for connecting through threads.

280. Internet connections provided at a fixed location are on offer in Iceland through ADSL2+, VDSL2 and fibre. Internet connections through TV cable systems have only been on offer in exceptional circumstances, as such networks have never achieved wide distribution and have almost entirely been replaced by TV supply through xDSL and fibre. Such a cable system is only on offer in Reykjanesbær from a company called Kapalvæðing and there are fewer than [...] such connections in use in one district in Reykjanesbær. Nor are there examples in this country of Internet being provided through a wireless TV distribution system and satellite connections are hardly used at all for Internet connections to general end users.

281. ECOI considers there to be no need to specifically discuss Internet connections through cable systems, as such service is not on offer in this country except to a very limited degree, but they do however, in the opinion of ECOI, belong to the relevant retail market as the price is similar to the price for Internet connections over the VDSL system, fibre and mobile networks, and their performance is quite good.

282. In section 3.1.1 here above, there is detailed discussion on mobile networks and reference is made to that discussion, and there will be more discussion on this element here below.

283. Internet connections through satellite are very little used currently but it is not inconceivable that there could be changes in this during the validity of this analysis.

284. For a certain period of time, universal service connections to a very small number of households in sparsely populated areas were resolved with satellite connections. These were locations where it was considered particularly expensive to provide a connection. Older generation satellite connections were used and were not considered to have achieved good results. The households in question have now been connected in another manner, and there are no satellite connections in use in universal service supply in this country today.

285. Satellites located at the equator (GSO) can offer very powerful connections, but because of the distance to the satellites, which are at 36,000 km altitude, there are significant signal delays. Connections through such satellites are extremely expensive. Nor is there any guarantee that signals from such satellites will reach all locations in the country because of its global position.

286. A new satellite service that is more suited to the general user is now on the market. The companies Starlink and Oneweb have begun to offer connections through low earth orbit satellite swarms (LEO constellation), which should allow global coverage. More companies have announced plans to operate such systems. The advantage of these systems is among other things that their connections are less expensive than in the traditional GSO systems. The potential maximum speed of these systems based on the current level of technology is about 200 Mb/s download and significantly less for upload. In general, the public is not offered higher speed than 100 Mb/s download and about 20 Mb/s upload. This speed can be reduced if many users are accessing the same satellite at the same time. One can purchase corporate solutions with guaranteed bandwidth, but the price is then very high.

287. LEO satellite system does not have 100% uptime. The connection moves from one satellite to another, as the satellites are moving continuously related to the reception location, unlike GSO satellites. This can cause minor interruptions in connection. Uptime can thus be 99% but does not reach 100%. Some systems of this type have not yet launched all planned satellites into orbit, which can lead to even lower uptime, while this remains the case.

288. Although the pricing of connections in LEO systems is lower than in GSO systems, the cost to consumers has been much higher than common practice in wired connections or mobile network connections in this country. The least expensive option, as far as can be ascertained is the Starlink residential subscription. Subscriptions are now on offer on the Starlink website at ISK 9,259 per month. A subscriber does on the other hand, need to invest in endpoint equipment where the least expensive type costs ISK 78,500. A user who purchases such equipment has to install an external aerial and lay cable into the building. Though the monthly charge for the service is now competitive, one can imagine that start-up costs are a barrier. In addition to this, consumers are generally not aware of the quality level of the service, and as previously stated, this depends to some extent on there being a sufficient number of satellites in place over the area in question. Starlink has not marketed the service actively in this country, but one can find information and purchase a subscription on the website starlink.com. ECOI is not aware of Icelandic homes having purchased the service up to this point in time.

289. ECOI considers that substitutability on the retail market between wired connections over fibre or over a copper network supporting VDSL technology on the one hand and satellite on the other does not exist in this country. The main reason for this is pricing, and in particular a high start-up cost. ECOI considers it necessary to carefully monitor developments with those companies that are developing a service offer to end users, such as Starlink.

290. With regards to possible substitutability between connections over wired networks (copper network supporting VDSL, fibre and cable system), and connections over mobile networks where routers are used will be discussed in section 3.2.4 here below.

3.2.2 Wired Internet connections over copper, fibre- and cable systems

3.2.2.1 Substitutability on the basis of usage, capacity and marketing of connections

291. ECOI considers services through access systems based on VDSL over copper lines, fibre and cable systems to be part of the same retail markets because of the chain of substitution and that they should be examined in connection with analysis of wholesale markets 3a and 3b. It is however necessary to consider whether there is sufficient substitutability between services on these three types of networks for them to be considered to belong to the same retail market.

292. From the point of view of consumers, the most important issue is the usefulness of the service, rather than the technology being used to transmit it to the consumer. In the early days of the Internet, Internet connections were used to send emails and to browse Internet pages, which often did not make great demands on download speed to the user. The use of the Internet has steadily increased, and new services have appeared, many of which make great demands on bandwidth. People carry out a great number of tasks on the Internet today that were previously conducted in another manner, such as banking service and various kinds of purchases. There is also a large volume of visual content and music being distributed through various kinds of streaming providers. An increasing number of users receive their TV service through the Internet, i.e. linear, time shift and video on demand (VOD), services that require high and reliable transmission capacity, particularly for high-definition visual content. Working from home and remote meetings have also increased significantly in recent years because of and subsequent to Covid 19.

293. What are called cloud services are seeing rapid growth, services that are such that the user needs access to applications and data on the Internet and uploads data from his endpoint device via the Internet to a remote storage facility.

294. Another factor that calls for increased bandwidth on Internet connections is the increase in Internet connected devices in homes. Various kinds of computers and personal communications devices have increased very significantly, and there has also been an increased incidence of domestic appliances being connected to the Internet, making it possible to control them remotely and to update the software.

295. It is difficult to specify with any certainty the bandwidth needed by a family which has average use of the above specified services. The extent to which users use Internet-dependent services doubtless varies somewhat. The fastest connections on the market are only necessary in homes where there are many users using services that require much bandwidth, such as 4K streaming TV. Many users manage with less speed and even a 12 Mb/s ADSL connection enables receiving TV service at the same time as an Internet connection, and on a common 50-100 Mb/s VDSL connection which in addition carries IPTV service on a separate virtual network, one can watch two, even three televisions in full high-definition (FullHD) on an IPTV connection, watch a streaming service such as Netflix or Youtube in super definition (4K) through a standard Internet connection in parallel with social media usage and other Internet usage on smart devices or home computers and enjoy music streaming or other streaming services.

296. Though there is a difference in carrying capacity between varying generations of access networks, this does not necessarily mean that they do not belong to the same market. Among the things that have to be taken into consideration is demand for varying technical solutions, pricing and how users are likely to behave if the price increases on one transmission channel, while remaining unchanged on one or more other channels.

297. In this country, xDSL connections of varying capacity are on offer on a copper network. The capacity of connections that can be offered appears to be determined by circumstances in each individual area. The distance from a telephone exchange and the quality of local loops are deciding factors as to whether ADSL or VDSL is being offered. In this country, ADSL has been in a major and rapid decline in recent years and at the end of 2022 there were more than 93% of the Internet connections over copper through VDSL. Electronic communication companies offer in almost all instances, the fastest connection possible at the location in question, and they do not offer varying subscriptions where a distinction is made between subscriptions on the basis of speed. The difference between subscriptions with the same service provider in Internet connections is in the amount of data download allowed per month and not in the speed of the connections. In recent times, there has been an increase in subscriptions that include unlimited data volume, both on fixed line networks and mobile networks. Pricing of various xDSL solutions and Internet connections over fibre, mobile networks and cable systems is generally the same or very similar, while previously, Internet connections over mobile phones were much more expensive than those over fixed line networks.

298. A service that provides varying data carrying capacity can belong to the same market. It is clear that connections with greater speed can be substitute services for connections with less speed, but whether there is substitutability in the other direction can be uncertain. It is not however unknown that in recent years, consumers have switched from a fibre system to the VDSL system, among other things because of Siminn's popular TV content, which was not offered on the Ljósleiðarinn fibre network until autumn 2021. Connections with the lowest speed can be adequate for users who do not use many demanding services, such as TV and streaming providers, and they have little incentive to switch to more bandwidth. Such users who have fibre connections can even have a tendency to move back to xDSL connections if the price of fibre increases appreciably. Other users may need or at least be interested in connections with more bandwidth and in those instances, it is not as clear that users would consider switching from fibre to xDSL if the price of fibre connections increased.

299. It must be kept in mind that in this country there is normally a reasonably powerful xDSL service on offer. The smallest bandwidth on offer on a copper network is 12Mb/s on ADSL2+ connections, which can however be impaired if the line is long, and if the line is very long it cannot carry any xDSL service. An impaired connection can up to a point, carry TV service. Most copper line connections, about 93%, are however, on 50 or 100 Mb/s VDSL connections, as Mila quickly distributed VDSL connections across the whole Capital City Area and then across the whole country to countryside urban clusters during the period 2011-2015. At the end of 2022, ADSL connections were only 1.3% of the total number of bitstream connections in this country. Fibre-optic connections on offer in this country usually have up to 1Gb/s speed. On 22 August 2023, Mila, announced its plans to adopt an XGS-PON solution which can offer 10 Gb/s symmetric performance and opened service on 1 October 2023 in the Capital City Area, but such that 10 Gb/s would only be on offer in the Múli telephone

exchange area, and 2.5 Gb/s elsewhere in the area. The whole Capital City Area would then be upgraded to 10 Gb/s performance by 1 April 2024 and the service would be on offer in Akureyri early in 2024. In its presentation, Mila emphasised that XGS-PON connections were aimed at the most demanding users, those that use by far the biggest data volume. It must be considered unlikely that a significant proportion of users need such performance that XGS-PON can offer, during the lifetime of the analysis. ECOI therefore considers the Mila innovation to be within the chain of substitution that was previously described. ECOI considers the same to apply to the newly announced Ljósleiðarinn plans to offer customers an upgrade from one Gb/s to 10 Gb/s on its P2P network system from and including 1 October 2023. Such an upgrade will be available over the whole Ljósleiðarinn network. There are very few connections through cable systems in Iceland, only in one district in one municipality of 64, i.e. Reykjanesbær. Speed is up to 500 Mb/s.

300. Mila website states among other things, that the download speed offered by Mila on Ljósnet (VDSL) is up to 50-100 Mb/s and that it is possible to have up to five set-top boxes for TV service, and adequate speed for "all household use". Mila maintained in its advertisements in the last analysis of the relevant market, that there is no longer substitutability between copper and fibre connections. This does not correspond with the company's marketing or that of Siminn, nor with the company's assertions or those of Siminn to other authorities. In its comments in the Ministry for transport and local government green paper on electronic communications, dated 11 August 2021, it was stated by Mila that although analysis indicated that about 13,000 addresses in the country did not have fibre, this did not mean that these households did not have usable Internet. By far the largest proportion of these households had access to 50 Mb/s Internet connections, which in most European countries actually considered quite a good speed. For normal household use these connections were adequate and no service on the Internet was on the horizon in the near future that required greater speed.

301. When assessing whether all the technical solutions and newer solutions with greater bandwidth belong to the same market one has to take into account the size of the gap between service types of varying generations. In the Explanatory Note to the EU Commission SMP Guidelines from 2018[63] on which the current ESA SMP Guidelines from 16 November 2022 are based on, there is discussion on what is called a chain of substitution which means that products or services can be deemed to belong to the same markets even where there is no direct substitution between them, if there are other products or services which have substitution for both of them[64].

302. There is also discussion on what is called asymmetric substitution, which is common on markets for electronic communications service where a new technical solution can be a substitute service for older solutions as it offers all the advantages of the older one. It is on the other hand however not certain that older technical solutions are in all instances a substitute services for the new solution, as the new one has more possibilities for use and greater performance. For this reason, varying generations of technical solutions in electronic communications have for example been considered to belong to the same markets, e.g., 2G, 3G, 4G/4.5G and 5G mobile phone services, as the basic purpose of the service is the same

[63] SMP Guidelines, page 7.

[64] See paragraphs 43-45 in the above specified ESA SMP Guidelines.

even though the newer generations offer greater quality and performance. Normally, when NRAs within the EEA define broadband services there is not deemed to be such a fundamental difference between newer and older service types on copper, cable and fibre networks to deem there be a break in the chain of substitution. For it to be deemed that there is a break in the chain there needs to be a clearly unbridged break in the chain, e.g. where only very low performance connections on a copper network, e.g., ADSL, were being offered on the one hand on the other hand, fast fibre connections.[65]

303. In Article 9 of the Regulation on market analysis in the field of electronic communications no. 556/2023 there is discussion on chain of substitution, where the provision is worded as follows:

> *"It is possible to extend the boundaries of the relevant product and service market, such that it covers a product or service or area that would reasonably be considered to be part of the relevant market, taking into account chain of substitution, even where there is no direct substitutability between the product/service or area. A chain of substitution can exist even when there is no direct substitutability between product A and C, but where products B provides both product A and C with direct substitutability. In this way, products A and C can belong to the same market when product B has an impact on the price of them both.*
>
> *The same applies with respect to geographic definition. A chain of substitution can exist when an electronic communication undertaking that provides service across the whole country has an impact on the price of local electronic communications undertakings that for example provides local service over their own fibre networks.*
>
> *Having in mind the risk inherent in abnormally increasing the scope of the relevant market, Electronic Communications Office of Iceland shall provide adequate grounds for the conclusion on chain of substitution. The internal impact on price at the extremities of the chain of substitution shall be demonstrated with data. The scope of substitutability between the relevant product/service or geographic area shall be significant.*
>
> *As the price for current technical generations can exercise constraints on the price for future technical generations it is likely that a chain of substitution exists, which can justify the categorisation of all technical generations under the same product/service market. Where such constraint on price normally exists for varying technical generations, they are generally categorised under the same market. When most*

[65] In market analysis from December 2019 from the Swedish electronic communications NRA, the PTS, the conclusion was reached that there was no longer substitution between connections on a copper network and fibre connections. In that country there are few VDSL connections and there is therefore a very significant imbalance between the performance of copper networks based on ADSL on the one hand fibre on the other. The EU Commission did however exercise its veto on that market analysis of market 3a in February 2020. The Commission made however no comments on that part of the analysis but rather on the geographic analysis. Sweden was the first country within the EEA that had come to this conclusion. The Danish NRA, DBA, also came to the conclusion in 2021 that there was no longer substitutability between connections over copper on the one hand fibre and cable on the other. ECOI considers it clear that quality and capacity of copper connections in Iceland are greater than those of such connections in Denmark, and in addition to this, pricing and marketing vary between these categories of connections in Denmark, which is not the case in this country.

consumers have switched to higher performing electronic communications infrastructure, there can be a group of users that still use legacy technology. Electronic Communications Office of Iceland should endeavour to inhibit such development by refraining from defining overly narrow markets."

304. One could say that in this country there has been a regular progression from one type of service on offer on fixed line networks to the next, in comparison to some other countries. The connections on offer have been ADSL, VDSL+, ADSL2, ADSL2+, G.SHDSL, VDSL and fibre to the home. The vast majority of Internet connections over fixed line network are however over fibre (82%) or VDSL (17%). In this country there are also cable connections on offer to a very limited degree in one municipality, i.e. Reykjanesbær.

305. In its market analysis on the relevant markets, which concluded with the ECOI Decision no. 5/2021, ECOI came to the conclusion that a chain of substitution had been in place between copper connections over ADSL, G.SHDSL and VDSL, fibre connections and connections over cable systems at retail level. ECOI considers that VDSL still provides substitutability for fibre connections and connections over cable at retail level and will continue to do so during the lifetime of this analysis. On the other hand, ECOI considers that connections over ADSL and G.SHDSL hardly do this any longer, and certainly not when one looks forward to the end of the lifetime of this analysis. Limited capacity can no longer meet the needs of normal households or compete at the technical level with connections through VDSL on copper, fibre and cable systems.

306. In the light of the fact that ADSL and G.SDHSL services are negligible in this country, i.e. at just over 1% of the total number of connections and on a steady decline, ECOI considers there to be no need to particularly analyse a separate market for such connections and assess their competitive situation on that market, or designate a party as having significant market power on this market and thus impose obligations on such a party.

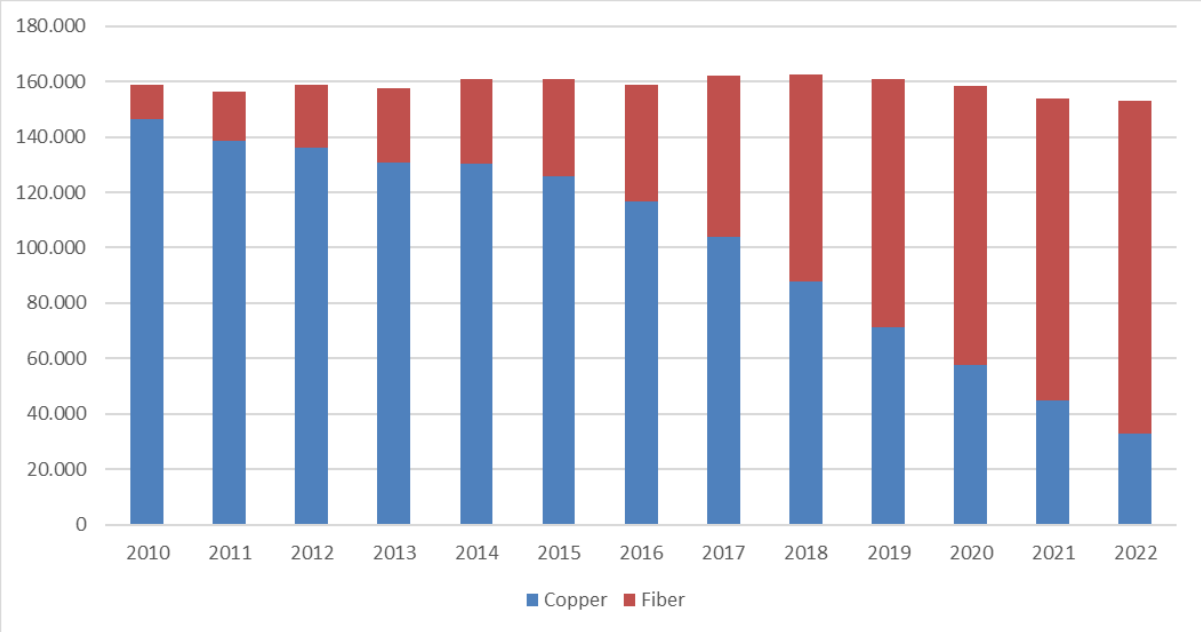
307. In the opinion of ECOI, there is a chain of substitution between VDSL connections over copper, fibre- and cable systems at retail level in this country that will be the case throughout the lifetime of this analysis, as is argued in more detail here below. Towards the end of the lifetime or shortly before, copper connections will be a thing of the past. In section 3.2.4 there will be discussion on whether Internet connections over mobile networks can be part of the substitutability in question and, if that is the case, then on which kind of mobile network connections.

3.2.2.2 Statistical information on copper and fibre networks

308. ECOI has examined statistical information on the coverage of copper and fibre networks, number of users on such networks and user migration between them. The objective of such an examination is among other things, to assess the extent to which users rather choose fibre than copper, whether users switching is only one direction between these networks and the likelihood of how these networks will develop during the period of validity of this analysis This could give indications about whether users perceive copper networks as substitute service for fibre and whether copper networks will still provide fibre networks competitive constraint to an adequate degree throughout the lifetime of the analysis, and if so, then which copper networks, i.e. both ADSL and VDSL, or only VDSL.

309. It is clear that copper local loops in use have decreased significantly in recent years. There were 114,000 at the end of 2016, 58,000 at the end of 2020 and 33,000 at the end of 2022, including 24,000 used for VDSL and just under 2,000 for ADSL, and about 7,000 that were not used for Internet service.[66] At the same time, fibre connections have increased at a steady pace. Fibre local loops in use were about 35,000 at end of year 2016; they were something over 101,000 at end of year 2020 and, where nearly 121,000 at end of year 2022. At end of year 2022 there were only about [...] cable connections in use in this country, and that only in one district in one municipality, i.e. in Reykjanesbær. In the light of negligible impact of such connections in the big picture, such connections will not be specifically discussed in this subsection. Figure 3.25 shows development in number of local loops of each type in lease during the last 13 years.

Figure 3.25 Development in number of copper and fibre local loops in use 2010- 2022



Source: ECOI

310. In addition to the fact that a proportion of households make do with mobile network connections for home Internet use, the decrease in local loops in recent years can in some instances be attributed to decommissioned copper local loops that were used for service that is not being used any more or has been moved to connections not considered to be normal local loops. These could be elevator telephones, households that no longer use a home phone and only use a mobile phone, and also leased lines of a traditional type that are provided over local loops, what are called four wire lines. Such a connection, if it is used between two places of use, then requires four local loops and could today be provided over "Ljóslína" which is not considered to be a local loop in the understanding that now applies, but rather belongs to market 4.

[66] Of these 58,000 copper connections in use at the end of 2020, just over 43,000 were used for xDSL while about 15,000 were not used for Internet service. At the end of 2022, copper connections that were not used for xDSL had decreased significantly and were only about 7,000.

311. Not all fibre local loops that are deployed are taken into use immediately. Mila had for example, according to its own estimate, deployed about 120,000 fibre local loops at the end of 2022 and just over [...] in use which is about [...]% usage. Ljósleiðarinn also had about 120.000 local loops at the end of 2022, of which almost [...] were active, which is just over [...]%. Tengir fibre local loops were about 14,000 at end of year 2022 with just about [...] in use which is about [...]%. One could also mention 1500 fibre local loops deployed by Snerpa in the West Fjords. It varies somewhat between areas how much usage there is of fibre in general and by individual network operators, and this can among other things be affected by whether there is another fibre network available in the area, whether VDSL is offered in the area or connections with less capacity, such as ADSL, and the manner in which marketing is handled. In figure 3.25 here above, one can clearly see that the number of connected fibre local loops increased rapidly after Mila commenced its fibre roll-out in earnest in 2016. It is clear from the figure that the number of fibre local loops is at the cost of copper local loops and that the increase is greater after Mila commenced its fibre roll-out in earnest in 2016.

312. Deployment plans for fibre local loops vary in their clarity and ambition between the largest network operators for the coming years, and ECOI requested updated information from them in the autumn of 2022. Ljósleiðarinn could for example not at that time, provide the requested information as there was a state of considerable uncertainty about the company plans, as the company intended to take two threads in the NATO cable into use in the near future, and in addition to this there was a planned increase in share capital and the company agreement with Sýn on the purchase of that undertaking's trunk line network was under review at the CA were that authority's opinion could be delayed until the end of August 2023 or even longer. The purchase finally went through after the CA endorsement on 29 September 2023. However, the conclusion regarding the increase in capital share is not expected until the summer of 2024. The other companies could only provide information on plans until the end of 2024-2025, and not until the estimated end of the lifetime of the analysis in 2028. In May 2023, ECOI repeated its query to Ljósleiðarinn regarding distribution plans for the coming years. A reply was received from Ljósleiðarinn on 8 June 2023 where it was reiterated that the undertaking found it difficult to form and provide its distribution plans for the coming years because of the above specified uncertainty.

313. Mila has been involved in substantial fibre roll-out since 2016, which is still ongoing, and will continue this deployment in earnest in the coming years. In 2023, Mila allowed for an increase in its fibre local loops of about [...], by about [...] in 2024 and by about [...] in 2025. ECOI therefore estimates that Mila fibre local loops could increase by about [...] from the end of 2022 until the end of 2025, and significantly more than that until the estimated end of the lifetime of the analysis in 2028. Estimated Mila fibre roll-out will cover both the Capital City Area and the countryside. At end of year 2022, Mila had deployed fibre to [...]% of homes and companies in the Capital City Area (Reykjavík, Seltjarnarnes, Mosfellsbær, Kópavogur, Garðabær and Hafnarfjörður).

314. Ljósleiðarinn fibre local loops reached about 120,000 households and companies at end of year 2022. As previously stated, Ljósleiðarinn could not provide ECOI with precise distribution plans, neither at the turn of the year 2022/2023, nor in its reply dated 8 June 2023. In the above specified reply, Ljósleiðarinn stated:

[...]

315. Ljósleiðarinn has slowly but surely deployed fibre local loops in the Capital City Area and widely elsewhere in Southwest part of the country for about 20 years. During the past 3 years, this undertaking has deployed something in the range of [...] new fibre local loops each year. As stated above, the undertaking has not submitted precise deployment plans to ECOI. As Ljósleiðarinn has deployed fibre local loops to most of the Capital City Area, and is at an advanced stage of deployment in other urban locations in Southwest Iceland, and because of the uncertainty that pertains about the undertaking's plans outside its current operational territory, ECOI assumes that deployment will be about [...] connections per annum during the period 2023-2025, but it is difficult to make projections further into the future.

316. Tengir intends to increase local loops by about [...] per annum until end of year 2025. One can expect that Snerpa local loops will increase by something over [...] in 2023 and by about [...] in 2024, first and foremost in Ísafjarðarbær and in Bolungarvík municipality, and to small degree in Súðavíkurhreppur. Eygló in the Westman Islands has commenced deployment of fibre in the municipality and plans to complete this at the end of 2025, where in total there are something over 2,000 connections. One can therefore expect that the fibre local loops of municipalities in the final phase of Iceland Digitally Connected will increase by a number of tens in the year 2023 and that the project will be formally closed with a deployment of 6,300 fibre local loops in the most rural areas, a project that started in 2016. It seems that Austurljós, which has deployed some hundreds of fibre local loops at Egilsstaðir in the Múlaþing municipality, does not have plans for further development, as Mila has deployed fibre to a large extent at Egilsstaðir and has commenced deployment of fibre in most villages in East Iceland.

317. One can expect that most of the effort in fibre deployment in Iceland will be until the end of 2025 and that it will slow down in the second part of the lifetime of this analysis, as distribution should then have become well over 90% at a national level at the end of 2025, even around 95%. All new buildings are fibre connected, and one can expect an increase of spaces of about 3,000 per annum for this reason. With the above in mind, ECOI considers that fibre local loops can increase by about 15,000 in 2023, by 11,000 in 2024 and by 10,000 in 2025 which gives a total of 36,000 connections, representing an increase of 21,000 connections in excess of natural increase, as more than one undertaking is deploying in new build districts. As stated above, none of the undertakings could issue deployment plans further into the future than to the end of 2025. In the latter part of the estimated lifetime of the analysis, i.e., during the period 2026-2028, ECOI on the other hand, allows for deployment of fibre local loops being much slower than in the years 2023-2025, but somewhat in excess of natural increase. The most important factor here is that the country's fibre roll-out will be very well advanced, and Mila should be at a very advanced stage of full deployment in the Capital City Area. ECOI expects that the annual increase in the years 2025-2028 could be about 6000, which is 1000-2000 in excess of natural increase, when one takes into account that more than one company is deploying in the same new build districts. At the end of 2028, the countries fibre deployment should be approaching 100%.

318. One could assume that only part of this increase in fibre local loops will be in areas where there are no fibre connections already in place, as a significant part of this will be the second fibre network in the relevant area, particularly in the case of Mila, and also to some extent with other network operators. This increase will therefore not necessarily, in the opinion of the ECOI, lead to a corresponding speed of reduction in the number of copper local

loops in use. Most of the effort in Mila decommissioning of the copper network will, according to newest information from the undertaking, be in the years 2027 and 2028, and Mila states that it does not intend to decommission the copper system before fibre has been deployed to the area in question. Having taken into account average use of fibre and plans of undertakings for deployment as specified here above, ECOI calculates from this information that copper local loops in use will be in the range of 14,000-15,000 thousand at the end of 2025. At the end of 2025, about 9-10% of local loops in use would then be copper[67]. The copper system should then finally be decommissioned at the end of 2028, should Mila plans be realised. It is however not possible to exclude the possibility that this could be delayed to some extent.

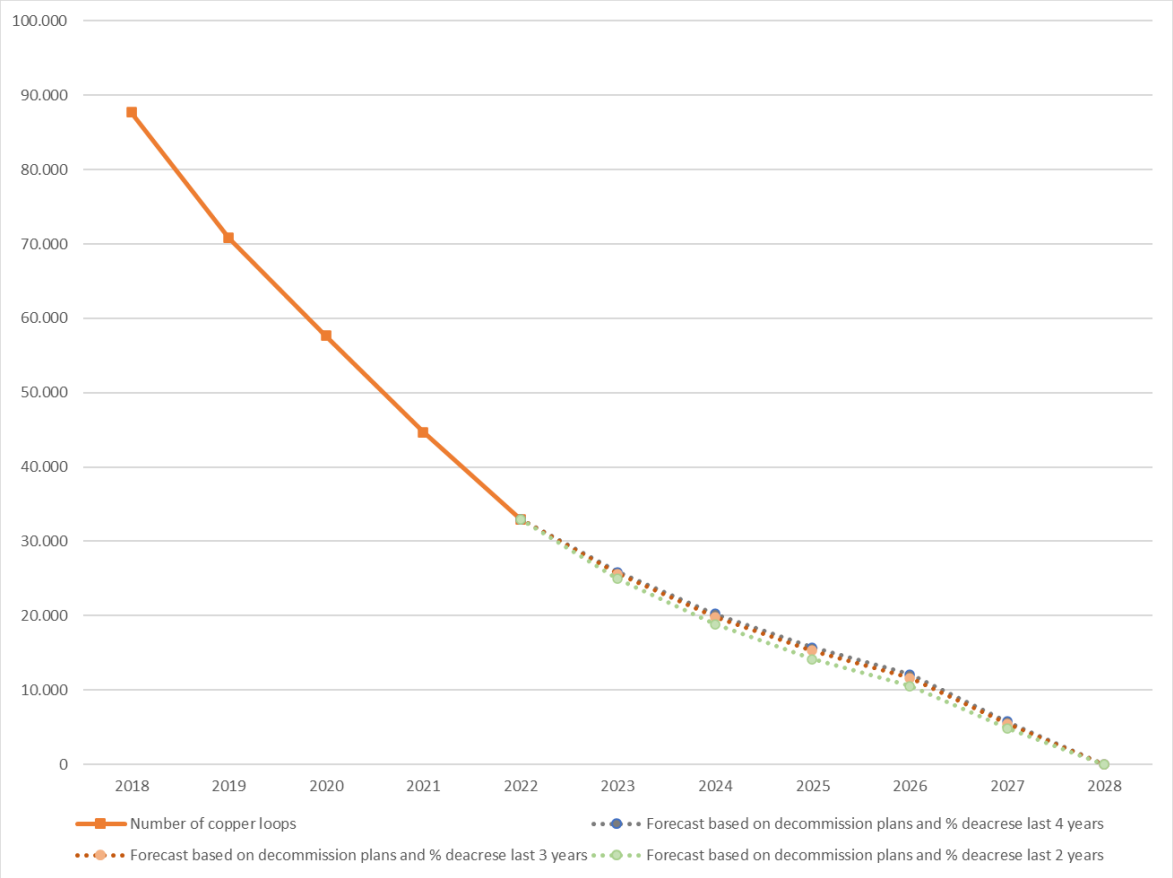
319. Mila intends to decommission copper local loops in phases such that copper local loops will be completely decommissioned at the end of 2028. If one examines the reduction in copper local loops in use in recent years and Mila plans for decommissioning, one could estimate that the number of copper local loops in use at the end of 2025 will be in the range of 14,000 to 16,000 (See figure 3.26) which is a similar conclusion as here above, when the approach was based on the fibre deployment and its usage copper local loops would then be 9-11% of the total number of local loops in use, while at the end of 2022 they were 21%. This projection is however subject to various uncertain factors. ECOI considers it likely that the increase will be somewhat slower in 2023-2026 than in the years 2027-2028, among other things because of the way in which Mila decommissioning plans are structured. Fibre-optic deployment remains to be implemented for those areas or districts where it is least profitable to deploy fibre. Those areas where fibre has been deployed on commercial terms in recent years, are the most densely populated areas that have most inhabitants per address. The areas that remain have few multiple dwelling buildings, as applies to many urban nuclei in the countryside, and are thus significantly less economically feasible for deployment of fibre networks. Mila has for example not deployed fibre to all districts in the Capital City Area that are characterised mainly by detached dwellings.

320. ECOI furthermore considers that state aid for development in the countryside will not have a deciding impact on the total number of copper local loops until the end of 2025, as the project Iceland Digitally Connected ends in 2023, when the last tens of local loops according to the plan will be installed. This could however change if the Telecommunications Fund decides to support further fibre deployment in the countryside, among other things in villages where fibre deployment has not commenced or is in the early stages. Clear plans about such development have however not been made public. Government policy with respect to access for urban nuclei and urban areas to fibre local loops, is reflected however to some extent in the objectives of the electronic communications plan 2024-2028, which were described in section 1.2.3 here above and where it is stated among other things that the authorities wish to see at least 80% of residences and undertakings in all urban nuclei and urban areas with access to a fibre connection before the end of 2028. It is however not inconceivable that there will be further state aid in the years 2024-2028 to ensure that this objective will be achieved,

[67] Based on number of local loops at end of year 2022. It is difficult to make a projection on the increase of local loops as they have rather decreased rather than increased in recent years. The explanation for this could be increased use of mobile networks, but there is also the fact that copper local loops that are not used for bitstream have decreased significantly.

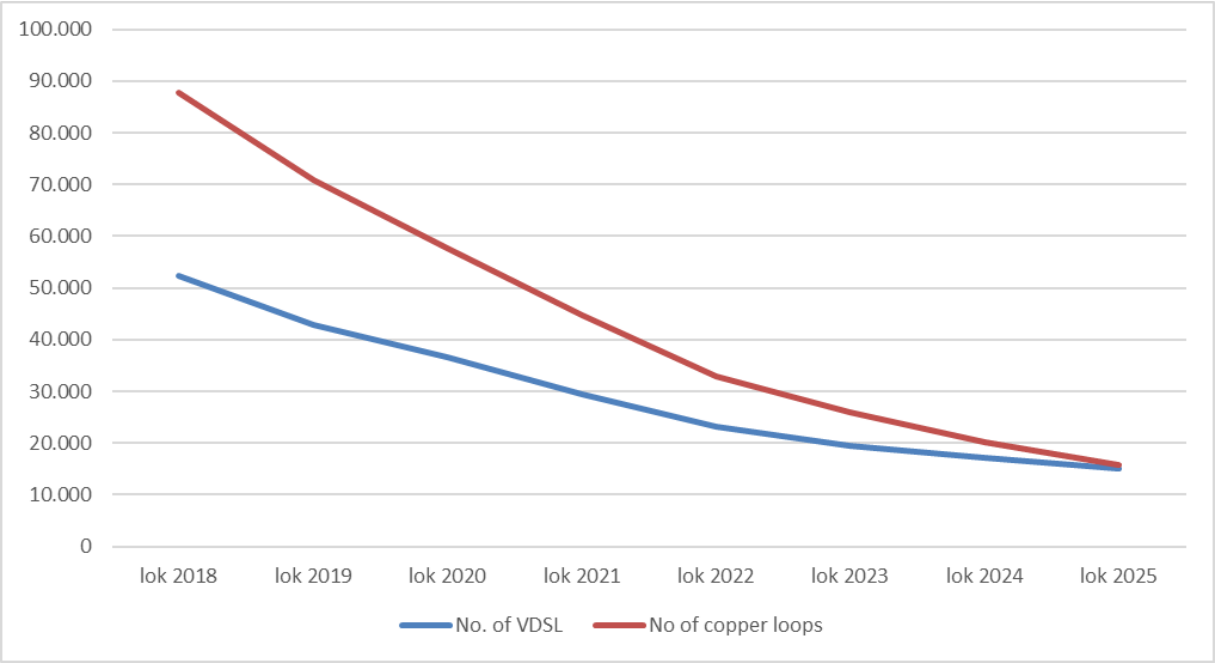
though reliance will however be placed first and foremost on private enterprise of electronic communications undertakings, even on their cooperation, in this connection.

Figure 3.26 Possible development in number of copper local loops to end of year 2028



321. Leased local loops are not all used to provide Internet connection. If one only examines Internet subscriptions, the proportion of xDSL connections is lower than the proportion of total copper local loops. At the end of 2022, xDSL connections were 18% of all Internet connections, and if one only considers VDSL connections against fibre connections, the proportion is 16%, while at the same time the proportion of copper local loops of local loops in use was about 21% and 15% of all local loops were used for VDSL connection. If the decrease in xDSL connections continues from the end of 2022 until the end of 2025, as is forecasted in figure 3.27 below, then the number of xDSL connections will be just under 15,000 at the end of 2025. This is about 10% of all Internet connections on fixed lines, given that the total number of Internet connections on fixed lines increases linearly by a similar number as growth has been since the end of 2020 until the end of 2022. If one only considers VDSL connections as a proportion of Internet connections on fixed lines, one can assume that the proportion will be somewhere around 10% of all such Internet connections at the end of 2025.

Figure 3.27 Possible development in number of VDSL connections until the end of 2025 given the projection on number of copper connections



Source: ECOI

322. In this projection it is assumed that after 2025 there will be no copper connections without VDSL service, i.e. all older technology will have been decommissioned.

323. ECOI considers that the above specified statistics show that there is an overwhelming likelihood that xDSL connections, first and foremost VDSL connections, will represent a considerable part of the retail market throughout the year 2025, and will become insignificant towards the end of the estimated period of validity of this analysis in 2028.

324. Mila has declared that the company plans to phase out its copper network until the end of 2028. In Mila replies, dated 6 March 2023, to a query from ECOI dated 20 February 2023, the company plan for decommissioning copper until the end of 2028 is described. Mila states that it did or intend to inform its customers about this plan. It was stated that this was a plan that was subject to various external factors that could have an impact on how phasing-out will progress. On the basis of the plan, it is clear that there would not be much effort in the phasing out during the years 2023-2026, but that most of the effort would be in 2027 and 2028. [...]. With this information in mind, ECOI expects that during the lifetime of the analysis, Mila will first and foremost close copper connections where the company has already deployed fibre or ensured long-time control over fibre local loops. As previously stated, most effort in the decommissioning will be during the years 2027-2008, which is towards the end of the estimated period of validity of the analysis. It is not inconceivable these plans will be delayed to some extent as experience has for example shown with respect to the Siminn decommissioning of the PSTN system during the last years.

325. As stated here above it is not the case that users all hurry to switch to fibre the moment it is available. Figures on general use of fibre networks indicate that a proportion of users are not particularly interested in switching from xDSL, particularly VDSL connections. ECOI has

gathered data on the number of connections of each type in each individual municipality. Those figures show that even in areas where everyone has had access to fibre for a number of years, there is still a proportion of users on the xDSL network. An example of this is Seltjarnarnes. Despite the fact that it is 16 years since Ljósleiðarinn completed deployment of fibre in Seltjarnarnes and that Mila had commenced fibre roll-out to a considerable degree, there were still about [...]% connections there over copper at the end of 2022, and this figure was [...]% at the end of 2020. This is a small reduction over 2 years and demonstrates well that a significant number of users make do with a copper network connection, first and foremost over VDSL, despite the fact that they have had a fibre option for many years. One can find examples of this in many locations in the country, including Reykjavík, Kópavogur, Garðabær, Hafnarfjörður, Mosfellsbær, Akranes Hveragerði, to name but a few, and in these municipalities the copper connections in use, share was significant at the end of 2022, despite the fact that almost all users in these municipalities have the option of a fibre connection.

326. ECOI has gathered information from Ljósleiðarinn on users switching from the company's fibre network. These data show that the undertaking has lost [...]% of its total number of customers for each month, first and foremost, to Mila, and among other things over the Mila copper network, though, such examples have decreased since Siminn began business on the Ljósleiðarinn fibre network in August 2021.

327. ECOI considers that the above specified statistics on number of users that choose to remain with an xDSL connection despite fibre being on offer, and the figures for switching from the Ljósleiðarinn fibre network over to a copper network, clearly show that a considerable number of users consider xDSL, particularly VDSL connections to be an adequate substitute service for fibre connections. ECOI considers that all conclusions of statistical analysis in this section, and the conclusions of consumer surveys that will be dealt with in the next section, decidedly support the conclusion that copper (VDSL) and fibre connections belong to the same service market at retail level and that this will remain to be the case at the end of the period of validity of this analysis, even though copper connections will be very few towards the end of the analysis lifetime, or even be non-existent. The same can be said about cable connections, should they still be in existence at the end of the analysis lifetime. Sections 3.2.4 and 3.2.5 will then discuss whether mobile network connections belong to the same service market as copper and fibre at retail level. The relevant service market at wholesale level will then be discussed in section 4.

3.2.2.3 Consumer surveys on potential substitutability between Internet service over copper networks and fibre networks

328. After initial consultation on the preliminary draft to the analysis of markets 3a/b that ended with ECOI Decision no. 5/2021, ECOI decided to commission the company MMR (Markaðs - og miðlarannsóknir ehf.) to conduct a consumer survey, which could, among other things, give indications on whether there was still substitutability between copper and fibre connections at retail level. The consumer survey was conducted in the first half of October 2020, after draft questions had been submitted for consultation to electronic communications companies. ECOI received the MMR conclusions on 20 October 2020.

329. The project was commenced by writing a research question which described in a succinct manner, the answers the survey was intended to provide. The research question was as follows, where there is a progression from a general to specific question:

1. Does the general consumer make such a distinction between Internet service received through fibre on the one hand through Ljósnet (VDSL copper connection) on the other hand, that it is a deciding factor in the decision to purchase, i.e. whether there is substitutability between the connection options or not.

2. What are the deciding factors in the purchase of Internet service for home use.

3. Is performance (speed) of the connection a deciding factor in the decision to purchase.

330. In the light of the fact that advertised offers on the consumer market had first and foremost been differentiated with included data volume and where price was in most instances the same whether Internet service is transmitted through an electronic communications network based on copper or fibre, ECOI also considered it necessary to investigate user knowledge and awareness of which underlying electronic communications network was being used in the case of respondents. If the survey showed that consumers did not have much awareness about the underlying network, then in the opinion of ECOI this would be an indication that those networks were not important in their mind, which indicated that there was substitutability between copper and fibre.

331. ECOI also deemed it necessary to thoroughly investigate the factors in decision to purchase that decided the choice of service provider, and whether there was a difference in such decision factors that could be attributed to one type of network more than another, which would then indicate that there was less likelihood of substitutability being in place.

332. In order to be able to analyse the decision to purchase in as clear a manner as possible, respondents were specifically asked whether they had switched Internet service provider, recently and what factors had decided this decision to purchase. This decision was in all likelihood, sufficiently fresh in the minds of these consumers that they could better explain its reasons, rather than those consumers that had been with the same service provider for an extended period of time, who were asked about possible reasons for potential choice were they to choose a service provider at the time when the question was asked. If those consumers that had recently switched from copper connection to fibre responded with a significant difference in factors for decision to purchase, then this would indicate that it was less likely that there was substitutability between copper and fibre.

333. ECOI thought it likely that if TV service, and/or streaming and other such services that required significant bandwidth were significantly used to a greater degree by households with fibre connections, then this would be an indication that there was not substitutability between copper and fibre. For this reason, there were questions on such usage.

334. ECOI also considered it important to ask whether consumers experienced any problems in using their Internet service, e.g. when many streaming content items were being viewed at the same time or when playing network games, because of a lack of performance of the connections.

335. In order to be able to analyse answers using significant variables, ECOI considered it necessary to ask in a rather detailed manner about current Internet service, from which company it was received and the type of subscription.

336. The conclusions on questions on the company from which Internet service was received did not provide surprises, as ECOI collects similar data on a 1/2 yearly basis in its regular collection of statistical data. On the other hand, the replies with respect to other service that was purchased in a package with other service were interesting, as 71% of respondents answered that they purchased this in a subscription package. This was particularly common among Siminn customers, where 85% of them said they purchased Internet service as part of a package.

337. There were questions about individual Internet service or package, as appropriate, and the average of the answers was that they paid something under ISK 8,700 for individual service items (the most common answers were ISK 7,000 and ISK 9,000), and something over ISK 17,200 for a package (the most common answer was ISK 15,000). These average answers and the most common answers fitted well with the electronic communications companies' tariffs as they were then, which indicated that consumer price awareness was generally quite good.

338. Answers to the question about whether the respondent knew which kind of electronic communications connection the Internet service was received through were such that 65% answered in the affirmative, i.e. that they knew, 24% answered in the negative, and a further 11% answered that they did not know, and such an answer may be equated to a negative answer to the question. More than 99% of respondents took a position on this question.

339. A question was then asked on whether the respondent could specify the type of connection, where options were provided for all of the main names and trade names for technical solutions used for electronic communications connections over copper lines, fibre or through mobile networks. All respondents were asked this question, including those that said that they did not know what type of connection they had. They were also asked if they knew which company owned and operated the connection. More than 99% of respondents took a position on these questions. When the question was analysed by geographic regions, there was little of any significance that came to light. One could mainly mention that respondents who lived in urban areas in Reykjanes or East Iceland, are less aware of the type of connection they have, i.e. 27% and 31% of respondents respectively. Common figures from other areas ranged from 9% to 20%. In addition to this, inhabitants in urban areas in East Iceland mentioned copper local loops in a higher proportion to others, i.e. 18% of respondents, while common figures for other areas ranged from 2-6%.

340. With respect to the question on TV or content streaming providers, 69% of respondents said they purchased such service and over 82% of those who that did, purchased it as part of a package that included the household's Internet service. When asked what this service was, and where it was possible to indicate more than one option, it came to light that 88% of respondents named Sjónvarp Símans (TV) or Sjónvarpsþjónusta Símans (TV), 54% Netflix, 24% Stöð 2 (Vodafone), 18% Sjónvarp Vodafone, 16% Disney+ and fewer named another service. It was not possible to see a significant difference by age or location, nor by family size, as purchase of TV and/or visual content streaming service is common. What was however more

important was that purchase of such service did not seem to be according to the underlying electronic communications network. What one can see there is that those who purchased Sjónvarp Símans (TV) mainly said that they were connected through Ljósnet, or through copper local loop more than through other networks, and at this time Siminn offered its TV service through the company's IPTV system solely on Mila networks or networks of smaller players like Tengir or countryside networks and not on the country's largest fibre network at that time - i.e. the Ljósleiðarinn network[68]. Customers of the Ljósleiðarinn fibre network did therefore not have the possibility to purchase the service at the time when the survey was conducted. Siminn had however at that time also offered its visual content through the company's OTT solution, which was possible to use on other underlying networks since August 2018, but however until February 2021, only through a special set-top box, which has to be leased from Siminn. This solution, however, was not used much in comparison with the IPTV solution. No significant difference could be seen in purchasers of Netflix, where 59% of those who connected through fibre purchased the service as did 56% of those who connected through Ljósnet (VDSL).

341. Consumers generally did not experience problems with the performance of the connections, and 16% answered this in the affirmative. Of those who connected through fibre, 10% answered this in the affirmative, as did 22% of those who connected through Ljósnet (VDSL). This difference is significant when one considers the deviation limits of the questions, though in the opinion of ECOI, the difference is not large. The group that said that it connected through copper local loop was small, and there one could find the main difference, as 29% answered this question in the affirmative and furthermore, respondents that lived in urban areas in East Iceland were an exception as 40% of them answered that they experienced difficulties because of lack of performance.

342. No difference that can be considered significant could be found in the replies on how many TV stations, set-top boxes or streaming providers were in use at the same time as a maximum through the underlying network.

343. One question asked for the three main reasons for choosing service provider if one were to choose at the time the survey was conducted. A list was provided of the main issues that make a difference and there was also an option to provide one's own answer. It came to light that the price of the service was the factor that mattered most in consumer choice of Internet service. Next was the quality of service provided by the service provider and in third place was speed. This indicates that the varying possibilities for speed between copper and fibre connections was not a deciding factor when it came to consumer choice.

344. There was also question on whether consumers had switched Internet service party and those respondents that had switched provider within the last 12 months, were then asked for the main reasons for having switched. The respondents then mentioned price in the vast majority of cases, i.e. 32%, quality of service came next at 13% and packages of varying service after that with 12%, as the main reasons for the switch. The speed of connections was in fifth place as a reason for having recently switched service provider, at 5% of respondents. This

[68] Síminn began offering its service through the Ljósleiðarinn network in August 2021.

harmonised well with the factors named as those that were most important for a possible choice if that choice were made when the service conducted.

345. There were questions about various quality aspects of connections. They were positive issues such as *"the connection always works"*, *"the connection meets the needs of the household"* and negative issues such as *"I experienced the connection breaking or is intermittent"* or *"I experienced that the picture from a streaming provider breaks"*. When consumer perceptions of the quality of their connections were examined, it came to light that consumers were generally very, or rather satisfied with the quality of their connections, and considered them to meet the needs of the household. At the same time, consumers generally did not experience problems or disruption to the service. It could not be seen that there was a significant difference in consumer perceptions of the quality of Internet service to the home, that could be attributed to the underlying electronic communications network through which the household Internet service was received.

346. ECOI endeavoured to research price sensitivities of consumers using the hypothetical monopolist test (SSNIP test), where questions were asked about reactions to a small but significant and persistent price increase. It is problematic to ask such questions in such a manner that the respondents have a good understanding of what is meant in the short time that respondents normally give themselves when answering such networks surveys. There is also the risk that answers to such questions will not be fully thought out when one asks questions in this manner, and on this platform. In order to simplify the comparison and to put it in context for respondents, ECOI related such an increase to the annual price of common Internet subscriptions.

347. ECOI considers that the most significant conclusions of the survey that can relate to assessment of substitutability are as follows:

- That 35% of respondents appear not to know the household's electronic communications connection type, when asked directly.

- The purchase of important service items such as visual content streaming was equally common on the underlying networks.

- Perception of quality, that the connection met the needs and that problems are not experienced with performance are similar, regardless of underlying network.

- Price was by far the most common reason for having recently switched service provider, and reputation of the service provider and packages of included service came next. Speed was in fifth place, after the reply that the employer chose the connection. The fact that price sensitivity measured rather high, supported this conclusion.

- Price, quality of service provider and speed, in this order, were the factors named to be most important when respondents were asked to name important factors if they imagine that they were about to switch service provider.

- The question of reactions to a price increase of one kind of connection showed that 25% of users who had fibre connections, considered it rather unlikely that they would

switch to Ljósnet (VDSL), if the price of the connection was increased, while 33% considered it very, or rather likely. If one does not take into account those who answered, "don't know", the proportion of those that would be very or rather unlikely to switch was about 36%, while those that would very, or rather likely switch are about 48%.

- Taking all of the above into account, ECOI could come to no other conclusion than that the survey strongly indicated that there was substitutability between Internet service received over copper connections and that received over fibre, and this was the conclusion of the market analysis that was concluded with ECOI Decision no. 5/2021.

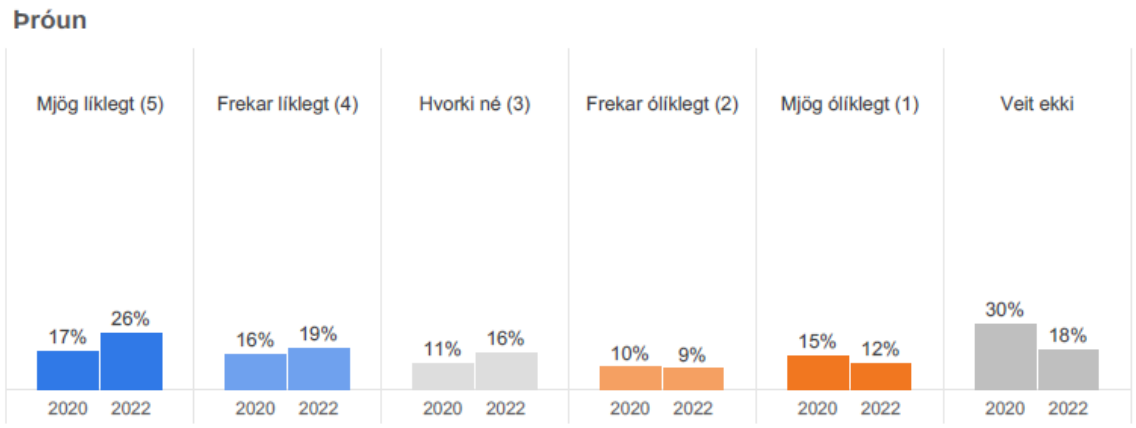
348. ECOI commissioned the same company to conduct another consumer survey on the same subject, which was made during the period 20-27 April 2022, where questions were asked in the same manner about the main factors governing the purchase decision for Internet service for home use, about the underlying network and the perception of quality of the service. In that survey, similar conclusions were reached on substitutability between copper and fibre, to those that the prior survey showed. As before, the main reason for the household's choice of Internet service provider was ordered by level of importance and secondly by the accompanying package of services, thirdly by quality of company service and fourthly by connection speed. A similar conclusion was shown when the question was about the main reason for the last switch of Internet service provider. Of the five main reasons for this, price was in first place, then quality of service of the company, then that the employer chose and paid for the connection, then that the package of included service decided the choice and in fifth place was the speed of the connection. About 26% of users said that they would most likely be prepared to switch from a fibre connection to Ljósnet (VDSL) if the household's Internet service provider were to increase its price by about ISK 15,000 on an annual basis, while 19% said this was rather likely, which gives a total of 45% compared with 33% in the survey from 2020, see figure 3.28 here below. Considerably fewer considered it very or rather unlikely in the later survey, a total of 21% against 25% in the prior survey. It is clear in the opinion of ECOI that such behaviour would not be profitable for Mila, which means that connections over copper and fibre belong to the same service market at retail level.

349. This indicates furthermore that varying possibilities for speed in copper and fibre connections did not constitute a deciding factor when it came to consumer choice. With the above in mind, ECOI believes that the conclusions of the above specified consumer surveys support the conclusion that there is still substitutability between copper and fibre connections at retail level. A large proportion of consumers are not aware of the type of underlying carrying layer that supports the connection. Price is the factor that most respondents put in first place when asked about the reasons for choice of service provider, and the speed of the connection is much lower in the priority ranking. It seems that the majority of users of copper connections do not perceive a lack of speed. A larger proportion of respondents say that they are likely to switch from fibre to VDSL, in the event of a small but non-transitory price increase, than the proportion that considers this unlikely.

350. In these two surveys, i.e. from September 2020 and April 2022, the same procedure was used, which led to the same SSNIP questions, where households using a fibre connection were asked whether they would consider switching to a Ljósnet connection if the fibre connection increased persistently in price by about 10% while a Ljósnet connection did not

increase in price. Greater price sensitivity came to light in the later survey and also a tendency to mention that such switching was likely, and that fewer answered with the option "Don't know".

Figure 3.28: Development of responses to SSNIP question on switching from fibre to Ljósnet (VDSL), between September 2020 and April 2022



Source: ECOI

351. ECOI considers that these consumer surveys support the Administration's position from 2021 that there is still substitutability between Ljósnet (VDSL) service provided over copper lines and fibre local loops.

3.2.2.4 Supply-side substitutability

352. With regards to the supply side, a chain of substitution between connections with varying speeds and even quality is more likely than on the demand-side, if electronic communications companies can change their service offer in a relatively short space of time, taking into account the core networks on which the service is based. In most cases it is possible to upgrade from a lower speed xDSL connection to a faster connection such as VDSL. Then companies are able to switch from copper to connections based to some extent or entirely on fibre, either by deploying their own or by choosing the quicker and less expensive option of leasing access in another party's network. Supply-side substitutability is on the other hand, probably rather homogeneous, as it is unlikely that a company that operates fibre connections will replace them with xDSL connections. In the same manner, the deployment of a new generation of mobile networks is a significant task, mainly within the reach of undertakings that already operate mobile networks. It is not likely that a new undertaking will emerge that will deploy its own mobile network, or that an electronic communication undertaking that is not a mobile network operator will enter the field of mobile network service.

353. To demonstrate substitutability between specific product or service types, it suffices either to demonstrate the existence of demand-side substitutability or supply-side substitutability. It is not necessary to demonstrate both. It is generally considered that demand-side substitutability gives a clearer picture of competition than supply-side substitutability. As the conclusions for demand-side substitutability are in the opinion of ECOI

clear, with respect to chain of substitution between broadband service over connections that with copper connections using VDSL technology, fibre connections, cable connections and connections over 4G/ 4.5G and 5G mobile network connections, there is no need to conduct detailed assessment of supply-side substitutability at retail level in this section.

3.2.2.5 The conclusion on substitutability between copper, cable and fibre connections at retail level

354. Taking into account the service offer, marketing and market circumstances, ECOI considers that in this country, there is a chain of substitution which supports that Internet connections through a copper network with VDSL technology, through cable systems and through fibre, belong to the same retail market. In addition to this, homogeneity in pricing and service offer on varying Internet connections strongly indicates that the above specified categories of Internet service over fixed line network, belong to the same market. The conclusions of the consumer surveys commissioned by ECOI in October 2020 and April 2022, which are described in section 3.2.2.3 here above, demonstrate clearly that there is still substitutability between Internet connections over VDSL on a copper system and over fibre, and that this will be the case throughout the lifetime of this analysis, in the opinion of ECOI, though it is clear that the importance of VDSL connections will continue to decrease throughout the estimated lifetime of the analysis, and will finally be decommissioned at the end of 2028, if the Mila plans are realised. This is furthermore, in accordance with what has transpired in a large majority of states within the EEA.

355. In the opinion of ECOI, ADSL connections no longer belong to the chain of substitution in question, or at least, will not do so throughout the lifetime of the analysis, and they are now very few in this country. The capacity of ADSL connections can hardly any longer have the capacity, or at least in the lifetime of the analysis, to meet the needs of households in an adequate manner.

356. ECOI therefore considers there to be every likelihood that the substitutability in question will exist throughout the planned lifetime of this analysis which is estimated as five years or until the end of 2028, whatever might transpire after that time, and given Mila plans, most effort in the decommissioning of the copper system will be made in the years 2027 and 2028. It is not inconceivable that these plans will be somewhat delayed. It is clear that the importance of copper connections has decreased significantly in recent years and will continue to decrease throughout the lifetime of this analysis. Connections on cable systems are negligible in this country which means that competition in Internet connections on fixed line networks will mainly be on fibre towards the end of the planned lifetime of the analysis. Should there be significant changes on the retail market within the next five years, which reverse this conclusion, ECOI will immediately commence a new analysis of the relevant wholesale markets.

357. Taking into account the above specified discussion in Sections 3.2.2.1 to 3.2.2.4 here above, ECOI considers that Internet connections provided in this country over copper with VDSL technology, cable systems and fibre networks belong to the same service market at retail level and will do so throughout the lifetime of the analysis. There is discussion on substitutability of mobile networks later in section 3.2.4 here below.

3.2.3 Distinction between standard broadband access and high-quality access at the retail level

358. In the EU Commission explanatory note to the Recommendations on the relevant markets from 2014 on which the current ESA Recommendations from 2016 are based, a distinction is made on retail markets for standard access service and markets for high-quality connections.[69]

359. Many SMEs have no need for an Internet connection, other than those that are offered on the residential market. ECOI considers there to be no need to distinguish between service to companies and service to individuals. The service is generally the same, sold at the same price and underlying services and network at wholesale level are the same. Users from either group can equally use service that is generally offered to the other group, as this is a case of standard homogeneous service. Electronic communications companies that concentrate on selling to homes can with relatively little effort alter their market emphases and start offering services to companies, or vice versa. For this reason, ECOI considers such service to belong to the same retail market as Internet connections to homes.

360. Traditional home Internet connections are not however adequate for all companies. This includes companies that have operations at many locations that need to have good electronic communications with each other, and also companies that make high demands on quality, uptime and service level. Such companies need a service other than standard Internet connections and they purchase services such as IP-VPN, Ethernet-VPN and leased lines of various types. Service with these companies is often tailored to the needs of each customer, because standard mass-market service types do not meet their needs.

361. It is the characteristics of the service that weigh heaviest when companies choose high quality connections. Companies that need high speed and quality cannot choose other options, such as standard Internet connections, and it is therefore unlikely that they would switch to standard connections even if the price of high-speed connections were to increase. This indicates that substitution on the demand-side is small between high-quality connections and standard Internet connections.

362. In the domain of high-quality connections, the nature of the service is to a large extent decided by the needs of individual customers. It is not possible to offer them standard Internet connections, but discussion needs to take place between buyer and seller on crafting the service. This means that electronic communications companies need to use different marketing methods than those used on the household market, and they furthermore need to have the capacity to set up various types of services, according to the needs of each party and to ensure stability in operation and in quality of the service.

363. This difference in marketing and in the operation of high-quality connections and standard Internet connections makes it unlikely that a company which only offers standard

[69] SWD(2014) 298 COMMISSION STAFF WORKING DOCUMENT -EXPLANATORY NOTE Accompanying the document Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, section 4.2.1.

connections will begin to offer at short notice, high-quality connections if a small but non-transitory price increase should occur in the latter. This means that supply-side substitutability is unlikely.

364. ECOI has not seen any evidence that circumstances in Iceland are, with respect to the difference between standard Internet connections and high-quality connections, significantly different from what applies elsewhere in the EEA. As it will neither be deemed that there is demand-side or supply-side substitutability between these service types, ECOI considers that the distinction proposed in the ESA Recommendations on the relevant markets from 2016 applies in this country and that therefore standard Internet connections on the one hand and high quality connections on the other hand, will be considered to belong each to their own service market.

365. In its preliminary analysis that led to Decision no. 5/2021, ECOI planned to move Mila P2P Ljóslína that electronic communications companies purchase from the company and Ljóslína to mobile phone transmitters, which were previously on market 6 (currently market 4 in ESA Recommendation from 2016), pursuant to the PTA Decision no. 8/2014, over to market 3a. In the additional consultation document, it was stated that when one saw retail product as wholesale products based on the relevant markets 3a and 3b, one could see that the Mila Ljóslina did not harmonise with such a wholesale product and was not in the most common chain of substitution of the standard product covered by the analysis, i.e. a chain of three products were the first were products on the market for fixed line local access, i.e. local loops, which in turn were used as the basis for products on the market for central access, i.e. bitstream. This bitstream was finally purchased as a wholesale product by retail companies that operated on the market for mass-market products to provide its customers with Internet service and other related service, i.e. both homes and companies, for whom such mass-market retail products sufficed. The Mila Ljóslína product was not entirely new as a wholesale product in such mass-market offer of service.

366. It was stated that it generally applied to Mila Ljóslína that such lines were not normally deployed in the same investment projects as the public local loop network, which was deployed in the comprehensive network in Mila's fibre roll-out. They still required a special order and as appropriate, were only deployed against a share of start-up costs. There were thus other criteria for Mila investment in the Ljóslína in question than in the general deployment of fibre in the company's access network.

367. ECOI therefore retracted the amendment that had been announced in the preliminary draft to Decision no. 5/2021, to the effect that the Mila Ljóslína should be defined as part of the public local loop network and thus belong to market 3a. In Mila comments on the above specified preliminary ECOI assessment, dated 10 July 2020, Mila presented arguments for the Ljóslína in question not belonging to market 3a but rather to market 4. The Mila Ljóslína has up to this point in time belonged to market 6, pursuant to the numbering from 2008, i.e. terminating segments of leased lines. ECOI planned therefore that Mila Ljóslína would belong to market 4 pursuant to the numbering of markets from 2016, i.e. local access of high quality, and work on that market analysis is now under way at ECOI. The conclusion of the analysis here under discussion is the same as in the above specified ECOI Decision no. 5/2021, i.e. that such Ljóslína should not belong to market 3a.

3.2.4 Distinction between standard broadband access provided at a fixed location and wireless service

368. In the working document to the EU Commission Recommendations on the relevant markets from 2014, on which the ESA Recommendations in force from 2016 are based, there is a short discussion on the distinction between broadband service provided at a fixed location and wireless broadband service.[70] Among other things it states there that from a consumer point of view, wireless solutions can in some instances be considered a substitute service for an Internet connection provided at a fixed location. 3G mobile phone service has however generally not been considered to be a substitute service as this service is mainly designed with mobility in mind and does not have the same speed and reliability as service provided at a fixed location. It is stated that the position on mobile phone service may need to be rethought subsequent to increased distribution of newer technology which is more powerful than 3G. In 2014, the Commission considered it problematic to generalise on substitution possibilities for mobile phone service in the future and that NRAs should assess this specifically in each individual state.

369. It is clear that extensive technical and marketing development has taken place in deployment and use of mobile networks in this country since the above specified text was written in 2014, i.e. 4G/4.5G and now latest 5G, and not only regarding traditional mobile phone service over mobile phones, which is first and foremost, conceived with mobility in mind, but also with respect to solutions through electricity mains connected routers that connect to electricity in a building and thus mimic a connection over a fixed line. There will be further discussion on possible substitutability at retail level between the last specified solution and a connection over a fixed line network in section 3.2.4.1 here below. In section 3.2.4.2, there will then be discussion on possible substitutability at retail level between fixed line networks and another kind of fixed wireless solution which is not a mobile network (FWA), for example with a WiMax solution or satellite.

3.2.4.1 Broadband mobile phone access

370. Existing Recommendation from the EU Commission on the relevant markets is from 18 December 2020 (the new Recommendation).[71] ESA has not issued a comparable Recommendation up to this point in time, which means that to all intents and purposes, the ESA Recommendation is the reference in this analysis, among other things with respect to the markets ECOI is required to analyse. In the new Commission Recommendation and in their accompanying documents, one can however find detailed discussion on the development of electronic communications markets from 2014-2020, of which ECOI has taken account as appropriate in this analysis. One must keep in mind that this Recommendation and its

[70] SWD (2014) 298 Commission staff working document - Explanatory note accompanying the document Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, page 35.

[71] See https://digital-strategy.ec.europa.eu/en/news/commission-updated-recommendation-relevant-markets.

accompanying documents were processed in the years 2019-2020, when 5G was in the early stages or even not yet available at many locations in Europe.[72]

371. In paragraph 1 of the preamble to the new Recommendation, reference is made to the objectives of the Code from 2018. There it states that in addition to the objectives of strengthening competition, protecting consumer interests and strengthening the internal market for electronic communications in Europe, there is a new objective to facilitate deployment and adoption of very high-capacity networks, including fixed networks, **mobile networks** and other wireless networks, for the benefit of consumers and undertakings. In Article 3 of the preamble, it states that the definition of relevant markets can change with time, as the characteristics of available service develop, and supply and demand develop as new services or technical solutions change because of their elements in technology, marketing and regulatory control.[73]

372. In the EU working document[74] attached to the new Recommendation it states among other things, that from the point of view of the end user, the service provided over another technology than fixed line, e.g. WiMax, mobile network and fixed wireless access (FWA), could, under certain circumstances be considered to provide substitutability for fixed line service. WiMax had for many years been deployed in various areas in Europe, but for example to a much lesser degree in the United States. 4G service had then in time, largely replaced such service. Fixed wireless connections over 5G were therefore a more attractive choice as

[72] On page 34 in the Commission staff working document to the new Recommendation, SWD(2020) 337 final (Commission working document) there is discussion on 5G mobile networks. There it states: *"5G is the latest developed generation of wireless communication technologies supporting cellular data networks. 5G will enable a vast coverage of new applications across the economy in both private and public sectors in addition to its consumer dimension, in fields like logistics, connected mobility, intelligent cities, infotainment, health care, and the IoT. In Europe, a number of pilot projects are currently being run: the impact of the new technology and services on the market remains to be seen.*
5G has three main specific areas of application: 1) eMBB – enhanced Mobile Broadband: up to 10 Gbps peak speed. Average speed can be expected in the range of 0.5-0.6 Gbps in dense urban areas; 2) mMTC – Massive Machine-type Communications – up to 1 million devices/km2 and 3) uRLLC – ultra–Reliability Low Latency – 1-10 msec.
It is expected that initial 5G services will mainly be focussed on enhanced mobile broadband potentially 5G Fixed Wireless Access (FWA). FWA based on 5G could offer downlink data rates which are equivalent to downlink data rates offered on some currently used fixed technologies, while the ITU IMT2020 specification for 5G should offer even better performances in terms of speeds and latency. However, it is note expected that 5G in any of the coming specifications will outperform 1 Gbps FttH Ethernet in a point-to-point (PtP) topology (1000BASE-X). 5G will also support diverse IoT use cases based on new radio capabilities. Taking into account the need for increasing industrial reliance on connectivity, the wireless or mobile IoT applications will likely require in the coming years a dedicated fixed connectivity to key sites coupled with 5G."

[73] In the above specified working document, it states among other things on page 7: *"Furthermore, in the electronic communications sector, products and services continuously evolve because of technological development and increasing capabilities of various technologies. Whenever similar services can be delivered over different types of networks, a convergence of markets might follow."* and on page 13: *"Market dynamics may also be affected by technological developments or by the convergence of products and markets. The presence of infrastructures that are based on different technologies but that offer products that are substitutable for end users can also alter competitive dynamics across the supply chain, including competition on price, choice and quality."* and on page 22: *"Performance of alternative technologies directly determines the type and degree of replacement that may be possible for end users, …".* and also on the same page: *"The performance of access technologies is primarily determined by the physical characteristics of the medium that is being used: twisted pair copper in an unshielded or shielded manner, coax, optical fibre or radio waves."*

[74] See page 36 in the Commission working document.

an option for very high-speed connections[75]. On the other hand, their capability would be in the lower end of FTTH networks. National regulatory authorities should therefore consider in each instance whether such mobile technology could provide substitutability for fixed line networks. Such mobile technology could offer lasting substitutability for copper infrastructure in rural areas, but for substitutability for fibre infrastructure one might need to take into account the existence of fibre networks and plans for the development.[76]

373. It was then stated that in the case of 4G, significant advances had been made in download speed. Today (2020) 4G was capable of delivering performance and consumer experience equal to that of a copper network, including VDSL. In some EU states, mobile network and fixed line network services were seen as substitute services[77] and in some states, electronic communications undertakings had started to offer unlimited data use in mobile networks. Mobile network technology was continuously being developed and for this reason it was likely that during the lifetime of the new Recommendation[78] substitutability between fixed line networks and mobile networks could be a reality (particularly with 5G). This particularly applies to specific areas where fibre networks had not been deployed to residences and undertakings.[79]

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[75] There is discussion on page 33 in the working document on mobile networks, including 5G. There it says, among other things: *"5G will provide higher bandwidth and will enable operators to provide tailor-made services for the different requirements of different customers in terms of latency, reliability, bitrates, and end-to-end service levels. Although 5G services are likely to be made available in certain areas in the relatively short term, initial 5G services will mainly be focussed on enhanced mobile broadband potentially 5G FWA. 5G deployments capable of supporting ultra-reliable low latency communications (URLLC) and connected automotive mobility (5G CAM) are likely to take longer and may only enter into widespread use in the medium term."*

[76] Prior to the issue of the new Recommendation, the Commission commissioned WIK Consult to make a detailed analysis of the development of electronic communications markets from 2014 and to make a projection for the future. The WIA Consult report was published on 23 June 2020. See https://digital-strategy.ec.europa.eu/en/library/study-future-electronic-communications-product-and-service-markets-subject-ex-ante-regulation. Pages 3-6 in the introductory section of the report discusses retail markets.
On page 4 among other things, it states: *"An important development during the period of this Recommendation is the deployment of 5G. However, 5G mobile services are not expected to substitute for fixed broadband,* ***due to the prevalence of data caps within mobile pricing models*** *and the shared nature of the medium, which limits its potential to carry the high data load currently supported by the fixed network. Moreover, 5G will likely require the deployment of fibre further into the network to provide high capacity backhaul to existing base stations, and in time, new small cells. The increasing reliance of mobile technologies on fixed backhaul provides a signal that VHC fixed networks and 5G technologies are likely to be complementary. 5G fixed wireless access (FWA) offers more promise as a potential alternative to wireline VHC broadband connections. However, its capabilities lie at the lower end of those available via FTTH. NRAs should thus consider whether it offers a substitute on a case-by-case basis, noting that it may offer a permanent alternative to copper infrastructure in very rural areas, while substitution between FWA and wireline VHC technologies in other areas may depend on the presence of and prospects for FTTH."* (ECOI emphasis edit)

[77] E.g. Italy, Hungary, Romania, Belgium, Czech Republic and Austria.

[78] Generally speaking, there was a 5–6-year gap between Recommendations. This meant that the lifetime of this Recommendation could be until 2025-2026.

[79] See page 37 in the working document. There it also says: *„From a technological perspective, the capacity in mobile networks is increasing and it requires additional transport capacity in the fixed networks. In fact, to support increasing data rates the cell deployment needs to become denser which in turn extends the demand for fixed backhaul. 5G is the new generation mobile protocol, which in addition to delivering higher data throughput speeds also allows for the virtualisation of network functions and intelligent management of network elements. Next Generation access (NGA) and VHCN are defined on the basis of the speeds that can be provided over those*

374. On page 33 in the working document there is discussion on convergence between fixed and mobile networks. It is stated there that convergence between these technical solutions was taking place, both commercially and technically. With respect to commercial convergence, reference is made to service bundles and bundles were consumers could purchase bundles that contained service over both fixed line and mobile networks.

375. With respect to technical convergence between fixed line networks and mobile networks, reference is made in the working document in question that fixed line networks are an increasing necessity, first and foremost fibre, as a backbone to distribute traffic through mobile networks. This development will become even more rapid in the case of 5G networks, which demand greater density in installation of smaller transmitters than was required by older technologies, thus for a greater number of transmitters than before. One can therefore expect significant synergies in instances of joint deployment of fixed and mobile networks. This means that many electronic communications undertakings, that throughout the years have only provided either fixed line network service or mobile network service have now become providers of both fixed line network service and mobile network service. This development could make competition difficult for electronic communications undertakings that provide only one of the services. If service bundles that contained both fixed line and mobile network service became dominant, pure mobile network undertakings could gradually be squeezed out of the market, unless they had wholesale access to fixed line electronic communications networks. In the same way, electronic communications companies that only operate fixed line networks could become compelled to acquire wholesale access from mobile network operators, in order to be able to provide mobile network service.[80]

376. References is made to more detailed discussion on mobile networks in sections 3.1.1 and 3.1.5.5 here above with respect to issues such as the history and development of mobile service in this country, to operating mobile network undertakings, to frequency licences and their distribution requirements, to deployment plans of mobile network undertakings (particularly with regards to 5G), to decommissioning plans for 2G and 3G, to proportion of subscribers between varying technical generations, to development in increased data volume over mobile networks, to the characteristics of mobile network service, to limitations on such

networks. ***Already 4G/LTE significantly improved the bandwidth achievable through mobile connections*** *by bringing mobile broadband services closer to the bandwidth offered by fixed broadband. With respect to 5G, bandwidth is only one of the main characteristics together with latency, reliability and data rates. However, 5G is also a mobile technology, which implies that even if the performance of a fibre-based network could be the same, the possible areas of application are very different."*
on page 53 it states: *„However, in view of the expected short to medium term developments of mobile technologies,* ***5G FWA in particular is expected to play a significant role as a substitute for fixed access,*** *particularly in rural areas across Member States. Significant advancements of 5G roll out can be expected in the coming years, which are in many Member States coupled with comprehensive coverage obligations, which require coverage of a large majority of households in rural areas. Moreover, mobile technologies are already broadly used.* ***Given the forward-looking nature of the Recommendation, BEREC´s assessment may be unduly cautious.****"* (ECOI emphasis edit)

[80] In the working document, it furthermore states that another competition challenge is that such convergence between fixed line and mobile networks increased access barriers on the electronic communications market, not only because new entrants needed to be able to offer both fixed and mobile network service, but also because this could make it more difficult for consumers to switch service between electronic communications undertakings.

service, to access to mobile networks, to their distribution and usage, to marketing of mobile network solutions, to the pricing and to changed consumer usage patterns.

377. In the figures specified below one can see distribution of 4G/4.5G mobile networks on the one hand and 5G mobile networks[81] on the other hand, as the situation was at end of year 2022, on the basis of a good in-house signal. It is clear that wider distribution of 5G mobile networks has taken place in the year 2023:

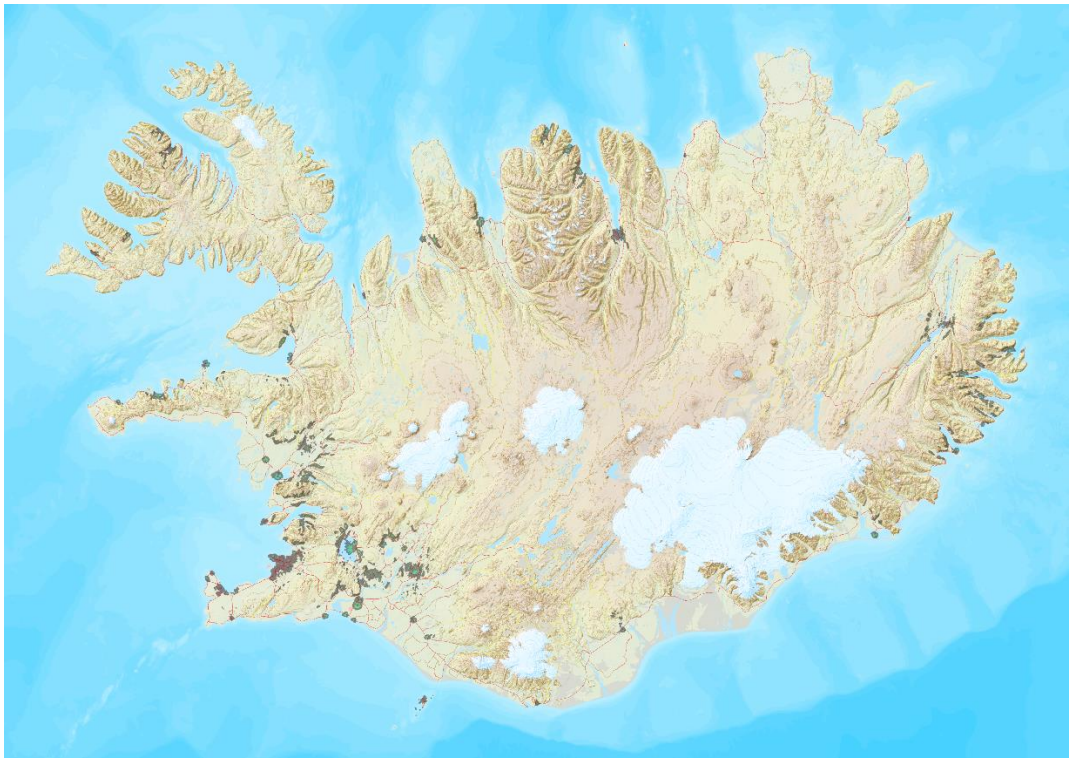
Figure 3.29 - Combined distribution of 4G+4.5G mobile networks



Source: ECOI

[81] In a letter of reply from Nova to ECOI, dated 2 May 2023, it was among other things stated in a reply to a question on deployment plans for mobile networks, that the undertaking expected that towards the end of 2023, all municipalities in the country with 500 inhabitants or more would have the option of 5G service and that all urban nuclei in the country would have access to such service, no later than in 2026. All of the country's urban nuclei already had access to 4G service. During the next three years, the undertaking expected that the conversion from 4G frequencies to 5G would be at an advanced stage and that it would thus commence decommissioning of 4G. [...].

Figure 3.30 - Combined distribution of 5 G mobile networks[82]



Source: ECOI

378. Mobile phone networks today offer broadband data transfer service. Connection with the end user takes place through a mobile phone or other device which can connect to a mobile network and the signals are sent wireless between the end user's device and the mobile phone network stations. Mobile phone network stations are then connected to central network units with a fixed line, often fibre. Instead of hand-held devices it is possible to install fixed equipment at the location of the end user, including electricity mains connected network routers, which receives signals from the next mobile phone station.

379. Mobile network connections on offer in this country today on 4G/4.5G/5G, generally have average download speed in the range of 15 Mb/s in the case of 4G (up to 50 Mb/s in optimum conditions) to 300 Mb/s in the case of 5G. Future 5G mobile phone transmitters will be able to perform better, but endpoint equipment generally in use today does not necessarily support more speed, although more powerful 5G endpoint equipment is steadily increasing and will continue to do so during the lifetime of this analysis. The number of devices connected to the same transmitter at any given time can impact download speed, as the devices share the bandwidth on offer from the relevant transmitter. Other factors that can influence the speed of the connection are for example distribution conditions, signal strength, frequency range used by the transmitter, distance from transmitter and building design with respect to in-house conditions.

380. In April 2023, ECOI sent a query to the three mobile phone undertakings on the one hand, about average download speed and on the other hand, about maximum possible download speed of mobile network connections under optimum conditions in the cases of

[82] See also on ECOI's cartography: https://kortasja.lmi.is/mapview/?application=fjarskiptastofa.

4G, 4.5G and 5G. It seems that the undertakings are not offering the same speed on 4G or that the quality of the information they give varies, but the undertakings reckon that the average download speed to devices in 4G is in the range of 15-50 Mb/s. Siminn and Vodafone say however that this is only 15-30 Mb/s. It was stated among other things that the average throughput depended to a large extent on the configuration of transmitters (number of frequencies) and/or load where bandwidth is shared. Only Nova could provide information on average download speed to devices in 4.5G, which is said to be 150 Mb/s. In 5G, the average download speed is said to be 100-300 Mb/s. It is worth noting that none of the undertakings yet offer 5G stand-alone, i.e. 5G cores on 5G transmitters, but they estimate that this could be a reality in the years 2024-2025. This will doubtless increase 5G speed even more.

381. Mobile phone network connections can generally carry all the main services transmitted through Internet connections, even 4K TV service to some extent with 4G and even more so with 4.5G and 5G. These connections can however be more sensitive to external influences rather than fixed line connections, which can inhibit possibilities for use. In this connection one can mention that high and stable speed combined with short ping are important factors in using HD visual content and in computer games that rely on the Internet.

382. Pricing of Internet connections over a mobile network has recently developed from being significantly more expensive than an Internet connection over a fixed line network, to becoming comparable, or even slightly less expensive if one considers the line charge that fixed line customers need to purchase. Pricing should therefore no longer hinder users from switching between the solutions.

383. With respect to substitutability between fixed line and mobile network connections with the handset, the fixed line connection is generally not a substitute service for mobile network solution, as mobility is lacking. Substitutability between mobile networks through an electricity main connected router from a specific place of use and fixed line network over a copper network on which VDSL equipment has been installed, cable systems and fibre seem to have become a reality, as is explained in further detail later in this section.

384. In the following table one can see statistics on the development in the number of connections in fixed and wireless networks since 2014 until the end of 2022:[83]

[83] This table is based on data from the regular annual collection statistics from electronic communications companies. These are therefore comparable and contiguous annual data. Because of problems in collecting data from the very large number of municipalities that, since 2016 have received grants from the project Iceland Digital Connected, such networks do not appear in this regular statistical report. This represents a number of parties, but they are all very small in a national context. This project was completed in the year 2023, when the last tens of fibre local loops provided by the project was deployed. ECOI estimates that fibre connections in use are just under 3000 more at the end of 2022 than stated here.

Table 3.1. Development of various electronic communications services 2016-2022

	2016	2017	2018	2019	2020	2021	2022
Total number of mobile phone subscriptions	440449	461379	472072	475842	475539	497019	521722
Mobile phone subscriptions with voice telephony	391209	401231	411361	413446	421384	437270	456864
Data subscription only	49290	60148	60711	62396	54155	59749	64858
Users that use Internet in mobile phones	304677	328243	348212	355398	365076	382701	405528
Data volume (TB) and mobile phones	16652	25365	36556	54839	81904	102511	126571
Proportion of 4G SIM cards	59.1%	65.8%	78.5%	83.4%	85.0%	82%	76%
Proportion of 5G SIM cards						5%	7%
xDSL connections	84846	75631	63743	51356	43362	32322	25254
Fibre-optic connections	42352	56649	72253	86520	97292	107294	116726
Total number of connections provided at a fixed location	127198	132280	135996	138267	139768	140639	142344
Fixed Wireless Connections (FWA)	793	1294	560	391	274	247	244
Connections through cable modem		1050	1433	974	888	776	110
Number of users with 4/4.5/5G network routers[84]							24030

Source: ECOI

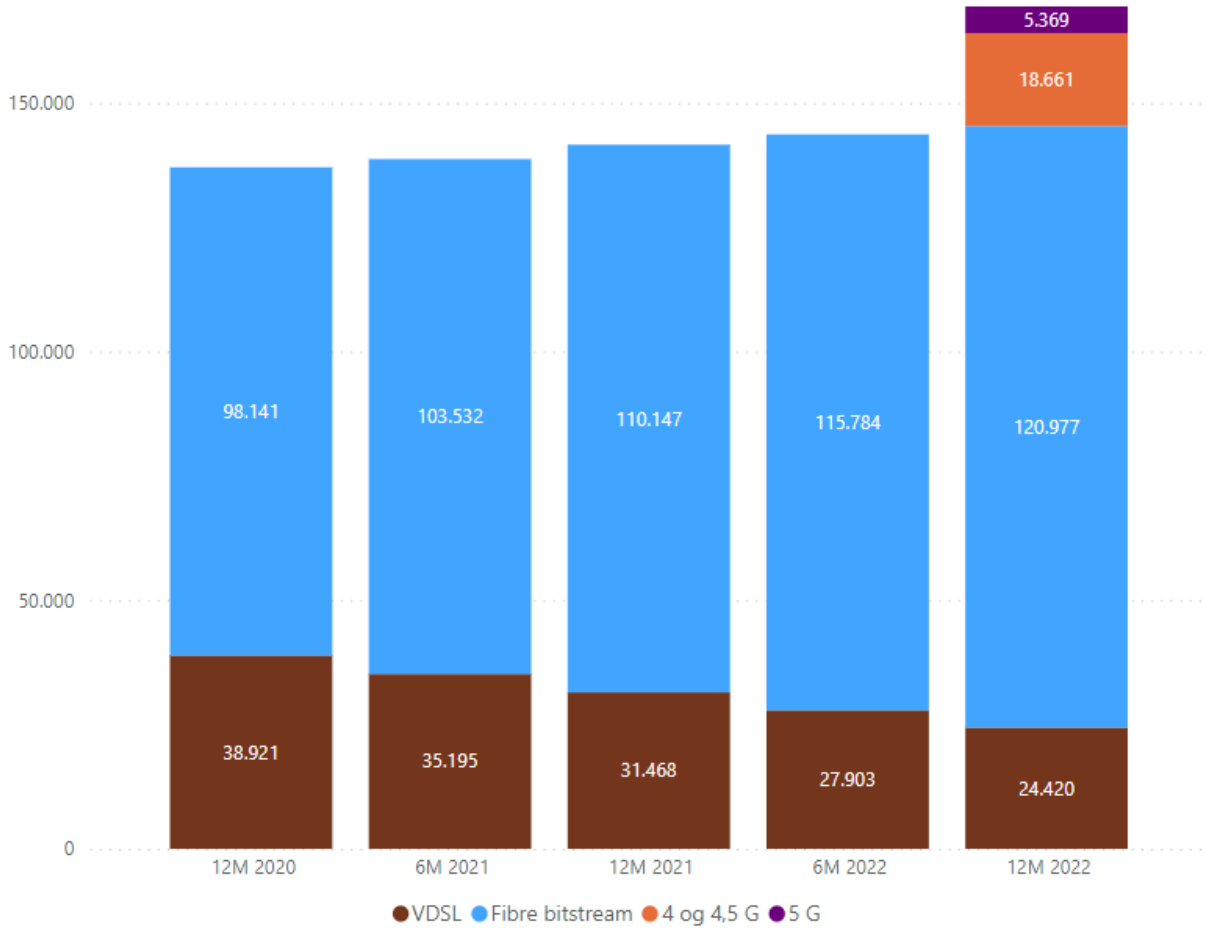
385. Demand for mobile phone service has increased steadily during the past years. Since the end of 2016 and up to the end of 2022, mobile phone network subscriptions have increased from 440,449 to 521,722, which is about 18%. Data volume in mobile networks has also increased very significantly and is still on the increase according to the above specified table and to figure 3.6 in section 3.1.1 here above. As call minutes and SMS are unlimited resources in mobile networks and as data volume is the service that mobile phone companies sell to their customers, the distinction between mobile phone subscriptions with call service and subscriptions solely with data volume is disappearing, as can be seen for example, by the fact that the number of subscriptions solely with data volume has hardly changed since 2017. Some mobiles phone undertakings have for example removed this completely. In addition to this, the mobile phone undertakings have begun to offer unlimited data volume in mobile networks, which provides competition in price with fixed line networks. The increase in users

[84] Data on the number of connected network routers on mobile phone networks, first collected in April 2023. As this was the first time that such data was collected from mobile phone operators' systems, a reservation is made on accuracy, but ECOI considers nevertheless that possible errors are minor and do not impact the conclusions of the analysis.

in Internet service provided over fixed line connections has stagnated during the last 3 years, while connections through electricity mains connected network routers has probably increased in recent times and stood at 24,030 at the end of 2022, if one considers 4G/4.5G and 5G service.

386. In the figures specified below one can see the number of mobile phone connections through electricity mains connected network routers at a specific place of usage, against fixed line network connections[85]:

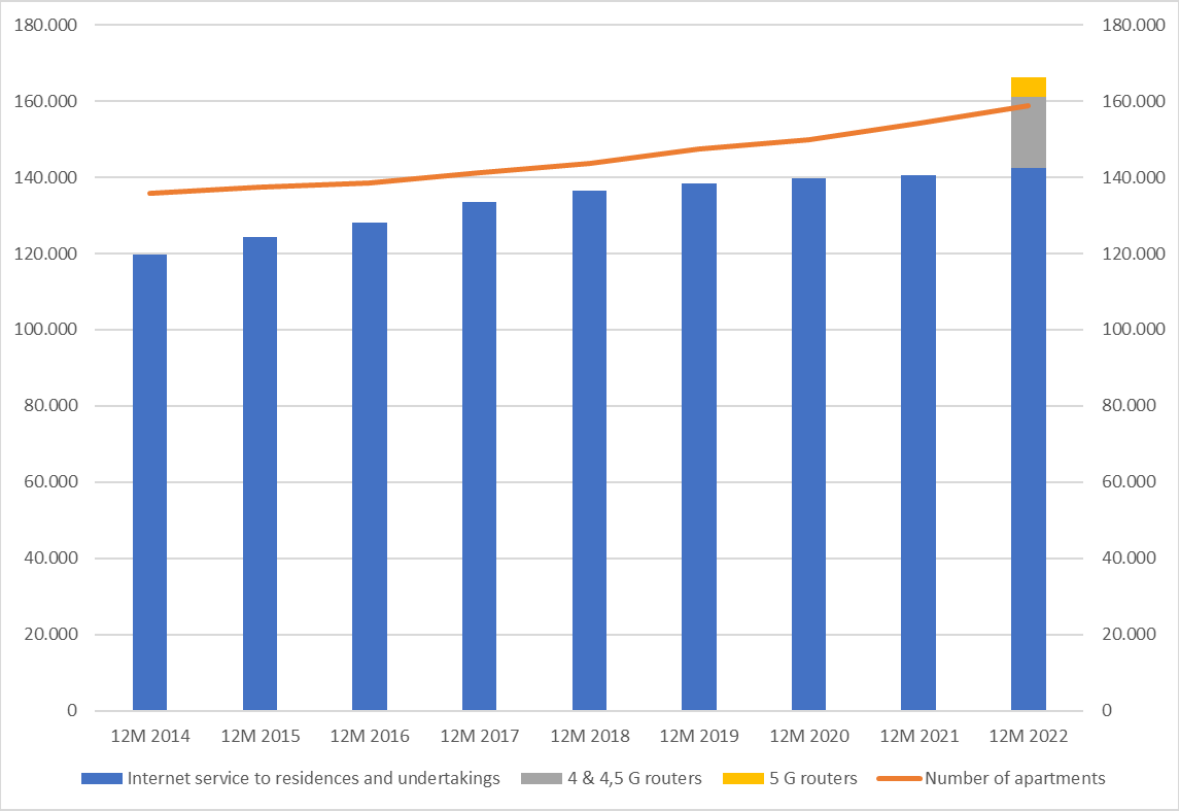
Figure 3.31: Development of number of connections over bitstream on copper and fibre compared with the number of electricity mains connected network routers on mobile networks, from halfway through 2021 until the end of 2022



Source: ECOI

[85] There is no information on the number of electricity mains connected network routers on mobile networks at this point in time, but the number measured in April 2023, was added to end of year figures for end of 2022.

Figure 3.32: Number of Internet connections over bitstream on fixed line and the number of mains connected mobile network routers, compared with number of apartments in the country



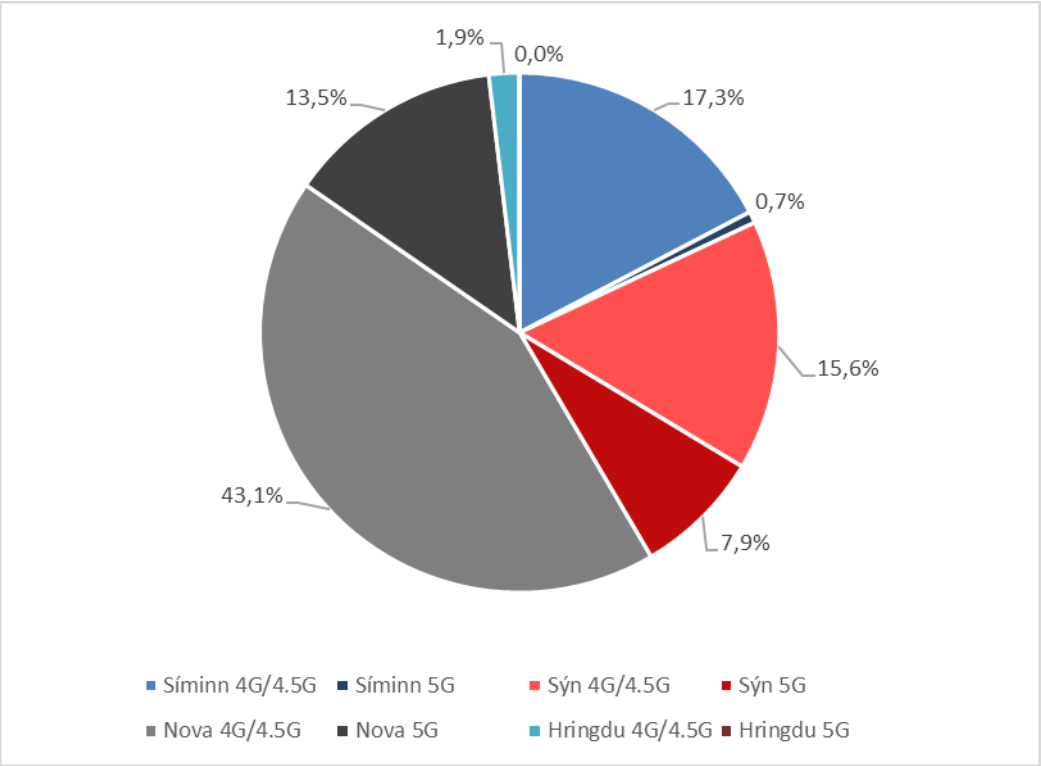
Source: Electronic Communications Office of Iceland/HMS

387. Figure 3.32 shows that the number of subscribers for Internet service to residences and undertakings has not followed the growth in apartments in the country, particularly when one examines recent years, during which period the quality of Internet service over mobile networks has increased significantly and where electronic communications undertakings have increasingly advertised this service as an option to Internet service over fixed line networks.

388. With the above in mind, mobile network service appears to be an option for Internet service to the home, and even to undertakings in some instances, as can be seen from the above specified statistics and in the consumer survey commissioned by ECOI in November 2022 and that will be discussed here below.

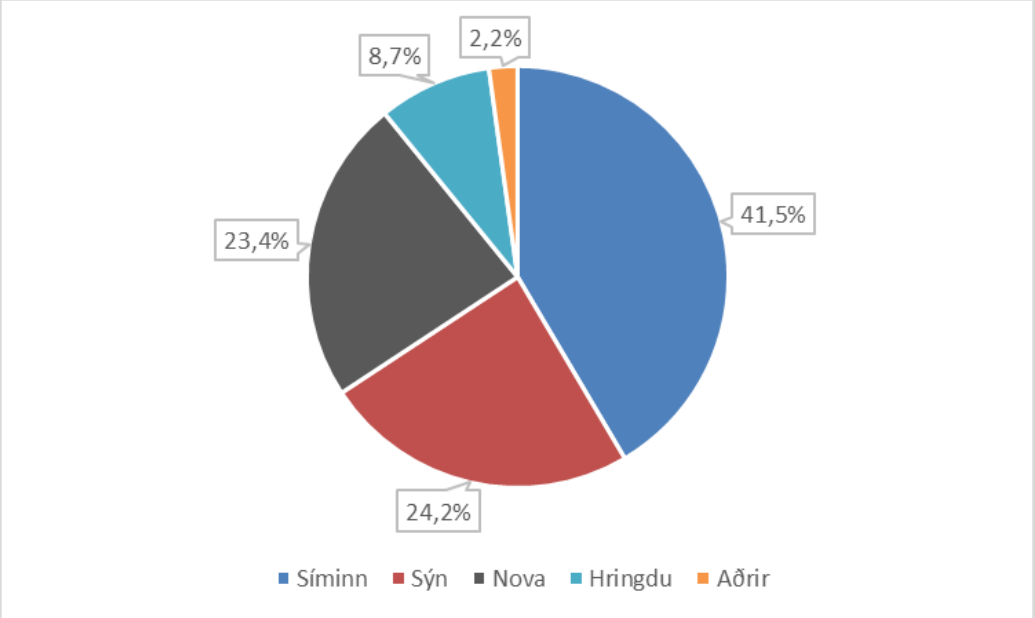
389. In the above specified figure one can see how market share in such mobile network solutions is divided between parties on the retail market:

Figure 3.33: Share of companies in Internet service over network routers on mobile networks at retail level



Source: ECOI

Figure 3.34: Retail share of Internet service, taking into account network routers on mobile networks at end of year 2022



Source: ECOI

390. In the Nordic countries, mobile network service has not been considered to belong to the same service market as fixed line connections, except in the case of FWA solutions in

Norway, which need to fulfil strict conditions, among other things with respect to the connection being limited to a specific mobile phone transmitter which makes movement of equipment between locations impossible. Reference has among other things been made to users seeing data transfer over mobile networks as an addition rather than substitute service. The position is widely the same elsewhere in the EEA. It is worth noting that states within the EU have come to the conclusion that such substitutability has been realised, states such as for example Italy, Hungary, Romania, Belgium, Czech Republic and Austria. One can expect, therefore, that more states will come to this conclusion during the coming months and years. Developments in this direction appears to be faster in this country than in most other states within the EEA as the above specified consumer survey indicates, and ECOI statistics confirm this development.

391. With respect to supply-side substitutability, ECOI considers that companies that only offer one type of connection, i.e. connections over fixed line, or mobile network, can generally not change their offer at short notice. For substitutability to exist, it is sufficient on the other hand, for either demand-side substitutability or supply-side substitutability to demonstrate this. In the opinion of ECOI, demand-side substitutability strongly indicates that substitutability has become a reality in this country. Since Siminn sold Mila, none of the larger undertakings operate both in retail side of the electronic communication market, except at small level to companies, and in wholesale of fixed line infrastructure in this country. Retailers generally lease access to such infrastructure, although some smaller undertakings in the countryside are vertically integrated in this respect. Mobile network operators like Vodafone and Nova do not, however, operate their own fixed line network but instead they purchase access from parties such as Mila, Ljósleiðarinn and Tengir.

392. In November 2022, ECOI commissioned MMR to conduct a consumer survey for the purpose among other things of investigating possible substitutability of mobile network solutions over electricity mains connected routers at a specific usage location and fixed network solutions in Internet solutions for residential use.

393. As in the previous two surveys from 2020 and 2022, the first question was about the household's electronic communications connection, i.e. through which kind of connection the Internet service was provided. As before, conclusions concurred with general ECOI statistics gathered from the electronic communications market, but it was remarkable that more than 5% of households named 5G and almost 5% 4G, and in addition to this, 1% named 4.5G. On this basis, about 11% of residences do not have a fixed line network connection, which harmonises well with figure 3.25 here above, which shows that the number of local loops on fixed line networks has been on the decline since 2019, and increase in Internet service over fixed line networks has been small, see figure 3.2 here above, which shows the number of subscribers with Internet service over fixed line network, despite the fact that the population increased each year and that residences increased by about 3000 per annum.

394. Then those who mentioned the fixed line solution were asked whether they considered that a mobile network solution could be a substitute for a household fixed line connection, with the explanation that a mobile network solution would be connected to a mobile phone system (4G, 4.5G or 5G) and the electronic communications connection would be received from there and not through a fixed line. Everything else in the home would be unchanged, including the set-top box, if there was one, the home Wi-Fi and connections to computers

and devices with network cables within the home. It did not mean a mobile network solution that enabled the user to move from place to place, using a device (e.g. mobile phone) to maintain the connection. About half of the respondents replied “don’t know” to this question. Of the half that gave an opinion, 53% answered in the affirmative and 47% were negative. This question therefore indicates that about a quarter of the households that currently had a fixed line connection, could be positive towards mobile network solutions as a choice for Internet connection for the home.

395. Respondents in this survey were categorised in two separate groups. Those who lived in urban locations where 5G had been available since the beginning of 2022 or for a longer period of time. The other group was those who lived in urban areas where 5G was not available at the beginning of 2022 but possibly during that year. The reason for this was to see whether there was a difference in views of those who potentially had experience of 5G for some time compared to those who were new users of 5G or not users of 5G.

396. When analysing the question on whether mobile network solutions could be an option, those who said their connection was over Ljósnet (VDSL) were more positive than those who named fibre as the household’s electronic communications connection. In the same way, those who lived in 5G connected urban locations were more positive than those who lived in places where 5G was either not available or had rather recently become so.

397. Those who answered question 2 in the affirmative, i.e. those who said they had a fixed line connection and that a mobile network connection could be an option were asked a third question. It should be noted here that the group of respondents in this case, had become rather small. The third question was on how likely or unlikely it was that the household would switch to a mobile solution if the fixed line connection increased in price to the amount of ISK 12-15 thousand on an annual basis. In this case, 55% of respondents considered that this was very or rather unlikely (35% or 20% respectively), 16% considered it neither unlikely nor likely and 29% of respondents considered it rather or more likely (18% and 11% respectively). The standard deviation of the responses is rather high, as the respondents are few, as previously stated. One can however make a more fine-grained categorisation of the responses. Households with Ljósnet (VDSL) choose the option “rather likely” in a higher proportion than others. Inhabitants in East Iceland, choose “more likely” in a higher proportion than in other regions, while at the same time, the proportion that choose “very unlikely” is also higher than in other regions, with the exception of South Iceland.

398. ECOI therefore considers that this third consumer survey gives a statistically significant indication that there is substitutability between 4G/4.5G and 5G mobile network solutions and fixed line solutions for Internet service to homes at retail level. This is supported by data gathered by ECOI on the number of electricity mains connected mobile network routers over which mobile service providers provide service, and they were about 24,000 in April 2023. ECOI considers that substitutability of mobile network solutions, commenced with 4G, as is argued in more detail later in this section, and that it thus includes 4G/4.5G and 5G, but not older mobile network technical solutions. During the coming years, the intention is to phase out older mobile network technology in this country, i.e., 2G and 3G, and this shall be completed no later than by the end of 2025. It is therefore clear that during the lifetime of this analysis, the proportion of 5G of such mobile network solutions will increase at the cost

of 4G/4.5G solutions, such that such mobile network connections will strengthen in the coming years.

399. It is clear that 11% of respondents said they only had such mobile network solutions and not fixed network solutions. ECOI statistics on the number of mobile network routers indicate that this percentage is even higher, or around 15%, but that number includes mobile network routers in summer houses, which is a question that was not asked in the consumer survey. It is not unlikely that this development will continue throughout the lifetime of the analysis. The answer to the SSNIP question strongly indicates that a small but persistent increase in fixed network connections, while mobile network connections remain unchanged, would make such a price increase unprofitable. The market is thus broader than simply fixed line network connections.

400. In December 2022, ECOI sent a list of questions to electronic communications undertakings for the purpose of gathering information about their views about potential substitutability between such mobile phone solutions over 4G/4.5G and 5G on the one hand and fixed network solutions on the other, at retail level. The undertakings' responses were received in January 2023.

401. **Siminn** consider there to be substitutability between such mobile network solutions and specific fixed line service for households and smaller companies. Substitutability only however covers fixed network solutions over copper and not fibre. Undertakings could however decide to offer 5G service in competition in areas where fibre was available with the expectation that households would use 5G as a household connection. Siminn emphasised that for substitutability to exist between two products, it was not necessary that all consumers considered the products as substitute products, but that it was important that theoretical evaluation be conducted, such as an SSNIP test. In this connection it could matter which products were on offer in each individual region, which meant that geographic analysis was very important. Siminn reiterated that the company considered there to be no doubt that 5G belong to the same market as fixed line connections, at least with respect to substitutability between 5G and copper connections. If fibre and copper belong to the same market, then 5G also belonged to the same market. Siminn competitors, i.e. Sýn and Nova, had placed considerable emphasis on Internet connections for households over the mobile phone system. In support of this contention, Siminn referred to the presentation and offer of competitors confirming what Siminn had long maintained, i.e. that mobile network solutions were a substitute product for fixed line connections, particularly on the basis of 4.5G and 5G. Siminn stated that for some time it had offered a subscription over a mobile phone system which included unlimited data volume, and with increased deployment of 5G it was expected that increased emphasis was placed on such options at Siminn. In the future, sales to households would first and foremost include data connection such that the market for mobile phone service and Internet service could be considered one and the same market.

402. Siminn then stated in reply to the ECOI question on whether the undertaking planned to offer a "pure" wireless solution in mobile networks with a fixed usage location (FWA),[86]

[86] The question was worded as follows: *Fixed wireless access (FWA) provided over a mobile network is in neighbouring states generally subject to several conditions for it to be considered as such. These are conditions such as: a) such subscriptions receive dedicated quality and space on the relevant transmitter, such as frequency*

that it was difficult to predict adoption of such service. Siminn had and would continue to offer Internet service to households over fixed line and mobile phone system. In the opinion of the undertaking, demand for Internet service over mobile phone systems would increase with increased deployment of 5G transmitters during the coming years. It was however the fact that Iceland was in the vanguard regarding fibre adoption, which was still the best connection that a household could have, both with respect to quality and stability. Siminn consider that the above specified reasons could lead to 5G service not achieving the same adoption as a household solution, as in states that where at a less advanced stage with regards to fibre roll-out. This did however not mean to say that pricing of fibre connections was immune to mobile network solutions, particularly when one took into account that mobile phone companies could place emphasis on such solutions. In the opinion of Siminn, there was a sufficient number of households ready to use mobile network solutions and mobile phone companies were likely to place emphasis on mobile network solutions, as such solutions provided better return than fixed line connections for each customer. Needs of households varied and for some, mobile network connections could be an adequate option. Substitutability did not need to mean that the products were precisely the same and return the same quality, but rather that a sufficiently large group of consumers considered the products as substitute products. Although mobile network solutions were not an option today for certain households, this was in the opinion of Siminn an option for a sufficiently large number of households for it to belong to the same market.

403. **Sýn** said that it and other electronic communications undertakings had in recent times marketed mobile network solutions as an option to fixed line service. Mobile network solutions were increasingly establishing themselves as a substitute product for fixed line networks and then, particularly for xDSL connections. The mobile network service had the advantages of working regardless of location and was therefore admirably suited in the countryside and in areas where there was no access to fibre. Time would however need to tell whether mobile network solutions could provide a full substitute for fixed line service, as the technical characteristics of these two services were still to a certain extent different. For the purpose of example, the company mentioned that access to mobile networks solutions and speed were dependent on the number of connected users.

404. **Nova** answered that mobile network solutions could provide substitutability for fixed network solutions in Internet connections to households and companies, but one needed however to take into account the varying circumstances of users. Factors with a negative impact on mobile network solutions were particularly related to whether the place of use was unsuitable. Advances in electronic communications technology meant however, that mobile networks continuously achieved better distribution and speed. Equipment such as aerials had for example been introduced that augmented quality of mobile network solutions in sparsely populated areas and where there was a long distance to the next transmitter. According to Nova measurements, the adoption of 5G service had been successful in areas where fibre was not available. In the opinion of Nova, there would on the other hand not be a competition

range, performance, or traffic control to ensure adequate quality of service, b) that the subscriber has in written conditions a defined maximum and minimum performance, c) that the subscription is sold to a specific address and only works in the area of a specified transmitter, (i.e., that it is not possible to move the equipment, for example, to a summer house) and d) such subscriptions are not considered to be mobile network subscriptions. But SIM cards shall however be considered to be SIM cards in use."

between fibre and 5G in the future. The undertaking said that it structured pricing of such mobile network solution in the same manner as for fixed line connections. When one considered the future, one could expect that sharing of available bandwidth could potentially lead to it being possible to include service for mobile network solutions and fixed line service in the same subscription package.

405. **Hringdu** considers that such substitutability had to some extent been realised. Such substitutability was however dependent on the usage pattern of customers. The company reiterated however that mobile network solutions were doubtless convenient for many, in particular, the older generation. Tests had demonstrated that mobile network solutions had a lower speed in upload and ping than fixed network solutions. Today, Hringdu saw mobile network solutions as a B-product, which meant that this service was a reserve capability for companies or a less ideal solution for households that did not have access to fibre. Sufficiently substantial tests have not been yet conducted to show the extent to which download speed fluctuates at peak load hours, and the future would need to clarify how well 5G development would progress. In the opinion of Hringdu, there will be an increase in use of mobile network solutions as a home network and for that reason, Hringdu offers this service, but considers fixed line service to be a more attractive option.

406. **Hringiðan** considered that mobile network solutions could provide substitutability for fixed line connections in Internet service for homes and small or medium companies. The company also considered that 4G mobile network solutions could not provide VDSL connections or fibre connections with substitutability, but 5G and 6G could rather do this.

407. **Snerpa** said that 4G and 5G were to some extent substitute products for fixed line connections, though various factors had an influence on the substitutability. In the first case, one could conclude that mobile network solutions rather provided substitutability in the countryside than in large urban nuclei. The main reason for this can be attributed to the fact that performance of mobile network solutions decreased as the number of users increased. Secondly, electronic communications undertakings had increasingly relied on data transfer income rather than voice telephony revenue which means that streaming service (OTT) was therefore unpopular over mobile network service. Thirdly, operating costs for backbone for transmitters were significant, which tended to result in electronic communications undertakings made savings on performance for each individual user, such that there was less to share. Snerpa reiterated that 5G transmitters could provide very much bandwidth, which made carrying capacity of backbone a deciding factor in quality of service rather than the number of users on a transmitter. Fourthly, the reach of 5G transmitters was less than in the case of 3G and 4G. This could have result in the need to concentrate distribution by installing more transmitters with the attendant costs. Snerpa finally stated that it had no experience of marketing mobile network service and could thus not make comments about it other than those above.

408. **Mila** said in its response from January 2023 that mobile network solutions could provide substitutability for fixed line connections in Internet service for homes and small or medium companies. In support of its response, Mila pointed out that Nova had for example offered home connections that cost the same whether the customer used fibre from Ljósleiðarinn or a connection with a mobile network solution. Mila also stated with respect to the ECOI question on whether it plans to offer “pure” wireless solution in mobile networks

with fixed wireless access (FWA), that it had not offered such solutions up to this point in time [...]. In the opinion of Mila, it was not possible to make it a condition for the substitutability between mobile network solutions and fixed line connections, that electronic communications undertakings tied the use to a specific transmitter. It was not generally practiced on the Icelandic electronic communications market to arrange the connections in such way and if ECOI were to decide to delineate the market in that way then a significant error would emerge in the administrations market analysis, as it was undisputed that most electronic communications undertakings offered mobile network solutions for homes instead of xDSL and fibre local loops.

409. In another letter from Mila to ECOI, dated 2 May 2023 it seems that the undertaking's position had to some extent changed. The company stated that after a detailed examination, it was the company´s view that despite the fact that Internet service over mobile network had been making its mark in the service offer on the retail market, and could possibly be considered a substitute product, the same did not necessarily apply to the wholesale market. It was the company´s view that the proportion of connections over mobile networks could not go very much above 5-7% in areas where there was widespread fibre deployment. As distribution of fibre access networks in Iceland was among the best in the world, Mila considered that FWA probably only had limited substitutability or could possibly be considered additional service that served limited and/or temporary user needs. In the opinion of Mila, the superiority of fibre access network was so great that users who had the choice between a connection over fibre or mobile network would in all likelihood, choose the fibre connection. In order to show whether substitutability really existed, one would have to embark on detailed research which included, among other things, conducting an SSNIP test.

410. **Ljósleiðarinn** considered that mobile network solutions could provide substitutability for fixed line connections, whether one considered homes or small and medium companies. This substitutability had existed for some time, particularly with the advent on the one hand of 4G and on the other hand, upgrading to 4.5G, and not least with the arrival of 5G solutions. In support of its position, Ljósleiðarinn pointed out that retailers had offered mobile network solutions along with fixed line connections. There was at least a chain of substitution between xDSL, mobile networks and fibre connections, as they all offered the above specified solutions for connection to the Internet.

411. **Tengir** considered that mobile network solutions could not provide fixed line solutions with substitutability, with respect to Internet service to the home and to small and medium companies. The company considered mobile network solutions to be a good and useful addition where it was not possible to access a fibre connection. Instances had regularly occurred where customers cancelled their fibre connection and moved the service over to mobile network solutions. There was however a large group that would return to a fibre connection because the mobile network solution had proved inadequate. This particularly applied to customers that were studying or working from home and that regularly attended distance meetings or streamed lectures or comparable material over the Internet. The demand for fibre connections had furthermore significantly increased at the beginning of Covid-19, to which the company attributed the pandemic. Customers that requested fibre connection from Tengir, and that had previously tried mobile network solutions, spoke about use of mobile network solutions going well if one or two devices were in use, but that as soon as use was in excess of this, the connection was so slow that the set-top box would freeze and

connection would be lost with the Internet. Tengir therefore considered that the mobile network solution was a good and important possibility, but that a mobile network solution could not be considered the same product as a fixed line solution. In the opinion of Tengir, it was most appropriate that fibre should be deployed to the extent possible, i.e. as close as possible to the end user. In this way, the connection to the customer would be ensured with best quality, and wireless solution should be used to handle data transfer within the space.

412. Judging by the responses from the electronic communications undertakings, most believe that substitutability has become a reality between mobile network solutions that connect with an electricity mains connected router on the one hand and a fixed line connection on the other hand, at least with VDSL. Undertakings that consider substitutability to be realised, do not however agree on where substitutability begins, i.e. with 4G, 4.5G or 5G. One must however keep in mind that responses from parties to the market may be coloured by the interests they are protecting, which can be varied. ECOI agrees with the Siminn comments to the effect that for substitutability to exist, the products do not need to be exactly the same or to provide the same quality, but rather that a sufficiently large group of consumers consider the product to be a substitute product. Although mobile network solutions may not be an option today for certain households, mobile network solutions are an option for a sufficiently large number of households for it to belong to the same market. In the opinion of ECOI, the conclusions of the above specified consumer survey - including the SSNIP test and statistical data held by ECOI and as is explained here above - show that there is a pricing pressure between the solutions, such that a small but non-transitory price increase in fixed line connections while at the same time, the price for mobile network solutions remains the same, would not be profitable. This means that the service market in question at retail level is broader than simply Internet connections over copper connections with VDSL equipment, cable systems and fibre systems.

413. In some locations in Europe, it has been assumed that there is only substitutability between fixed line network solutions and pure FWA solutions. Such solutions are not practised in this country, and it is unclear whether this will become the case. On the other hand, in other states the path has been chosen to use as a reference the equivalent of such solutions that do not need to fulfil as strict requirements as those for “pure FWA”, where the criterion is for equipment connected to specific premises, i.e. electricity mains connected network router, which can actually be moved between locations. Given circumstances in this country, ECOI considers it appropriate to use such an arrangement of mobile network solution, as a criterion in substitutability assessment. ECOI collected for the first-time information on the number of such solutions in cooperation with the three mobile phone undertakings, Siminn, Sýn and Nova, in April 2023. After significant work and consultation with the undertakings in question, it was possible to locate the equipment in question at a specific point in time to specific mobile phone transmitters in order to be able to categorise them by municipality. ECOI considers the conclusion to be sufficiently reliable to use as grounds in this analysis. In the next round of data collection, in April 2024, ECOI will, in cooperation with the mobile phone companies, develop methodology that calculates status over a longer period of time for it to be possible to eliminate equipment that is moved between municipalities.

414. ECOI conducted a detailed examination of whether the substitutability in question commenced with 4G, 4.5G or 5G. In the opinion of ECOI, it is clear that such substitutability

began at the latest with 5G and most parties to the market agree with this. ECOI considered it, however, to be important to investigate whether substitutability had commenced with 4.5G or even immediately with 4G. After having first examined 4.5G, it was the ECOI conclusion that substitutability had commenced with the performance that such technology or its equivalent provided. Many of the electronic communications companies also agreed with this.

415. Mobile phone technology has developed with what are called generations, 2G, 3G, 4G and 5G. During the lifetime of each generation, there are upgrades to the underlying systems that increase their technical capacity. What has been called 4.5G does not appear to have been defined in the mobile phone sector as a separate technical generation, but rather a marketing name from some mobile phone equipment manufacturers for such an upgrade. Other manufacturers of equipment offer same or similar upgrades without calling them 4.5G. Mobile network companies have thus not all been able to differentiate user equipment, i.e. the electricity mains connected network router in homes or user working terminals, depending on whether they are connecting over 4G or using an upgrade which is either called 4.5G or is its equivalent, as there is no fixed definition.

416. After having examined 4.5G with respect to the substitutability in question, ECOI made a detailed examination of whether substitutability could have started immediately with 4G. Few electronic communications companies held this view. It is however the ECOI conclusion that there are very strong indications that substitutability started with 4G. The main indications and/or arguments are the following:

1. ECOI statistical data shows that 4G electricity mains connected routers are still very much used and this is confirmed in the above specified consumer survey. One can however expect that as the lifetime of this analysis progresses the proportion of 5G routers will increase at the cost of 4G routers.

2. The consumer survey asked questions about 4G, 4.5G and 5G.

3. ECOI data indicate that since 2019, when Nova began to place serious emphasis on offering 4G and later 4.5G solutions as an option for households instead of a fixed line connection, the number of Internet connections has almost stopped growing despite a natural increase in homes, companies and inhabitants. This indicates that such 4G connections through routers, have immediately started to be an option to fixed line connections to some degree, which then increases with the advent of 4.5G and not least, now with 5G. Internet connections over a fixed line network would otherwise have increased more than has been the case in recent years, see among other things, figure 3.32 here above.

4. In this way, one also captures technical upgrades to 4G that do not use the name “4.5G” but give a comparable conclusion. This means there is less risk of discrepancy in the analysis arising from which connections are included.

5. Apart from the above specified uncertainty about what should be considered 4.5G, two of the three mobile phone companies, including Nova, which has by far the greater share in the solutions could not separate the number of subscribers with 4.5G

from 4G in their data submissions to ECOI. It would therefore not have been possible to take into account the 4.5G share when calculating market share, except possibly with some very inexact guesses. ECOI considers it inappropriate to apply such inexact methods when calculating market share in market analysis, as the market share has a major impact on the conclusions of each market analysis, including potential designation of an electronic communications undertaking with significant market power at a national level or in specific regions, and thus on imposition of obligations on such a party.

417. With all of the above in mind, ECOI considers that consumers in sufficient numbers now see mobile network service over 4G/4.5G and 5G mobile networks through electricity mains connected network routers at a specified place of use, as substitute service for fixed line connections over fibre, cable system or copper network where VDSL equipment has been installed and that they thus belong to the same retail market as argued here above. The main issues that support this conclusion are:

1. There is a demand-side substitutability between these solutions that is confirmed with ECOI statistical data and conclusions of the consumer survey. The consumer survey indicates that about 11% of users of Internet service use such mobile network solutions, and therefore do not purchase Internet service over a fixed line network. ECOI statistical data indicates that this number is higher, up to 15%. This number may constitute some overestimation depending on whether and to what extent network routers that are moved between locations may be included in the first ECOI data collection on such equipment.

2. Since 2019, there has been stagnation in the increase in Internet subscriptions over fixed line networks, and not an increase in step with the natural increase in inhabitants, homes and companies.

3. The three mobile phone undertakings market such mobile network solutions as an option for homes and have among other things started to offer unlimited data volume at rates competitive with fixed line subscriptions and even slightly less expensive in some instances.

4. Demand has been increasing for the mobile network option in question during the last months and years.

5. Increased convergence, both commercially and technically, is becoming a reality between mobile networks and fixed line networks, among other things in performance and capacity to deliver Internet service that fulfils consumer demands, see for example page 33 in the above specified EU Commission working document from 2020 and the responses of a number of parties to the market.

6. Deployment of 4G/4.5G networks is very extensive and deployment of 5G is in full swing and will be so during the coming years.

7. The position taken by most electronic communications undertakings supports this conclusion, with the exception of which mobile phone technical generation substitutability should be linked.

3.2.4.2 Wireless access with fixed location (FWA) and service through satellite

418. FWA are connected to receiving equipment, aerial and end user with wireless transmitters. To achieve best reception quality, one needs to direct the user aerial at the transmitter. Transmitters are then connected to the backbone network with fixed line connections. Users' receiver equipment is thus fixed, and the service is not mobile as is the case with mobile network service. The most common standard in connections like this is WiMAX. This is another technology than mobile network service with a fixed place of usage with electricity mains connected network router that was discussed in section 3.2.4.1 here above.

419. Fixed wireless connections can provide up to 50 Mb/s speed, but there are many factors that can influence the speed and quality of connection, such as weather conditions, interference and the number of users connected to each transmitter. In other respects, the service is similar to a fixed line connection and the above specified mobile network connections, and it can among other things carry TV service.

420. In this country today, there are 3 parties that offer fixed wireless connections. The number of users is however very small, totalling 244 users with these three service providers. Some service providers choose to direct their customers to other solutions if they are possible, which has led to a gradual decline in customers using the service during recent years and companies have even stopped mentioning wireless service on their websites and direct their customers to the fixed line or mobile network solutions that they offer. Customers of this service were about 1,294 at the end of 2017 and were only 244 at the end of 2022.

Table 3.2 Development of Internet service through wireless connection 2014- 2022

	2016	2017	2018	2019	2020	2021	2022
Fixed wireless access (FWA)	793	1294	560	391	274	247	244

Source: Electronic Communications Office of Iceland

421. The pricing of the service is in a similar range as for fixed line connections, which is between ISK 8,000-12,000. Then it is necessary to purchase and install an aerial at the place of use, which involves some cost, but there is no monthly line charge.

422. In light of the fact that there is little demand for the service, and by taking into account the limitations to which it is subject, ECOI considers it unlikely that users would be prepared to switch from a fixed line connection or mobile network connection through an electricity mains connected router to such a fixed wireless access in the event of a small price increase for the former. The service is first and foremost used when it is not possible to provide another connection, given current circumstances. It is therefore mostly used in summer houses and homes in the countryside where there is no fixed line connection or mobile network connection that carries significant bandwidth. Locations where such circumstances pertain are rapidly decreasing with increased distribution of fibre and mobile networks in the countryside.

423. One company still has a frequency licence on the wireless spectrum, but it is only in force until the end of 2024, and it is planned that the frequency range will then be used for something else, such as 5G. The other two companies provide the service on an open frequency range where there is no need for a special frequency licence. This situation makes it likely that the importance of the service will decline even further for the duration of this analysis, and it is not inconceivable that it will no longer be on offer at the end of the duration.

424. For the above reasons, ECOI considers it unlikely that fixed wireless access belongs to the same market as fixed line connections, and in any event, they are so small in number that they have no significance in connection with analysis of the relevant retail market, nor markets being examined here (market 3a and market 3b).

425. The same applies to Internet connections by satellite, as they have been very little used in this country. As is stated in section 3.2.1 here above, it is however not inconceivable that there will be a change in this respect during the lifetime of the analysis, though ECOI is not aware of homes or companies in this country purchasing such service up to this point in time. Reference is made to this section. Then it is among other things stated that a new satellite service which should appeal better to general users is now on the market, see among other things, service from the companies Starlink and OneWeb, which has started to offer connections through low earth orbit satellite swarms (LEO constellation).

426. Such service provides adequate performance and quality to be an option as a substitute for fixed line connections and connections through electricity mains connected Internet routers over mobile networks, but although monthly pricing for such service with at least Starlink is competitive with the above specified fixed and mobile solutions, ECOI considers that this is not a case of substitutability because of the high start-up costs for homes and companies to install the appropriate aerial and internal cabling. All things being equal, ECOI considers such service is not competitive in price with the above specified solutions. In addition to this, it would make no difference to the conclusion of this analysis to prescribe substitutability in this connection, given both the current status and taking into account likely development throughout the lifetime of this analysis. ECOI, will however monitor this development and react in an appropriate manner if this service achieves significant distribution during the lifetime of the analysis.

3.2.5 Conclusion on definition of the relevant service market at retail level

427. The retail market based on wholesale services on markets 3a and 3b constitutes user connections at a fixed location that enable users to access the Internet and related service.

428. Taking into account the discussion here above, ECOI considers that a more specified service provided over a fixed line belongs to the relevant retail markets, whether is the case of fibre, cable system or VDSL service over copper wire. Varying xDSL services that are on offer in copper networks can provide varying performance capacity. As has been stated here above, ECOI considers that Internet service over ADSL equipment no longer provides substitutability for Internet service over fibre, cable system on copper network based on a VDSL equipment, or at least will not do that, as the lifetime of the analysis progresses. In the opinion of ECOI, ADSL service does not belong to the relevant retail market.

429. Cable systems that carry TV content by coax have never enjoyed wide distribution in Iceland. They were sometimes developed on a very limited scale before free radio and TV stations began operations, where they distributed content within a specific district or part of a town. The systems ceased operations when access to TV content was better and where demand was met in a general manner. One system is still operating, and it distributes TV content for the holders of the rights to the content to subscribers in Reykjanesbær. The company also operates an Internet access service through a cable system. As the system has very limited distribution, in fact only one district within one municipality, it has a negligible share at a national level. The number of Kapalvæðing Internet connections in the cable system in question is only [...]. Nor is the share of the company in retail Internet service significant within its operational territory, at about [...]% of fixed line connected customers in the municipality at the end of 2022, and customers on the company's cable system are small part of this, about [...]% of fixed line connected customers in the municipality in question. Mila has operated a VDSL network in the municipality in question for some considerable time and in recent years, Mila and Ljósleiðarinn have jointly deployed fibre in the municipality in question which will be completed in the year 2023 according to the companies' deployment projections. This will doubtless further diminish the importance of the cable system in question, and in addition to this, Kapalvæðing is now also providing retail Internet service over the Ljósleiðarinn network during recent months. It is nevertheless the conclusion of ECOI that such connections through a cable system belong to the relevant retail market.

430. Mobile network service can be used to receive Internet connections with relatively broad bandwidth and the capacity of such networks is continuously increasing, most recently with 5G. ECOI considers that there is demand side substitutability between Internet service provided over fibre, cable system and VDSL connected copper and certain Internet service over mobile networks, i.e. through electricity mains connected network routers on a specified place of use, in the case of 4G/4.5G and 5G mobile networks.

431. Fixed wireless access connections can carry service which is in many respects comparable to fixed line connections. On the other hand, small demand for the service indicates that it is not in reality a substitute service. Negligible use of fixed wireless connections leads ECOI to conclude that there is no reason to further examine this service type in this analysis, as this would not have any impact on the analysis or on its conclusion. The same applies to Internet service through satellite.

432. Connections for households and companies are in many instances very similar or have the same characteristics and can therefore belong to the same market. Some companies have on the other hand, a need for special connections with more bandwidth and/or a higher service level. Such connections belong to a separate market for high-quality connections (Market 4/2016).

433. The ECOI conclusion regarding retail markets for standard broadband access is that the following services belong to the market:

- Broadband connections over copper network with VDSL technology.
- Fibre connections.
- Connections through cable systems.

- Connections through 4/4.5G and 5G (and future mobile phone generations) that are provided through electricity mains connected network routers.

3.2.6 Competition in retail markets

434. In Article 15 of the Regulation on market analysis in the field of electronic communications no. 556/2023, it states that the point of departure for market analysis at wholesale level shall be an assessment of related retail market or markets. If it is considered that there is active competition on the relevant retail market, without wholesale obligations needed on related wholesale market or markets, it is not required to impose obligations on the relevant wholesale market or markets.

435. In the working document to the EU Commission Recommendations from 2014, on which the ESA Recommendations from 2016 are based, it is stated that before wholesale markets are defined, one should assess whether there would be active competition at retail level if obligations on the underlying wholesale markets were not in place (the modified greenfield approach). If it is not thought that there would be active competition under such circumstances, then the wholesale markets should be examined, and this examination should commence with the market that is first in the value chain (market 3a). It shall subsequently be evaluated whether there is a need for obligations at the next wholesale level (market 3b). In exceptional cases, if obligations on the wholesale markets in question would not suffice to create active competition on the retail markets under discussion, it would be possible to consider obligations on the retail markets in question, see Article 61 of the Electronic Communications Act no. 70/2022.

436. In paragraph 3 of Article 2 of the Regulation on market analysis in the field of electronic communications it states that if competition is considered to be active on the relevant retail market and/or a specific geographic part of that market, without obligations on a related wholesale market, obligations shall not be imposed on undertakings on that retail market, nor on related wholesale markets and nor should obligations that have already been imposed be maintained. In paragraph 4 of the Article, it states that if there is no active competition on the relevant retail market, and/or on a specific part of the market, nor on the relevant wholesale market, an undertaking, one or more, shall be designated as having significant market power on the relevant market, or on part of the market. If there is a need for obligations they shall first and foremost be imposed at wholesale level, and only in tightly defined, exceptional instances at retail level.

437. In paragraph 5 of Article 2 of the Regulation it is stated that markets shall be analysed, having taken into account likely development in the near future (forward-looking) to the extent possible. This means that when ECOI conducts market analysis, the Administration shall assess likely development on the relevant retail market. If there were no obligations at wholesale level and having all of the following in mind:

1. Whether the relevant market tends towards active competition.

2. Competitive constraint at retail and wholesale level, regardless of whether this results from electronic communications networks or another kind of service or software that

provides substitutability from the point of end user, and regardless of whether such competitive constraint is part of the relevant market or not.

3. Other kinds of measures that ECOI has taken, and that are not listed in this Regulation or in Chapter IX of the Act on Electronic Communications, but that have an impact on the relevant market, or related retail market during the planned period of validity of the analysis in question, including obligations imposed in accordance with Article 35 (access to facilities), Article 36 (right to interconnection or access) or Article 38 (obligations without prior market analysis) of the Act.

4. Obligations imposed on electronic communications undertakings on another market or other markets than the relevant market which is being analysed.

438. Market analyses in the EEA have generally shown that on the retail markets for standard broadband connections, there would be a lack of competition if obligations were not in place on the underlying wholesale markets (one of them or others), particularly in states where there is only one network with national coverage. In this country, it is only the Mila network which has close to national coverage, when one considers the company's distribution of copper network where VDSL equipment has been installed and fibre network, and it is therefore likely that the situation on the relevant retail markets in this country would be similar to what is generally the case within the EEA, if obligations at wholesale level were not in place. Mila's position on the relevant wholesale markets is very strong in many areas, although Ljósleiðarinn has gradually made significant progress in the undertaking's operational territory in Southwest Iceland. As have Tengir in the North and East parts of the country and Snerpa in the West Fjords. In some municipalities, Ljósleiðarinn and Tengir now have more market share than Mila. In Section 5 here below there will be discussion on market share on the relevant wholesale markets by municipality and geographic markets will be defined. Then it is among other things stated that the status on the relevant wholesale markets varies by region.

439. Siminn has for a long time been the largest and most powerful company on the relevant retail market in this country and still is, and in addition to this has very strong position when one considers the sale of bundles with Internet service. The company´s market share was fairly stable for many years and has not decreased much between the years. The company's market share at a national level was something over 46% at the end of 2020, when one only considers Internet connections over fixed line network. At the end of 2022, the Siminn market share of national level was just below 42% when one takes into account the above specified mobile network solutions, but Siminn has a small share of those solutions, at least for the time being. On the other hand, if one only considers fixed line network connections, the Siminn share had reached 45% at the end of 2022. At the same time, Sýn had 24.2% market share. When one only considers the mobile network connections in question, Nova had 23.4%, Hringdu had 8.7% and others had 2.2%. As is the case at wholesale level, the market share of retailers varies significantly by region. The Siminn position was for example extremely strong at many locations in the countryside, even between 70-80%, but weaker in the Capital City Area where there is more competition. In section 5.4 the status on the retail markets in question will be broken down by municipalities, and this status could have an impact on the conclusions of geographical definition of the relevant wholesale markets.

440. In 2020, Siminn made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn fibre network and Siminn began providing its service over the Ljósleiðarinn network on 25 August 2021. In the light of the Siminn service agreement with Mila after Mila was sold to Ardian it is unclear what emphasis Siminn will place on providing service over the Ljósleiðarinn network, but because of the agreement with Ljósleiðarinn, and all things being equal, ECOI considers that Siminn has an opportunity to grow on the Ljósleiðarinn network and also in the provision of the above specified mobile network solutions. Those Siminn competitors that have improved their market share on the retail market, have in recent years apparently not been gaining many customers from Siminn. For example, Nova seems first and foremost to have encroached on Sýn market share during the past years.

441. The decision on significant market power of one party shall be based on interaction between a number of factors that ECOI assesses as appropriate in accordance with the characteristics of the relevant market, see paragraph 1 of Article 18 of the Regulation on market analysis in the field of electronic communications. According to paragraph 2 of the Article, it is important when assessing market power to take into account the market share of the company that may have significant market power on the relevant market, and the competitors of this company, and furthermore to take into account the competitive pressure that potential competitors can provide in the mid-term. Company market share is an important factor in market analysis and gives the first indication of market development and the proportional importance of the various electronic communications undertakings operating on the relevant market, see among other things, paragraph 3 of Article 18 of the Regulation. It is however not the only factor that decides whether an undertaking is designated as having significant market power, but it can give strong indications about whether such a situation exists or not.

442. One should interpret market share with the relevant market circumstances in mind, and particularly taking account of the function or the dynamic of the competition in place on the relevant market and the extent to which service is differentiated. Significantly high market share, that is to say over 50%, is considered to be a strong indication of significant market power except in exceptional circumstances, see paragraph 4 of the above specified Article of the Regulation. Market share can on the other hand only act as an indication of the above if competitors cannot increase their offer sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5 of the Article, one must, when evaluating market power, take into account that under certain circumstances, an electronic communication undertaking with high market share cannot operate to a significant degree, independent of customers, with a strong bargaining position.

443. It states in paragraph 6 of the Article that one should also take into account that an undertaking may have significant market power despite having a lower share than 50% of the relevant market. It matters for example whether the relevant company is generally powerful with respect to capital, technology, infrastructure and offer of goods or service. The conclusion on significant market power is based on overall assessment were both market share and factors related to market structure are meaningful. It is not likely that market power exists if market share is less than 40% on the relevant market. There can however be special instances where competitors are not in a position to react effectively to behaviour of an

electronic communications company that is below this limit such that an electronic communications company can be considered to have significant market power although it has less than 40% market share. In paragraph 7 it states that if a market share is high, but under the 50% reference level, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be conducted before an opinion is reached on the existence of significant market power. Despite the powerful entrance of Nova to the market in question some years ago, and the merger of Vodafone and 365 miðlar in 2017, the Siminn market share has not declined to any significant extent at a national level during the last years and was as stated above, just over 45% of fixed line connections at the end of 2020 and more than 41% if electricity mains connected network routers through mobile networks are included. At the same time the company's main competitor, Vodafone, lost significant market share which stood at just over 24% share of fixed line connections after having reached 37% at end of 2017. Vodafone/Sýn maintains its share when mobile network routers are included. At the end of 2022, Nova had 17.7% market share if one only considers fixed line connections and had 23.4%, with the above specified mobile network connections, as it has by far the largest share for the solution up to this point in time at least. At the same time, Hringdu had 9.8% market share without the mobile network solution in question and 8.7% with that solution included.

444. The Siminn offer of the Heimilispakkinn bundle, which commenced in October 2015, which is at least a triple play fixed line service and even a quad play, with mobile phone service where customers of the content provider are directed at their own service or service of related companies at advantageous terms, seems to be one of the reasons for this situation on the retail market. The success of the Sjónvarp Símans Premium content provider, which is part of the bundle in question, seems to have played a very significant role in this matter. It doubtless strengthens the Siminn position that the company acquired three-year broadcasting rights to English football from and including the season, which began in August 2019, for three years, and retained this in the next auction, such that Siminn will have the broadcasting rights until the summer of 2025. These rights had for many years been held by Siminn's main competitor, Vodafone. The Siminn breach of paragraph 5 of Article 45 of the Media Act, which appears to have improved Siminn's position on the retail markets in question, has been covered here above.

445. As is stated in later sections in this analysis, ECOI considers that there are still significant access barriers to the wholesale markets for local and central access in certain areas. Internet service will not be marketed at retail level unless the service provider in question has access to wholesale inputs on markets 3a and/or 3b. One can therefore only come to the conclusion that if there were no access obligations at wholesale level, there could be significant access barriers on the retail market in the areas in question, though these access barriers have doubtless diminished somewhat after Siminn sold Mila. Even though obligations are in place, one can identify access barriers to retail market for Internet connections in specific areas.

446. On 24 November 2022, shortly after the Siminn sale of Mila was finally confirmed on 30 September 2022, Siminn sent a request to the CA, that the conditions imposed on the company on the basis of the settlement with the CA, see CA Decision no. 6/2015, be rescinded. Siminn grounds were that the conditions of the settlement should be rescinded because of changed circumstances, subsequent to the merger case, as Mila and Siminn were

no longer vertically integrated and also as the position of the company on electronic communications markets had weakened, mainly where the company had lost market share.

447. With the CA Decision no. 24/2023, dated 3 July 2023,[87] CA came to the conclusion that there were only reasons at this stage to rescind a number of provisions of the settlement in question in addition to those that were rescinded according to a settlement that CA made with Ardian and Mila on the occasion of Siminn selling Mila, see CA Decision no. 16/2023, dated 22 May 2023.[88] There were 16 specified provisions that CA considered still important that were retained vis-à-vis Siminn, including provisions on the sphere of operations of Siminn wholesale, on operational separation between wholesale and retail access to systems, service at Siminn wholesale, planned changes to systems and service of Siminn wholesale, differentiation of service items and the ban on agreements that inhibited competition. Among conditions that were, among other things, rescinded were those on a special monitoring committee for the settlement and that Siminn should adopt a competition law plan.

448. With respect to further rescinding provisions in the settlement in question, CA considered it important to gather further experience of the changes that occurred on electronic communications markets with the Siminn sale of Mila and to resolve existing complaints and investigations that related to Siminn. Following this, CA was prepared to take a new look at whether there were reasons to maintain individual conditions.

449. In paragraph 348 of the above specified CA Decision no. 24/2023, it is stated among other things that Section 3 will discuss definition of markets in the case and Siminn's position on these markets. More specifically, these were markets for mobile phone service, voice telephony service, Internet service and Internet connections, TV service (subscription TV), purchase of TV content (English football) and possible market for electronic communications bundles.[89] On most of the above specified markets, Siminn's position was strong in the sense that its share was generally high compared with other competitors. Where the company did not have the highest share, it had the next highest, which actually only applied in the case of subscription TV, and the company share in the mobile phone market was similar to the Nova share. In other areas, i.e. in voice telephony, Internet connections (40-45% market share),[90]

[87] https://www.samkeppni.is/urlausnir/akvardanir/nr/4372.

[88] With the settlement, all conditions on Mila according to the settlement made with CA Decision no. 6/2015 were rescinded, while the new settlement with Mila constituted a review of the conditions of the older settlement that related to Mila and new conditions were set on the basis of new ownership of Mila. The new settlement with Mila did not however constitute review of conditions of the older settlement that related to Siminn.

[89] In paragraph 183 of the decision, it states that with all of the above in mind, it was the CA assessment that Siminn enjoyed significant dominance on the potential market for bundles of electronic communications and TV service (particularly triple play). There was clearly oligopoly in this field and the Siminn share had been about twofold or threefold compared to other competitors during the years 2016-2022.

[90] It was also stated in paragraph 90 that in presentations from the Siminn adviser for the sale of Mila (and also for Ardian at a later stage) the assessment was presented that Siminn was in the vanguard on this market, despite growth by Nova and Hringdu. CA considered that this information that Siminn and Ardian used as grounds in connection with the sale of Mila, were both in accordance with information held by ECOI on information that had been collected for CA in the merger case. CA considered that Siminn share, whether this was based on revenue or number, was sufficiently high for it to provide strong indications on a position of market dominance and then, particularly because it was in the range of two or threefold that of nearest competitors.

in parts of TV markets, bundles markets and in the sale of English football, Siminn share was the highest and, in most instances, twice or three times that of the nearest competitor.

450. Paragraph 349 contains the CA assessment that the above information on market share provides strong indications on Siminn's potential market dominance position on some of the above specified markets. One should also take into account that a short time has passed since the changes that resulted from Siminn selling Mila to Ardian. There was therefore no experience of the structure that these changes constituted. This experience could at a later date call for a review of conditions in other respects.

451. Paragraph 350 states that one of the objectives of the settlement from 2015 had been to assure Mila independence of Siminn. Separation between the companies, had among other things been prescribed there to a significant degree. For that reason, the change that occurred to market structure and to the relationship between Siminn and Mila, subsequent to the Siminn sale of Míla to Ardian has been less than otherwise would have been the case. For this reason, the material changes that the sale would have constituted was limited in this respect.

452. In paragraph 351 it states that when reviewing the settlement, one must pay particular attention to those matters that CA was processing, and was still processing, and that related to potential breaches of the provisions of the settlement, that had all concerned in one way or another conduct on retail markets for electronic communications service where Siminn operated and not Míla. It indicated, in the opinion of CA, that it was important to maintain conditions of the settlement that related to Siminn, at least until those matters were resolved that were still being investigated by the competition authorities.

453. In paragraph 352 it states that despite the sale of Mila and that the direct ownership relationship between the two companies had been severed, a wide-reaching wholesale agreement was still in force and an agreement on funding between Siminn and Mila. In the opinion of CA, these agreements constituted a strong connection of interests between the companies that could manifest themselves in various ways. It was therefore at a minimum, not timely to assert that the impact of the vertical integration no longer existed.

454. It was the CA conclusion that the above did not provide reason to rescind all provisions of the settlement that related to Siminn. It was actually important that they remained in force while experience was gained of the changes that had occurred to the structure of the market with the sale of Mila and there was also the matter that outstanding cases that related to alleged breaches by Siminn of the conditions had not been resolved. It had not been demonstrated that such significant changes had occurred to electronic communications markets in this country that would provide reasons to rescind important material conditions that bind Siminn pursuant particularly to Chapters IV and V of the settlement. When making this assessment, CA paid particular attention to:

a. The Siminn position on important markets on which the company operated was still strong.

b. The wholesale agreement between Siminn and Mila and other connections between the companies constitute continued strong common interests, which

have at least in part the characteristics of vertical integration and that could have an impact on the markets on which Siminn operates.

455. It must be considered certain that the conditions that rest on Siminn on the basis of the settlement from 2015 are significant in connection with its purpose. Outstanding cases and complaints indicate that there could still be a risk of behaviour by Siminn that inhibits competition, that the conditions in force are intended to counteract.

456. With CA Decision no. 30/2023, dated 28 July 2023, the institution made a provisional decision related to a probable breach by Siminn of competition law, by denying Nova the wholesale and distribution of Siminn Sport which included broadcasts from English Premier league football. Siminn was instructed to desist from such behaviour against Nova and to immediately make an agreement with the company on wholesale and distribution of Siminn Sport with English football. CA considered it particularly important that the CA intervened and stopped this behaviour without delay. The provisional decision was to apply until 31 January 2024.

457. It was stated that from the time the Siminn acquired the right to broadcast the English Premier league in 2019, Siminn had offered the material through Heimilispakkinn and Sjónvarp Símans Premium. Siminn had also offered the service in a separate subscription, and Sýn and Nova had done the same by purchasing the material in wholesale and offering it to their customers. Now Siminn had refused to make a new distribution agreement with Nova for showing Siminn Sport, which meant that Nova customers had no possibility of purchasing a subscription to English football.

458. CA considered that Siminn's behaviour constituted denial of sale by a company that controlled an important and popular product for resale, and that it would constitute a damaging impact for competition on the electronic communications and television markets in this country if Nova could no longer offer its customers English football. CA also considered that it constituted discrimination against competitors as Sýn was still able to offer its customers English football, but not Nova. CA considered that Siminn had market dominance on the market for wholesale access of English football, and that this behaviour was in breach of the provisions of competition legislation, which banned abuse of a dominant market position. CA considered that the behaviour in question was neither based on reasonable or objective grounds. The Siminn behaviour was conducive to damaging competition and that competitors that would have been three were now reduced to two.

459. With the above in mind, and as will be further argued, ECOI considers it clear that competition is not active on the retail market in question, except possibly in specific areas,[91] despite wholesale obligations on Mila on the above-mentioned wholesale markets. The position on the retail market in question would doubtless be even worse, even in areas where there was more competition, if it had not been for the above specified wholesale obligations that rested on Mila for years. For this reason, ECOI considers it important to continue analysing the situation on the wholesale markets in question.

[91] A further assessment will be made on whether active competition prevails in specific areas at retail level in section 5.4 here below.

460. The above indicates emphatically that if it were not for wholesale obligations, network operators in specific areas, where competition was inadequate on retail markets, could possibly have the economic strength to hinder active competition and to a significant degree operate without taking into consideration competitors, customers or consumers and maintain access barriers to infrastructure, systems and service, see Article 17 of the Regulation on market analysis in the field of electronic communications. It is therefore necessary to conduct detailed geographic analysis of the retail and wholesale markets in question and to then conduct detailed analysis of competitive conditions on the relevant wholesale markets in those areas where it is considered that competition was not active at retail and/or wholesale level and as appropriate, designate an electronic communications undertaking, one or more, as having significant market power and impose appropriate obligations on that/those undertaking/undertakings.

4 Definition of wholesale markets

4.1 General

461. After having examined retail markets for broadband connections, the time has come to define the underlying service markets at wholesale level. The factors that are considered to characterise the market will be examined, inter alia according to the explanatory notes to the Recommendation on relevant markets, and then the markets will be further delineated with respect to the discussion on the retail market in Section 3 here above with respect to the wholesale service that it is possible to offer on the basis of existing networks and networks that are expected to come into existence in the near future.

4.1.1 Market analysis according to the Recommendation on the relevant market and explanatory notes in its attached working document

4.1.1.1 General

462. In the EU Commission Recommendation from 2014 and in corresponding ESA Recommendation from 2016, two main wholesale markets that underlie retail sale of Internet connections are defined, and they are:

a. Wholesale market for local access with fixed connection (market 3a).

b. Wholesale market for central access provided at a fixed location for mass-market products (market 3b).[92]

463. These markets and related retail markets are covered in detail in the working document to the above specified EU Commission Recommendation from 2014.[93] After discussion on retail markets, the general development of networks is discussed and the impact that the development has had on the relevant wholesale markets, which were previously defined as wholesale access to access networks provided at a fixed location (including bundled and unbundled access) and wholesale broadband access that were analysed with the PTA Decision no. 21/2014.

464. Access to networks for the purpose of providing Internet service can be in varying layers of the network and it varies where purchasers of wholesale access choose to connect to the network and how much service they buy. In recent years, there has been major development

[92] As previously stated, the EU Commission issued a new Recommendation on the relevant markets on 18 December 2020. No changes were made to the boundaries between markets 3a and 3b, but subsequent to completion of a 3 criteria test, the Commission came to the conclusion that market 3b tended towards effective competition and therefore removed this market in the new Recommendation. Market 3 is on the other hand listed in the new Recommendation as market 1. National electronic communications regulatory authorities can however continue to make market analysis for market 3b if they show that the conditions for a 3 criteria test are fulfilled in the state in question. ESA has however not yet issued a comparable Recommendation to the one made by the Commission in December 2020, which means that the ESA Recommendation from 2016 still applies in this country and in that Recommendation, market 3b is listed as a market that must be analysed. For this reason, the ECOI does not have to conduct a 3 criteria test in the case of market 3b in this analysis.

[93] See discussion in the working document, pages 37-45.

in fibre networks, which will foreseeably continue during the next years. The migration of services from copper networks to fibre networks has resulted in significant changes in network topology, and in the offer of varying access services. This has led to a need to review definitions on those wholesale markets on which Internet connections are based on ECOI Decision no. 21/2014, and this was done with ECOI Decision no. 5/2021.

465. The wholesale markets that were previously connected to broadband connections in retail were on the one hand, access to access networks provided at a fixed location (including bundled and unbundled access) normally called local loop leasing, and on the other hand broadband access, also known as bitstream access. In distinguishing between these wholesale markets, the emphasis was placed on whether it constituted access to non-active network parts (local loops) or virtual access in the form of bitstream connection, on how much latitude the retailer had to form his service and on where in the network access was provided. Access to local loops was generally provided in a telephone exchange (MDF) or in a street cabinet and gave the purchaser considerable latitude in forming and controlling his retail services. Bitstream access was on the other hand, provided with a virtual bitstream connection to which the purchaser connected in a telephone exchange or deeper in the network. With the distribution of new networks, access possibilities have changed, and this has made the distinction between local loop lease and bitstream access less clear, which calls for a changed definition of the markets, and as previously stated, this was done with ECOI c 5/2021.

466. New fixed line high-capacity networks are built in part or entirely on fibre. In some instances, the fibre local loop is laid all the way from the main distribution frame (MDF) or optical distribution frame (ODF) into the user's premises. Such networks are either Point-to-Point, that is to say a whole fibre lies from the ODF into the user's premises, or Point-to-Multipoint where one optical fibre is shared part of the route and is divided later into more channels to individual users. A common design of Point-to-Multipoint networks is what is called PON (Passive Optical Network) technology which constitutes virtual distribution of light with a splitter.

467. Another method for constructing high-capacity networks is to lay the fibre from the ODF to the street cabinet. From the street cabinet to the user, copper lines are used which are already in place. Then VDSL technology is often used where this is possible and equipment for such a service is located in the street cabinet. When VDSL is used, local loop lease in the traditional understanding of the term can cause interference to the VDSL service. For this reason, it can be necessary to provide access with active equipment in a telephone exchange or street cabinet instead of leasing a physical local loop. The same can apply in pure fibre networks if they are developed as Point-to-Multipoint.

468. In the opinion of the EU Commission, there was thought to be reason in 2014 to review the boundaries between the relevant wholesale markets and to base differentiation rather on the usage characteristics of access solutions instead of focusing on whether the connection was physical or virtual. The Commission presented a number of key factors that needed to be examined when distinguishing between markets 3a and 3b. Firstly, one should examine where delivery of the service should take place, that is to say whether it should be close to the user or central in a mobile network. Secondly, it would be necessary to examine the architecture and characteristics of the wholesale service, particularly whether a virtual connection offered guaranteed bandwidth and provided similar possibilities to local loop leasing. Thirdly, one

should take into account the latitude that the purchaser had to form his service offer through the connection with respect to which network factors and procurements were under the control of the network operator on the one hand the purchaser on the other.

4.1.1.2 Characteristics of wholesale market for local access with fixed connection (Market 3a)

469. According to the above specified Guidelines in the working document attached to the EU Commission Recommendations on the relevant markets[94] from 2014, analyses in member states have not shown a break in the chain of substitution between broadband connections through copper on the one hand fibre on the other and for this reason it would be generally considered correct to view all of them as part of the same wholesale market. Subsequently, both Sweden and Denmark came to the conclusion that a breach had been made of the relevant chain of substitution.

470. Access to a physical local loop has the advantages that it guarantees freedom to the lessee to form his service and to use the technical solutions he chooses. In cases where it has not been possible to enable active access to fibre local loops and where renting a local loop from the street cabinet would impair the quality of the VDSL vectoring service, the NRAs have prescribed virtual access instead of physical access to the local loop, with the reservation that this should be reviewed if solutions emerge that make physical access possible. In the light of these implementations, the Commission considers it appropriate to deem virtual solutions to be part of the market if they have similar characteristics to local physical access. The characteristics that need to be in place for virtual access to be considered to belong to the market are the following:

1. Access is local, that is to say that the purchaser receives access close to the end user and not in a connection point that serves a large part of the country or the whole country, as is customary with bitstream access. Local access can be in a telephone exchange, MDF, ODF or in a street cabinet. Though such virtual access services are intended to replace local loop lease, the points of delivery for virtual access do not necessarily need to be as many as the points of delivery for copper local loops.

2. Access is of a general nature and provides purchasers with service independent carrying capacity, where a specific bandwidth is guaranteed in accordance with the needs of the customer within the limitations that are normal, given the existing base network. Access needs to be unbundled which means that a reserved connection is set up from the end user to the location where the access is delivered. The technical characteristics of the connection and its carrying capacity should only be limited by the physical capabilities of the technical solutions available to support services analogous to local loop lease (e.g., multicast, where appropriate).

3. Purchasers of access need to have control of access connections that equates to their functioning like local loop lease. The possibilities for benefits segmentation of service and innovation also need to be comparable. In this connection, an access purchaser's control of basic characteristics of the network, of network functionality, operations

[94] See pages 42- 45.

and business processes and also of support services and systems (e.g. user equipment) should enable him to control the characteristics of user service and its quality.

471. In order to delineate the relevant market more precisely, one needs to evaluate competitive pressure from other types of networks such as (TV) cable systems and mobile networks. The Commission considered it however unlikely in the year 2014, these networks could be deemed substitute service in the near future.

4.1.1.3 Characteristics of wholesale market for central access (market 3b)

472. There is discussion on the wholesale market for central access provided at a fixed location for mass-produced products (market 3b) in Section 4.2.2.2 in the above specified working document to the Commission Recommendations on the relevant markets from 2014. It is stated there that central access is provided far from the end user, i.e. central in a comprehensive electronic communications network and that it is possible to use this to provide adequate standardised retail service to households and companies. It is considered likely that there is chain of substitution between solutions based on xDSL on copper on the one hand and fibre solutions on the other for the coming years.

473. When virtual network solutions are used at a number of locations in the value chain, certain key characteristics of the connections need to be examined in order to distinguish between local access, central access and high-quality connections. Access (even point-to-point access) that does not offer guaranteed service quality, has a high splitting proportion, does not offer symmetric speed and only enables purchasers to offer standardised retail service or service which supports limited functionality, or has limited possibilities for benefits segmentation of services because of limited possibilities to control the network, should be included under central access (market 3b). Virtual solutions that have higher quality and that can be used to provide retail services to companies can also be categorised under central access, as long as they are not high-quality connections.

474. It is stated that NRAs need to examine competitive pressure and substitutability of other kinds of networks such as cable systems and mobile networks. It is not necessary to deal with further deliberations on cable systems as they are very rare in this country, but they can only be found in part of one of the country's municipalities, i.e. in Reykjanesbær. The Commission did not expect that mobile networks would have an impact on delineation of the relevant markets for the time being.

475. Local access and central access, as they are described in the working document, can be underlying wholesale service for Internet service and to related service at retail level. To some extent, substitutability could be a possibility in this connection. Some important factors are however different from each other in this service type and for this reason it is likely that companies that purchase access do not see them as full substitute products. Capability to invest and customers' business model can among other things, decide which service they choose. Service options constitute varying investment risk, as the party who purchases local access needs to invest much more in his own networks and equipment than the party who purchases central access. Then there is the fact that local access provides much wider possibilities for forming the retail service, thus creating a special position on the retail market.

ECOI therefore considers it appropriate to distinguish between markets 3a and 3b in the same manner as is done in the Recommendation.

4.1.2 Boundary between the wholesale market for access provided at a fixed location, central access and wholesale market for high-quality access

476. In prior ECOI analyses of the markets that were then markets 4, 5 and 6, it was considered that terminating segments of leased lines were separate from markets for access-to-access networks provided at a fixed location and broadband access. Corresponding markets are according to the ESA from 2016 now in force for markets 3a and 3b and market 4 for access with connection provided at a fixed location of very high-quality.

477. In coverage of retail markets in the explanatory notes to the Recommendations[95] there is discussion on standard Internet connections on the one hand and high-quality connections on the other. High-quality connections are on a separate market. In the discussion on retail markets here above, ECOI comes to the same conclusion in Section 3.2.3.

478. Retail service on the market for high-quality connections has special characteristics that distinguish it from standardised Internet access. Many companies have needs beyond that which is customary in standardised Internet connections. Aspects that characterise such services are high-quality level, high uptime, symmetric and high upload and download speeds, guaranteed bandwidth, access to a dedicated call desk, short repair time and various additional services such as IP telephone, VLAN, data hosting and backup. Standardised solutions for households are not designed to fulfil these needs.

479. Because of the nature of retail service, wholesale resources belonging to markets 3a and 3b are not sufficient for high-quality connections to provide such service. In high-speed connections from prior times, leased lines or communication channels were used that the lessee hired for his private use, with guaranteed capacity in both directions. High-speed connections are now almost exclusively based on packaged networks instead of channel networks and then on IP/Ethernet connections provided over fibre networks. Such connections are normally connected to electronic communications systems where the capacity of the fibre network is shared between many such connections, where each connection is provided with controlled and assured service quality, and this is implemented, for example, with MPLS network technology.

4.2 Assessment of various access technology for the wholesale market for local access (market 3a)

4.2.1 General

480. An assessment has to be made of whether local access, as delineated in the ESA Recommendation currently in force on the relevant market and in Recommendations from the EU Commission on the relevant market from 2014 and in explanatory notes in a working document to that Recommendation, can possibly be provided over varying types of networks operating in this country. The types of networks that could be included in this connection are

[95] Page 36.

copper networks, fibre networks, cable systems, fixed Wi-Fi networks (FWA), satellites and mobile networks. Then one needs to examine competitive pressure and substitutability possibilities between these solutions and then finally decide which electronic communications networks form the relevant market.

4.2.2 Copper network

481. Initially, Mila and its predecessor began to provide local access to copper local loops through a physical connection on a copper network from a telephone exchange to the user in the case of ADSL. Obligations that have applied for many years on the market that was initially defined as the local loop market and then subsequently as the market for wholesale access to access networks provided at many fixed locations, led to supply of access to the Mila copper local loops. Access was either fully unbundled loop or a shared loop to either of the local loop frequency ranges. Access was provided at a telephone exchange where the local loop was in the custody of the lessee and under his control, which enabled him to decide which type of service he provided through the local loop and which speed and which quality. After the advent of VDSL, active equipment was located in street cabinets, which made local loop lease almost an impossibility for external parties, which led to leased copper local loops then decreasing in number and to access requests involving increasingly the lease of bitstream access from Mila.

482. According to the explanations in the working document to the Recommendation, a virtual connection is also considered to belong to the market if it fulfils the criteria for local access, freedom of choice for the lessee to decide which kind of service he provides through the connection, guaranteed or adequate carrying of an adequate quality and full control of the connection for the lessee. In PTA Decision no. 21/2014 and in ECOI Decision no. 5/2021, where an obligation to provide access was imposed on Mila for that undertaking's copper local loops, it was stated that where it was problematic to provide access to street cabinets to more than one VDSL operator, then this would be resolved with virtual unbundled local access (VULA). VULA needs to fulfil conditions related to service and access and they are: Access at each location, access independent of service provided on the line, specific and fixed definition of line capacity, full control of access and service/service definitions and full control of customer premises equipment where shared access is not technically possible, and exemption is granted where open virtual access to sub-loops is offered. In PTA Decision no. 21/2014, VULA was deemed to belong to market 5, but in the light of changed definitions in the ESA Recommendations, ECOI considered in Decision 5/2021 that this service belonged to market 3a, if it fulfilled the current definition criteria on freedom of choice of service, guaranteed carrying capacity and control of the connection. With this in mind, ECOI considers that both physical access to local loops in copper networks and virtual access that fulfils the same criteria, belong to market 3a as will be further argued in Section 4.2.3 on the fibre networks where an assessment shall be made of substitutability between these networks on the relevant market.

4.2.3 Fibre networks and assessment of substitutability between fibre and copper local loops

483. Subsequent to the PTA market analysis, which was concluded with PTA Decision no. 21/2014, an obligation was imposed on, among other things, access to local loops in the Mila

fibre network, and this conclusion was confirmed with ECOI Decision no. 5/2021. An obligation for price control was however not imposed on Mila fibre in the decisions in question.

484. Mila offers GPON service through its own fibre in the Capital City Area and also widely across the country. Mila also offers GPON service through fibre systems owned by parties other than Mila, but not through the Ljósleiðarinn fibre network, Mila's largest competitor, except to a very limited degree. Neither shared access to the Mila fibre local loop, nor access to part of the local loop is at least an attractive option because of the Mila network topology. ECOI considers that access to local loops in a fibre network with PON topology is within the definition of market 3a as it is described in the Recommendation.

485. On the other hand, such access has not been considered an attractive option and access to local loops in a Mila PON network is in reality only purchased as part of the undertaking's bitstream service. Local loop lease in point-to-point fibre networks is admittedly part of Mila's general product offer in local loop lease, but such access is very rarely purchased. Companies have been able to order a whole interrupted fibre from the distribution frame (P2P topology) under the trade name Ljóslína, but ECOI considers that access to such lines does not belong to market 3a. Mila Ljóslína lines are not normally deployed in the same investment projects as the public local loop network, which are deployed in the comprehensive network in Mila's fibre roll-out. Ljóslína are still dependent on a special order and as appropriate, only deployed against a share of set-up costs. Ljóslína are intended to provide high-speed connections to companies and not for mass-market service, and thus belongs to market 4 in the ESA Recommendation from 2016.

486. Mila owns or operates a number of smaller networks in the countryside developed in recent years that are based on P2P topology, often with state aid. In those networks it is possible without great difficulty to provide access to local loops from technical space to households. Such access is covered by the definition of market 3a where it is offered. Virtual network solutions that may be offered, also belong to the market if they fulfil the definition criteria as prescribed in the explanatory notes to the Recommendation.

487. Ljósleiðarinn has from the outset operated point-to-point fibre network and the company's wholesale service mainly constitutes bitstream access on this network. Ljósleiðarinn bitstream connections are not part of market 3a. Ljósleiðarinn does not generally offer direct access to its passive fibre local loops and is therefore not selling a service on market 3a, but the underlying fibre local loops are nevertheless considered to be part of the market as internal sales or self-supply.

488. Tengir provides both active and passive access to its fibre network. These external sales and self-supply of passive access are part of market 3a. Snerpa has deployed more than about 1,500 local loops in the West Fjords and uses them to provide its own retail service and bitstream service in wholesale. Up to this point in time, Snerpa has not sold access to local loops without bitstream, but Snerpa local loops are nevertheless part of market 3a as self-supply. The same can be said about the Austurljós fibre network at Egilsstaðir, which has almost 400 fibre local loops. Smaller networks, such as countryside networks that were developed with the assistance of the Telecommunications Fund, generally provide passive access, which is part of market 3a, same as Eygló in Westman Islands, which has now

commenced deployment of fibre in the municipality, planned for completion at the end of 2025, which represents just over 2,000 local loops.

489. An evaluation is to be made on whether there is substitutability between fibre and copper local loops on the relevant wholesale market, but as is stated in Section 3 here above, it is the ECOI conclusion that substitutability is deemed to be present at retail level between Internet service over fibre networks and copper networks, which have been fitted with VDSL equipment. When evaluating this wholesale market, all copper local loops need to be included regardless of whether they are used for Internet service or not, and whether they are connected to ADSL or VDSL equipment. It is necessary to note that the proportion of copper local loops in use that do not provide Internet service have been decreasing year by year and are now a negligible part of all local loops and an insignificant proportion of copper local loops. ECOI expects that copper local loops used for anything other than VDSL will have disappeared from the market at end of year 2025. See figure 3.37 in Section 3.2.2.2 which shows the ECOI projection on the number of VDSL connections in use compared with the projection on number of copper local loops.

490. The fact that substitutability exists at retail level with respect to fixed line network solutions, does not necessarily without close examination lead to there being substitutability on the relevant wholesale market for local access at a fixed location. One has to take into account the competitive conditions in this country, including potential competitive pressure between these technical solutions.

491. In Article 7 of Regulation no. 556/2023 on market analysis in the field of electronic communications, there is discussion on methodology in market analysis. There it states:

> *"The relevant product or service market is composed of those product and service categories that have sufficient substitutability from users' point of view, not only with respect to characteristics of the relevant product/service, to price and planned use, but also with a view to all competitive conditions and/or composition of supply and demand.*
>
> *ECOI shall categorise those products/service under the same market that consumers use for the same purpose. Products or service that only provide limited substitutability are not considered to belong to the same market, for example in those instances where final use of a product/service could be closely related to its characteristics, while varying types of products or services could also be applicable for the use in question.*
>
> *When evaluating competition, one must keep two elements in mind, in connection with behaviour of parties to the market:*
>
> a. *Demand-side substitutability. Indicates those substitute products or substitute service that consumers can easily switch between as a reaction to a small (5-10%) but non-transitory price increase of the reference product/service. Demand-side substitutability measures the extent of consumer willingness to switch from the product or service in question to another product or service. It is not necessary that all consumers switch, but rather that they do so in sufficient numbers for the small but non-transitory price increase to be unprofitable. ECOI shall use all appropriate*

data and indications on prior consumer behaviour, and shall also assess the likely reactions of consumers, and competitors, in the event of such a price increase.

b. Supply-side substitutability. Indicates whether competitors of the party in question would make changes to their production in the short term (within 1-2 years) or offer the product or service in question without incurring significant additional costs, in the case of a small but non-transitory price increase. Potential competition is however taken into account when assessing market power, see Article 21 the Regulation."

492. As stated in Section 3 here above, ECOI considers it clear that there is demand-side substitutability between these technical solutions in the minds of consumers, as it is finally consumers that decide which access to underlying networks, they purchase for their Internet service and related services and the electronic communications undertakings must adapt to this. It is clear that there is still considerable demand for Internet service and related service over copper networks and Mila plans to offer such a service during the coming years, although the policy is to decommission them until the year 2028, where the most effort will be made in this during the years 2027 and 2028. Consumers can therefore in coming years still switch between the service types, for example if the price increases to small degree but non-transitory, for fibre networks but not for copper networks. Consumers use service for the same purpose, regardless of the underlying fixed line network.

493. As substitutability is being evaluated here for the wholesale market, there is no reason not to also examine potential reactions of retail undertakings that make access requests on the relevant wholesale market. If one considers the two largest retailers in this country for Internet service, that is to say Siminn, and Sýn, which jointly have close to 70% market share, it is clear that those undertakings both offer Internet access over copper and fibre networks at the same price. It is finally the end user that decides his choice of underlying network, and it is clear that there are still about 20% of inhabitants with their Internet connections over copper networks, even such that this percentage is still actual in a municipality like Seltjarnarnes, where fibre roll-out was fully completed 15 years ago. Retail undertakings have therefore not been prepared to take the risk of offering varying prices for Internet service in this country on the basis of the underlying access technology. The difference has also diminished between monthly prices in wholesale for copper and fibre local loops in this country since the last increase of the monthly price for copper local loops, which was endorsed with ECOI Decision no. 3/2023 dated 3 May 2023.

494. With respect to supply-side substitutability, ECOI considers that it does not exist between these technical solutions. As the copper network will eventually become history, it is not likely that electronic communications undertakings that operate fibre networks will begin to deploy copper networks. For substitutability to exist, it is however necessary that either demand-side or supply-side substitutability exists, and according to the above, ECOI considers that demand-side substitutability does exist between these technical solutions on the relevant wholesale market.

495. In Article 12 of the above specified Regulation, there is discussion on the hypothetical monopolist test (SSNIP test). There it states:

"In addition to considering whether there is substitutability between a product/service because of its ***characteristics, price and planned use,*** *ECOI investigates, as is necessary and as appropriate, dominant demand conditions and supply-side conditions by applying the hypothetical monopolist test (SSNIP) in order to complete a definition of the relevant product or service market, among other things to decide whether varying technical solutions shall belong to the same wholesale market. ECOI shall be forward-looking when evaluating substitutability and take into account that potential access seekers, that have not begun to provide electronic communications service, do not need to consider the cost of switching when they select their access platform.*

When applying the SSNIP test, ECOI assesses what would happen if the price of the product/service in question would increase non-transitory to a small degree (5-10%) given that the price of other products or services would remain unchanged.

In order to evaluate whether there is a need to impose obligations, ECOI shall first examine specific reference products or service that are provided in a specific area and their effect on product price. ECOI can add products/services and/or areas to investigate whether they have an impact, or until it is possible to assert whether the relevant pricing within a specific product or service market and geographic market is profitable, i.e. there is no longer a risk that profitability will decrease because of a decrease in sales resulting from customers switching over to substitute products or service or to competitors in other areas.

The SSNIP test is generally applied to products or service where pricing is unrestricted. If a product/service is subject to ECOI price control, it shall be generally assumed that cost analysed price is the competitive price and this shall be used as grounds in the test. ..." (ECOI emphasis edit)

496. It is clear that Internet service and planned use of end users of Internet service and related service are the same or at least similar in the eyes of consumers in this country, regardless of the underlying fixed line network, and in addition to this the prices are the same. Then, the conclusions of the consumer surveys commissioned by ECOI in the years 2020 and 2022, including an SSNIP test, were to the effect that ECOI considers it clear that there is substitutability in the minds of consumers in this country between these technical solutions. In the opinion of ECOI, copper local loops thus continue to exert adequate competitive pressure on fibre local loops such that a small but non-transitory price increase in fibre local loops at the same time as the price for copper local loops remain the same, would not be profitable.

497. With the above in mind, it is the assessment of ECOI that both fibre local loops and copper local loops belong to the market 3a in question. This is in accordance with the above specified ESA Recommendation from 2016 which applies in this country[96] and in the large majority of European NRAs.

[96] The same conclusions can be found in the new Recommendation from the EU Commission from December 2020. On page 48 in the working document accompanying this Recommendation it is stated among other things:

498. Later in this Section there will be discussion on whether cable systems, Wi-Fi networks at a fixed location (WiMax) and/or the above specified mobile network connections also belong to the relevant market.

4.2.4 Cable systems

499. In the above specified explanatory notes to the EU Recommendation from 2014, it is considered unlikely that cable TV distribution systems can be a substitute product for local loop leasing on copper and fibre networks in the relevant wholesale market. In the EU Commission working document accompanying the New Recommendation on the relevant market from December 2020 the following is stated on the other hand:

> *"Access to current generation of cable networks (DOCSIS 3.1) can only be provided at central level. Therefore, the WLA market does not include access to cable networks. However, a relatively widespread presence of cable at retail level can constrain the ability of fixed incumbents to act independently at wholesale level. Under such circumstances, the WLA market could be left, at least partly, unregulated based on indirect retail constraints stemming from cable. Such deregulation is not unprecedented."*

500. As has been stated previously, there is only one local cable system for TV operated in this country i.e. the cable system of Kapalvæðing in one district in Reykjanesbær. Since the fire in the company's operational centre, the cable system has only been rebuilt in one district in Reykjanesbær, where there are [...] active connections. This therefore has such a small impact on the relevant market in this country that there is no reason to discuss it specifically in analysis of the market. In addition to this, it should be noted that there is no wholesaler on this network and in most places, it is not considered economically or technically attractive to set up physical or virtual wholesale access to such networks. There is also the fact that Kapalvæðing has made an agreement with Ljósleiðarinn on bitstream access to Ljósleiðarinn fibre network, and Ljósleiðarinn and Mila are at an advanced stage of fibre roll-out in Reykjanesbær. In the opinion of ECOI, there is therefore no direct or indirect competitive pressure from cable systems in this country.

501. ECOI therefore considers TV cable systems to be not a part of market 3a in this country.

4.2.5 Wireless access network with fixed use location (WiMax) and satellite

502. In discussion on the retail market for Internet connections, it was stated that users of wireless networks with fixed use location (WiMax) in this country are very few and are on the decrease. ECOI therefore considers it unlikely that such connections and connections over copper networks with VDSL equipment or over fibre networks belong to the same market,

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"At present, the Wholesale Local Access (WLA) market primarily consists of physical access products as well as virtual access products that mimic the capabilities of physical access (VULA) enabling transmission of internet and related data services. Copper local loop unbundling (LLU) and copper sub-loop unbundling (SLU) – although to a decreasing extent – are still applicable access products used throughout the Union. So far, experience under Article 7 procedure ***has not,*** *in most Member States,* ***shown significant breaks in the chain of substitution*** *when comparing current generation broadband services provided over copper to those provided over fibre. Therefore,* ***at least in the near term, access to FttH, FttB or FttC/VDSL (either PtP or PtMP) network should be considered as a substitute to traditional copper LLU."*** (ECOI emphasis edit)

and in any event, they are so small in number that they have no significance in connection with analysis of the market being examined here. The connections in question were only 244 at the end of 2022.

503. ECOI sees no indications that wholesale purchasers on the Icelandic electronic communications market consider access to satellite systems to be an option in this context during the lifetime of this analysis, and in addition to this there is absolutely no certainty that such access is available to them.

504. ECOI therefore considers that wireless access network with fixed use location (WiMax) and satellite do not belong to market 3a.

4.2.6 Mobile network

505. With respect to mobile networks, ECOI came to the conclusion in discussion on retail markets that a sufficient number of consumers now considered data transfer over mains connected mobile network routers with 4G/4.5G and 5G technology, to be an alternative to fibre connections, cable systems and copper connections with VDSL equipment, for there to be substitutability between all these technical solutions.

506. The fact that substitutability exists at retail level with respect to mobile network solutions, does not automatically lead to the existence of substitutability on the relevant wholesale market for local access with a fixed connection (fibre and copper network with VDSL equipment). One must consider whether such access is technically possible, so deep in mobile networks, and one also has to consider market structure and competitive conditions in this country, and the competitive pressure that such networks exert on such access in the fixed line networks in question. In the opinion of ECOI one must also evaluate whether such access is a realistic option for access seekers at wholesale level that purchase such access. In the fixed networks in question from a commercial standpoint based on the circumstances in this country, among other things with respect to cost and need for investment in such deep access and examine among other things whether the bitstream access (market 3b) is a more realistic option. In general, development in this country in fixed networks in recent years has been in the direction where retailers purchase progressively fewer local loops at the cost of bitstream connections. One explanation could be that this is a small market and that undertakings operating on the retail market do not see the gain from investing much in those electronic communications systems needed for such deep access. Siminn has for example now sold Mila most of its systems needed to provide Internet service, and the mobile phone distribution system.

507. There are three mobile network companies operating in this country with frequency licences, their own mobile phone cores and two of them own their own mobile phone distribution system. Nova and Sýn operate their own mobile phone distribution system through a joint undertaking, i.e. Sendafélagið. In 2021, the Nova and Sýn sale of passive electronic communications infrastructure that connect to the undertakings' electronic communications distribution system was completed to Digital Bridge Group Inc. with CA Decision no. 32/2021, dated 23 November 2021. These were specific macro tower sites, i.e. real estate, masts and other equipment not considered to be active equipment. The purchaser then founded a separate company to handle this passive infrastructure, i.e.

Íslandsturnar ehf., a company that owns and operates up to 400 electronic communications towers. Mila then purchased the Siminn mobile phone distribution system at the beginning of 2021. The country has a population of just under 400,000 and for many years there has been no full MVNO party operating in Iceland, but Hringdu has resell access to Siminn mobile phone system, which is considered to be the lowest level of bitstream access and not access to market 3a. Hringiðan also has access to the Nova mobile network, and also that of Kapalvæðing in Reykjanesbær. One must evaluate whether it is likely that smaller electronic communications companies or potential new competitors would request such deep access or let bitstream access suffice, and then even resell access, like Hringdu, Hringiðan and Kapalvæðing have done.

508. It is important to have in mind that, according to Recommendation in force on the relevant market, the relevant market consists of local access with fixed connection, i.e. access to physical connections in access networks in fixed line networks and also possibly in mobile networks, along with corresponding virtual network solutions that fulfil the following conditions:

1. Access is local and not central.

2. That the lessee can select which service he provides and has guaranteed an adequate capacity of satisfactory quality.

3. That the lessee has full control of the connection.

509. One also has to take into account that wholesale service so deep in mobile networks, which one can equate to local loop lease in fixed line networks, has been difficult to implement, given the technical solutions that have been in place, as such would call for division of the available frequency spectrum, which can result in ensuring impairment of carrying capacity. It is not however out of the question that a fully operational 5G network, with both 5G cores and 5G transmitters, will make such access easier from a technical point of view with what is called network slicing.[97] That the possibility may be technically in place

[97] In the EU Commission working document accompanying the new Recommendation on the relevant market from December 2020 the following is among other things stated on page 27: *"Another development that may enhance the potential for service providers to innovate based on wholesale access is the emergence of **Software Defined Networking (SDN)** and **Network Function Virtualisation (NFV).** These technologies facilitate the so-called **slicing of networks,** i.e., the creation of virtual networks that can be tuned towards the needs of particular user groups or to particular users, such as Mobile Virtual Networks Operators (MVNOs) in case of mobile networks or Fixed Virtual Networks Operators (FVNOs) in the case of virtualised fixed networks. **Through virtualisation, MVNOs/FVNOs can have the same degree of network control as MNOs/FNOs.** This would remove any differences that exist today between the services provided by operators using bitstream or VULA access and the services that are provided by the incumbent operator. However, **this requires that service management via application programming interfaces (APIs) is opened-up to the virtual network operators in a multi-tenant manner.** The open question is whether this will allow access seekers to offer distinct products from those access products the access provider offers. This will depend on suppliers´ capability to offer multi-tenant Operations Support Systems (OSS) and network operating systems and **the demand from and willingness of access providers to procure such solutions.** SDN/NFV-based network systems are already implemented in some networks, and thus are in the process of penetrating the network platforms of the operators. However, since the features required for providing VULA-based services are not mandatory elements of the SDN/NFV implementation, **a regulatory obligation to provide VULA features and characteristics would still be required***

does not however answer the question of whether there could be demand for such a solution given the circumstances in this country, i.e. whether such is realistic from a commercial point of view, or whether mobile network operators are interested in offering such a solution. Then there are no obligations on mobile phone operators in this country to offer such a solution.[98]

510. In Section 4.1.3 in the working document to the EU Commission Recommendation on the relevant market from December 2020 there is discussion on definition of market 1, which is comparable to market 3a in the ESA Recommendation in force from 2016, with respect to the relevant market. There the discussion is first and foremost on fixed network local loops (copper and fibre). There it is however stated that in order to define precise boundaries for service markets on the wholesale market in question, NRAs, using competition law methodology, need to assess competitive pressure resulting from cable systems and other infrastructures such as 4G mobile networks[99] which are used to provide Internet service at retail level.

511. On pages 49–51 in the working document in question, where there was discussion on the first condition for the 3 criteria test for the existence of substantial and non-transitory systemic or legal access barriers, it is stated that electronic communications networks that build on technology other than copper and fibre, for example cable systems are mobile networks, are likely to be limited, both with respect to their geographic distribution and access products at wholesale level, that could be substitute products for traditional access products on the relevant market.[100] Mobile telephone companies in this country have not offered access service to their mobile networks that can equate to local loop lease access in fixed line networks on market 3a. Mobile phone companies thus appear not to have considered seriously the option of offering a full FWA mobile network wholesale service in this country, as is for example known in Norway.

512. On page 51 in the working document in question, where there is discussion on the second condition of the 3 criteria test regarding market structure not tending towards active competition within the time frame of the period of validity of the Recommendation in question, it is stated that some states have partly or entirely deregulated the relevant wholesale market because of extensive deployment of kinds of electronic communications

to ensure that this solution is taken up. *If these characteristics can be met,* ***the point of handover for the VULA services can be migrated from local to a regional level,*** *following the trend of longer access networks links associated with fibre transmission conditions."* (ECOI emphasis edit)

[98] On page 25 it states: *„Technologies in and by themselves can also influence the degree of retail competition that is possible in cases where there is a limited number of parallel infrastructures. For instance, the degree to which a particular service is tied to a particular technology or the degree to which technologies can be physically unbundled or can allow for a variety of virtual services to be offered as such* ***can affect the degree of competition that is possible via wholesale access.*** *The limitations defined by the used technologies also influence* ***whether a wholesale access seeker would consider two wholesale products to be functional substitutes.*** *Taking all this into account, the main trends like decreasing usage of physical access, wholesale access to upgraded copper networks or xPON based networks in the form of Virtual Unbundled Local Access* ***(VULA)*** *and* ***network-slicing technologies will be important in the upcoming ten years."*** (ECOI emphasis edit)

[99] When that working document was written in the year 2020, there was no proper experience of 5G mobile networks and the deployment of such networks had just commenced.

[100] On page 50 of the working document, it states: *"5G FWA as well as other wireless technologies could potentially decrease the costs of the last metres to connect the end-user, as compared to establishing fixed connections. Trials have shown that speeds of 1Gbit/s can be achieved over 500m with 5G FWA technology."*

networks other than copper and fibre at retail level, mainly cable systems.[101] It is also stated that significant deployment of more than one kind of fixed network is not yet a reality in a majority of states within the EU. Because of the shortage of such direct competitive pressure, and even though it were not possible to exclude the possibility that indirect competitive pressure would increase with time, the Commission did not allow for it being possible to ensure effective competition at retail level without obligations on the market in question within the lifetime of the Recommendation in question. On the other hand, there was a need in each individual case to assess the impact of another kind of infrastructure than copper networks and fibre, and to take into account both direct and indirect competitive pressure that might result from such infrastructure, particularly from cable systems.

513. On the same page references are made to the main principle of competition law and stated that if indirect competitive pressure resulting from retail level where sufficient to make a price increase of parties on the wholesale market in question unprofitable, it would be possible to come to the conclusion that such a party did not have significant market power. With respect to indirect competitive pressure resulting from service over cable systems at retail level, (in coming years, also from mobile networks), the Commission expected that in the case of a small and non-transitory price rise (5-10%), the retail price of broadband access based on appropriate technical solutions would increase, which would lead to end users turning to retail products based on cable systems (or mobile network solutions) to such an extent that the price rise on the wholesale market in question would not be profitable.

514. On 14 April 2023, ECOI sent questionnaires to the electronic communications companies where among other things there were asked for their position with regards to whether there could be substitutability on the wholesale market here in question between the above specified fixed line network local loops and the mobile network solutions in question. In order to encourage an open exchange of views on this issue, ECOI informed of the Administration's preliminary position that it considered that such substitutability do not exist on market 3a but that it might exist on market 3b. The replies from the electronic communications companies were then received at the beginning of May 2023.

515. **Siminn** says that it was technically and conceivably possible to offer a wireless local loop and referred to following discussion on this issue. Such service however required significant investment and cost. Given Nova and Sýn presentation and service offer, it was not inconceivable that these companies would offer such solutions in the future. Nova was not offering fixed line service in the whole country and could therefore even offer or produce such solutions for their own use, particularly where the company was not using a fixed line system. There was however significant cost involved in fulfilling existing obligations on the basis of frequency licences and therefore unclear in the opinion of Siminn, whether conditions existed for embarking on expensive actions in excess of those obligations. Iceland was quite special when it came to deployment of fibre connections, which could mean that demand for wireless home connections would be less. This could lead to use of wireless systems being less in specific areas.

[101] It was stated there that full deregulation of the market in question has taken place in Romania and Bulgaria. Certain regions in Italy and in Poland have been deregulated for this reason.

516. Then Siminn stated that it was conceivable to offer households a fairly powerful and stable data connection through a wireless system, without embarking on expensive actions to achieve the characteristics of a "local loop". The problem was that there was little use of local loops by retailers and therefore difficult to project for the relevant market in this respect, if local loops would increase in price and not the bitstream service. It was established that the copper system would be decommissioned and that it would presumably be replaced by fibre connections. It was difficult to project on how developments would be in the offer of individual wireless connections. It had an impact that fibre was widespread and there was strong emphasis from the authorities on such connections. This did not however prevent that this was a service that could belong to the same market. Access to fibre connections was good in Iceland, and it was difficult to project what parties to the market would do. The possibility was at least on the table if competition in fixed line networks developed in a negative manner.

517. **Nova** referred to potential substitutability being dependent on a reservation that 4.5G or 5G technology was in place, and the main environmental factors being advantageous to ensure acceptable connection within the building. In other respects, the company referred to its reply to the question of whether there might be substitutability between these fixed line network and mobile network solutions on market 3b, where Nova made certain reservations as to whether there was substitutability at the wholesale level.

518. **Sýn** considered it questionable that it was possible to speak of substitutability between local loops in fixed line networks and mobile networks.

519. **Snerpa** agreed with the ECOI preliminary position that substitutability was not in place on market 3a, as such a solution would call for endpoint equipment from the service provider that was more adapted to mobile phone equipment, both central and with users. Then there was the fact that users need to be provided with bandwidth, both from electronic communications undertakings and allocated in the frequency range. Bitstream access was on the other hand, adequate and desirable in the opinion of Snerpa.

520. **Mila** considered that such substitutability was not in place on market 3a and agreed with the ECOI preliminary position in this connection.

521. **Ljósleiðarinn** considered that actual local loops were a service that was on the way out for providing service to households, particularly in the light of changes to the market in recent months. Participant markets were purchasing bitstream service in most instances.

522. With the above in mind, a large majority of the electronic communications undertakings agreed with the ECOI preliminary position that there was no substitutability on the wholesale market in question, 3a, between on the one hand, local loop lease over copper network and fibre network and on the other hand the mobile phone solutions in question.

523. As in this instance substitutability is being assessed on a wholesale market, the assessment must focus on potential reactions by retail companies that seek access on the relevant wholesale market and not on consumers at retail level.

524. In Article 12 of Regulation no. 556/2023 on market analysis in the field of electronic communications, there is discussion on the hypothetical monopolist test (SSNIP test). In Paragraph 4 it states:

"The SSNIP test is generally applied to products or service where pricing is unrestricted. If a product/service is subject to ECOI price control, it shall be generally assumed that cost analysed price is the competitive price and this shall be used as grounds in the test. ***It can be problematic to apply the SSNIP test to products/services, when the product/service has not been on offer and there is thus no price in place.*** *If no such product/service is available on the initiative of the undertaking or resulting from obligations,* ***but could technically*** *and* ***commercially*** *actually be offered,* ***ECOI can consider using self-supply on an electronic communications network, i.e. a notional market*** *to define the relevant product or service market, if it is demonstrated that consumers will otherwise suffer harm on the retail market and that t****here is demand for such a product/service****.*

525. As has been stated here above, Icelandic mobile phone companies have not offered such deep access in their networks that could equal to local loop access provided by the fixed network undertakings. On the other hand, mobile phone companies have offered resale, access which one must consider to be the lowest level of bitstream access. ECOI has not seen demand for such deep access in mobile networks and does not expect that this will happen during the lifetime of this analysis. Electronic communications undertakings were generally of the opinion that there is no substitutability between local loops in fibre or copper networks and the mobile network solutions in question on market 3a.

526. As there is neither demand nor supply of such depth in mobile networks, ECOI considers it unnecessary to conduct a special SSNIP test with respect to such access on this wholesale market.

527. It is the ECOI conclusion that there is no substitutability between local loops on fibre and copper networks on the one hand the access to mobile networks on the other hand that could equate to such access to local loops in fixed line networks. Though it may be technically possible, or that this may be the case during the lifetime of the analysis, to provide such deep access, and then first and foremost in 5G networks, ECOI considers that the structure of the electronic communications market in this country is such that among other things its small size, and competitive conditions in other respects, mean that neither demand or supply for such deep access in mobile networks will emerge during the lifetime of the analysis. Commercial pre-requisites are thus not in place, with respect to such access. Then there is the fact that access to electronic communications networks in recent years has been developing from local loop access to bitstream access, and thus clear in the opinion of ECOI that Icelandic electronic communications companies that do not operate their own mobile network system will let bitstream access suffice. The companies are not prepared to embark on major investments with the attendant costs, in order to compete for the limited number of customers in question. So mobile networks do not exert direct competitive pressure on providers of copper or fibre local loops in this country and in the opinion of ECOI this will not be the case during the lifetime of this analysis. Electronic communications undertakings appear generally to agree on this point. Nor can it be seen that supply-side substitutability exists as one must consider it extremely unlikely that mobile phone operators will begin to develop their own fixed line networks, or that fixed line network operators that do not have any mobile network today, will begin to develop their own mobile networks.

528. Though it is not foreseeable that there will be direct competitive pressure from physical access or virtual access to mobile networks during the lifetime of this analysis, ECOI considers it appropriate to examine more closely whether indirect competitive pressure from retail of Internet connections over mains connected mobile network routers does exist.

529. In the EU Commission working document to the new Recommendation on the relevant market from December 2020. It is stated on pages 50-51:

> *" If there is effective competitive pressure stemming from alternative platforms at retail level, such platforms should be included in the WLA market if the following conditions are met:* ***(i)*** *access seekers would be forced to pass a hypothetical wholesale price increase onto their consumers at the retail level based on the wholesale/retail price ratio;* ***(ii)*** *there would be sufficient demand substitution at the retail level based on indirect constraints such as to render the wholesale price increase unprofitable; and* ***(iii)*** *the customers of the access seekers would not switch to a significant extent to the retail arm of the integrated hypothetical monopolist, in particular if the latter does not raise its own retail prices. When the above-mentioned criteria are fulfilled, constraints should be deemed to be strong enough so that the platform concerned is included in the market. When indirect constraints are found to exist but are not strong enough to constrain the price of other WLA products, they should be taken into account when assessing whether the incumbent operator has significant market power on the relevant market."*

530. Three factors are specified there that should be examined in order to evaluate whether sufficient indirect competitive pressure exists for the relevant electronic communications infrastructure to be considered to belong to market 3a, and all these conditions must be fulfilled:

(i) Access seekers would be forced to pass a hypothetical wholesale price increase on to their customers at the retail level based on the wholesale/retail price ratio;

(ii) there would be sufficient demand substitution at the retail level based on indirect constraints such as to render the wholesale price increase unprofitable; and

(iii) customers of access seekers would not switch to a significant extent to the retail arm of the integrated hypothetical monopolist, in particular if the latter does not raise its own retail prices.

531. With respect to the first condition there is a unique situation in this country where it has been customary for electronic communications undertakings to specify a special line charge or access charge in their tariffs and in invoices to consumers. This charge normally represents the cost to an electronic communications undertaking for paying the access charge for local loop lease and is thus directly connected to the wholesale price. Those electronic communications undertakings that use both copper and fibre local loops, make however no distinction in line charge in retail on the basis of whether the local loop is copper or fibre, but there is some price difference between these local loops in wholesale. The access charge in retail with these undertakings therefore recovers retail cost for both copper and fibre local loops, with the addition of a mark-up. Copper local loops in use are decreasing quite rapidly,

which means that the weighting of wholesale cost for copper local loops in the access charge is steadily decreasing. For this reason, a price increase on copper local loops is not fully passed on to consumers, and the recent price increase of the monthly charge for copper local loops of 27% from May 2023, only resulted in a 3% increase in Siminn line charge, and ECOI has not observed any retailers who have increased their tariff accordingly. It does however appear to be a different matter with monthly charges for local loops, and if one examines Mila and Ljósleiðarinn price rises, one can see that the electronic communications undertakings operating in retail follow these increases with increases of the access charge, though it varies whether the whole increase is passed on or not. With respect to Tengir, which is the third largest local loop operator, the monthly charge for Tengir local loop lease is collected directly from consumers which means that it is clear that increases are not passed on directly to consumers. In the opinion of ECOI, the above indicates that condition (i) is fulfilled with respect to fibre local loops, but not as emphatically with respect to copper local loops.

532. With respect to the second condition, ECOI has come to the conclusion that there is substitutability in Internet service at retail level that is provided over copper network, fibre network and mobile network solutions based on mains connected network routers. It was stated here above that it is not possible to demonstrate directly that an increase in the monthly price of copper local loops in wholesale will be passed on to consumers in the increase of monthly charges, but one must take into account that the weighting of copper local loops in Internet connections has been on the decline and one can expect a continuing decline during the lifetime of the analysis. The main question is therefore whether it is likely that consumers would switch to the above specified mobile network solution if the price for access to fibre increased by 5-10%. If one considers the consumer surveys commissioned by ECOI in November 2022, 48% of respondents said they had fibre for the household connection, answered the following question in the affirmative: *Do you consider that our electronic communications connection over a mobile network solution could replace the household's fixed line connection?* Just over 27% of those who said they had fibre as the household connection answered the following question with the options *very likely* or *rather likely*: *If the household's fixed line connection increased in price to the extent of ISK 12,000 to 15,000 on an annual basis, how likely or unlikely would it be that the household would switch over to a service option based on a mobile network solution instead, and thus cancel the household's fixed line connection?* ECOI has not conducted a consumer survey that solely concerns access charges, which represent a much lower charge per month, which means that 5-10% on an annual basis would be closer to ISK 2,300-4,800 rather than ISK 12,000-15,000. It is therefore not possible to state how many would switch over to a mobile network solution in the event of a 5-10% increase of fibre access charge, but it is in the opinion of ECOI clear that they would be much fewer in the case of retail price as a whole.

533. The third conditions relate to the retail part of a hypothetical vertically integrated electronic communications undertaking in a dominant market position, but subsequent to the Siminn sale of Mila, there is no longer such a company operating in this country. As this connection between wholesale and retail has been severed, retail companies find it difficult to avoid passing on an increase at wholesale level to consumers. In the opinion of ECOI conditions three is thus fulfilled.

534. It is therefore the ECOI conclusion that condition three is fulfilled and that condition one is fulfilled with respect to fibre, but ECOI considers it to be uncertain as to whether

condition two is fulfilled. In the opinion of ECOI, it is clear that indirect competitive pressure from the specified mobile network systems exists on the local loop market but considers it not to be sufficient to inhibit small price changes. In the opinion of ECOI, mobile network solutions based on mains connected network routers therefore do not belong to market 3a. ECOI will on the other hand take into account this indirect competitive pressure from such mobile network solutions when assessing a position of market dominance.

4.2.7 Self-supply

535. In analyses of markets 4 and 5 according to the older ESA Recommendation from 2008 and in the ECOI Decision no. 5/2021, ECOI considered self-supply by companies and company groups to be a part of the market and their market share was assessed on that basis. ECOI considers that underlying wholesale operations of electronic communications companies could provide competitive pressure against other comparable wholesale services and for this reason it is appropriate to include them and to take them into account when assessing competition on the market, if the wholesale operations in question fulfilled the criteria described here with respect to delineation of the relevant markets.

536. Internal use of local access within the same company is worthy of particular scrutiny as companies use their local networks as inputs in central access, i.e. on market 3b. In the vast majority of cases, retail takes place in the name of companies other than those that operate the core network, but however within the same company as in the case of Snerpa in the West Fjords.

537. In Section 3.3 in the working document accompanying the EU Commission Recommendation on the relevant market, there is discussion on self-supply by electronic communications undertakings. Among other things, it is stated there in connection with market analysis, that where NRAs make an assessment as to whether an intervention in the form of ex-ante obligations is justified, one needs without exception, to decide whether self-supply of wholesale procurements need to be taken into account, both when defining the relevant wholesale market and when assessing market power and as appropriate both with respect to potential parties with significant market power and to other electronic communications enterprises. The purpose of market analysis is to assess whether there may be any need at all for intervention, that can lead to some kind of treatment of self-supply at wholesale level and in instances of exercising provisions of general competition law.

538. Then it is furthermore stated that NRAs should begin definition of the relevant product or service market by categorising products or services used by consumers for the same purpose. When self-supply and external supply cannot be differentiated from the point of view of consumers and where the services in question have comparable functionality and can replace each other, then such self-supply should belong to the same service market as external supply.[102]

[102] In the Section of the working document in question it furthermore states: *"In cases where there is likely demand substitution, i.e. where wholesale customers are interested in procuring from alternative operators, it may be justified to take self-supply of such products into consideration for the sake of market delineation. Even where there is an alternative potential supplier, it may share the same strategic interests as the incumbent*

539. With the above in mind, ECOI will examine self-supply of all undertakings operating on market 3a and that provide service over copper networks with VDSL equipment and over fibre and use this to provide service over such networks on market 3b.

4.2.8 Local access on offer in this country

4.2.8.1 Míla

540. Mila offers access to local loops, both on copper and fibre. Copper local loops are the company's most widespread system at national level, and most homes and companies in the country have the option of a copper connection or about 86% of them as of end of year 2022. For many years, Mila has only connected to fibre local loops in new buildings, and in 2016 the company commenced vigorous deployment of fibre at many locations in the country, while Ljósleiðarinn and Tengir have been active in fibre distribution for over 20 years. During recent years the undertakings Snerpa, Austurljós and Eygló, and a large number of countryside networks have deployed fibre local loops, which has resulted in the proportion of copper connections declining little by little. They were 114,000 at end at year end 2016 and were 33,000 at the end of 2022. At the same time, use of fibre connections has increased. Fibre local loops in use were about 35,000 at the end of year 2016 and were about 121,000 at the end of year 2022. The proportion of copper local loops of local loops in use was therefore about 21% while fibre local loops were about 79% at end of year 2022.

541. Basic access to the copper local loop is access to the local loop, along with access to the lower part of the frequency range. Shared access to the copper local loop is access that is limited to the upper part of the frequency range. Full access to the copper local loop is access to both the upper and the lower part of the frequency range. The manner in which access is arranged when payment is made for access to copper local loop and where full payment is made for access, regardless of use of the local loop, is however not taken into account. Copper line is connected to distribution frame or corresponding facility in a Mila access network at a demarcation box. The sub loop is that part of the local loop that runs from the connection box (street cabinets) to the demarcation box. The demarcation box is the network connection point to the end user.

542. According to information from Siminn, there are plans with Siminn to close the PSTN voice telephony system and for some time now it has been clear that fibre connections and possibly mobile network solutions will in some instances replace copper connections. In the

regarding supply to third parties. Alternative operators´ networks should, in particular, be assessed when alternative operators´ networks are included in the relevant market due to the strong direct pricing constraints they exert on the incumbent operator. However, this is not justified if alternative operators face capacity constraints, or their networks lack a sufficiently large scale within the relevant geographic market expected by access seekers, and/or if alternative providers have difficulty in entering the merchant market readily.
The correct treatment of self-supply in the market analysis is not only relevant for the question whether the wholesale market comprises only one or multiple network infrastructures. It is also essential in order to carry out a proper market analysis and to identify correctly the competition problems in the market, which need to be taken into account in the assessment of the appropriate remedies.
In addition, in many cases the incumbent operator is the only undertaking that is in a position to provide a potential wholesale service. In the absence of a merchant market and where there is consumer harm at retail level, it is justifiable and appropriate for NRAs to construct a notional market when potential demand exists. Here the implicit self-supply of this input by the incumbent to itself should be taken into account."

light of widespread development of fibre access networks, of development of 5G networks and of the decommissioning of the public voice telephony system (PSTN), Mila has decided to stop operating the company's copper access networks before the end of 2028. According to information from Mila, most of the effort will be put into the decommissioning during the years 2027 2028. It is already the case that copper networks from various smaller telephone exchanges in the countryside are no longer in use as households are only using fibre or mobile network solutions. Mila was authorised in consultation with ECOI and with electronic communications companies, to stop using access networks that used copper local loops. Mila has submitted a timed schedule where the large telephone exchanges in the Capital City Area will be the last to be closed during the years 2027 and 2028. See discussion in Section 3.2.2.2 and figure 3.26 with the ECOI projection for progress in decommissioning the copper system.

543. In the opinion of ECOI, the impact of the Mila plans described above would have a rather small effect on development during the first part of the lifetime of this analysis, but more on the later part, though it is clear that the share of copper networks would continue to diminish with the increasing share of fibre. If Mila plans are realised, the copper network will be a thing of the past, around the planned end of the lifetime of the analysis. These plans would for example not affect the conclusion that there would still be substitutability between copper networks and fibre networks on the relevant market for the lifetime of this analysis, but it is however clear that the importance of copper networks will continue to diminish year by year vis-à-vis fibre networks.

544. Mila also offers access to fibre local loops which are often rolled out with PON topology. With this topology, one optical fibre is shared to the optical splitter and from there fibres to up to 128 customers. With active equipment with GPON technology, it is possible to provide very substantial data speed with great economy. PON architecture can be particularly suitable for electronic communications companies that already have network topology based on copper technology, as traditional conduits for a copper network from the distribution frame to street cabinets (with fibre) and from there to households or companies (with copper), can be used for such fibre cabling. In this connection one can mention that Mila laid fibre to street cabinets for quite some time, in the first instance for broadband roll-out for the cable system "Broadband" in the years before the turn-of-the-century, a system that was decommissioned just after turn-of-the-century, and again during the years 2011-2015 for its VDSL roll-out. In the GPON system there is no active equipment on the route from the distribution frame to the end user as the optical splitter is passive equipment that neither requires electricity nor other intervention. Mila offers GPON service through its own fibre in the Capital City Area and also widely across the country. Mila also offers GPON service through fibre systems owned by parties other than Mila, but not through the Ljósleiðarinn fibre network, except through a very small number of Ljósleiðarinn connections in parts of Árborg. As has previously been stated, there are certain limitations for other electronic communications companies to using local loop lease on a fibre network with PON topology, among other things because of lack of space for equipment and because of the start-up costs. Fibre-optic local loops on a PON network are therefore today only leased as part of the GPON bitstream service provided by Mila.

545. Mila Ljóslína lines on the corporate market, which are specially ordered P2P local loops constituting whole uninterrupted fibre threads from the distribution frame to the place of use, do not belong to market 3a as discussed here above. P2P Ljóslína lines on countryside

networks operated by Mila, can on the other hand be deemed to be part of market 3a, as such local loops are deployed in a comprehensive project for development of an access network.

546. As previously stated, it was prescribed in the PTA Decision no. 21/2014 and in the ECOI Decision no. 5/2021 that because it was problematic to provide access to street cabinets to more than one VDSL operator, then this should be resolved with virtual unbundled local access (VULA). It is possible to get local access to VULA in copper or through Mila GPON network. The following items appear in the Mila description of the service in Appendix 6 to the Reference offer for bitstream connections, dated 1 August 2017:

> *"Mila VULA service is delivered with varying speeds and characteristics related to the product type. The service purchaser is responsible for shaping the traffic in the speed required by the end user. VULA service is offered on VDSL2 and GPON Mila networks. Two VULA products are offered: On the one hand there is a VULA home connection, which is intended for the household market. On the other hand, there is the VULA corporate connection intended for the company market, which has support for prioritisation and multi-VLAN service. Speed categories for VDSL2 are in accordance with the carrying capacity of lines in both directions, to and from the user. In the case of GPON, the maximum availability is 500 Mb/s symmetric Internet speed. Mila reserves the right to change the product offer with 3 months' notice. Technical implementation of individual categories is defined in section 3.6."*

547. On the basis of these service characteristics as described in the Appendix to the Mila Reference offer, ECOI considers the service to belong to market 3a. There has however been almost negligible demand for the Mila VULA solution, and it seems that purchasers at wholesale level rather choose Access Option 1 in bitstream. This means that most Mila self-supply is in market 3a as an input for service the company offers on market 3b.

4.2.8.2 Ljósleiðarinn

548. Ljósleiðarinn operates a fibre network in the Capital City Area and in part of West and South Iceland. After Ljósleiðarinn acquired use of two threads in the NATO cable in 2022-2023, one can expect Ljósleiðarinn operational territory to expand in the coming years. The company is now preparing service on these threads but had to wait for the CA conclusion on the purchase agreement between Sýn and Ljósleiðarinn on the Ljósleiðarinn purchase of the Sýn trunk line network, which finally went through on 29 September 2023. The company offers active access to its network, which can be connected to at two connection points in Reykjavik. This constitutes a standardised access product as access is provided centrally and the purchasers have limited possibilities to control the network. This access product is therefore central access which belongs to market 3b.

549. Ljósleiðarinn does not offer access to passive local loops on the household market, i.e. access on market 3a. Local loops owned by the company are nevertheless an underlying part of the company's service on market 3b which means that the company is operating on market 3a with respect to service provided to its own operations in the form of self-supply, but the company does not conduct external selling on market 3a.

4.2.8.3 Tengir

550. Tengir owns and operates fibre networks at various locations in North and East Iceland and is responsible for operation of a fibre network in Tjörneshreppur. Then, for a period of time, Tengir was responsible for operating a fibre network in Fljótsdalshreppur, but no longer does that. In 2020, Tengir added the fibre network in Húnaþing vestra in the West part of North Iceland to its portfolio.

551. Tengir's main sales product is passive connections on market 3a, but Tengir also provides bitstream access on market 3b. Fibre local loops are also an underlying component in the offer of active connections and are therefore considered to be self-supply in market 3a.

4.2.8.4 Snerpa

552. Snerpa has deployed more than about 1,500 local loops in West Fjords and uses them to provide its own retail service and bitstream service in wholesale. Up to this point in time, Snerpa has not sold access to local loops without bitstream, first and foremost because of a lack of interest from potential access seekers, but Snerpa local loops are nevertheless part of market 3a as self-supply.

4.2.8.5 Other networks

553. A number of small fibre networks have been built in sparsely populated areas with the support of the Telecommunications Fund under Iceland Optical Connected project. These networks normally only offer passive access to fibre local loops and are therefore mainly on market 3a. Mila has access to almost all of these local networks and has been purchasing many of them or assuring long-term control over them. Austurljós has also deployed 400 fibre local loops at Egilsstaðir in East Iceland is thus operating both on markets 3a (self-supply) and 3b. Eygló in the Westman Islands is deploying a fibre network in the municipality, a project which is set for completion at end of year 2025 with deployment of something over 2,000 local loops. The company will only operate on market 3a and will leave it to other electronic communications undertakings to provide bitstream service on market 3b on the net.

4.2.9 Conclusion regarding definition of market 3a

554. With the above in mind, ECOI considers that the wholesale market 3a for local access with a fixed connection comprises access to physical connections in an access network in copper and fibre networks, along with the corresponding virtual network solutions that fulfil the criteria described in the Recommendation on the relevant market, i.e. 1) that access is local and not central; 2) that the lessee can choose the service he provides, and has guaranteed carrying capacity; 3) that the lessee has full control of the connection.

555. ECOI considers that all connections to fibre and copper networks that fulfil the above specified criteria belong to the same wholesale market and that there is no reason to delineate sub-national markets by varying technical solutions. Self-suppl of companies and company groups are also deemed part of the market.

556. In the opinion of ECOI, cable systems, satellites, wireless access network with fixed use location (FWA) and mains connected mobile network solutions over 4G/4.5G and 5G with a fixed use location, or other kinds of mobile network solutions, do not on the other hand, belong to the wholesale market in question.

4.3 Assessment of various access technology for the wholesale market for central access (market 3b)

557. An assessment has to be made of whether central access, as delineated in the ESA Recommendation currently in force on the relevant market and in Recommendation from the EU Commission on the relevant market from 2014 and in explanatory notes in a working document to the latter Recommendation, can possibly be provided over varying types of networks operating in this country. The types of networks that could be included in this connection are copper networks, fibre networks, cable systems, fixed Wi-Fi networks (FWA) and mobile networks. In the explanatory notes to the Commission Recommendation, it is stated that there is substitutability between bitstream on copper and fibre which means that both services should be part of the market.[103] Then one needs to examine competitive pressure and substitutability possibilities between these solutions and then finally decide which electronic communications networks forms the relevant market.

4.3.1 Bitstream access over copper and fibre networks and evaluation of substitutability between such services

558. Access services on market 3b constitute virtual connections. Virtual connections can belong to market 3a if they fulfil the criteria prescribed in the explanatory notes in the working document in question that accompanies to the EU Commission Recommendation from 2014 on local access, i.e. freedom to choose the service type provided on the connection; guaranteed carrying capacity and control by the wholesale purchaser of the connection. Wholesale services on market 3b do not need to fulfil these criteria and access to them is usually provided more centrally than on market 3a, i.e. in a switching station that serves a large part of an area or the whole country. Bitstream is normally covered by this definition in this country in the opinion of ECOI.

559. After the advent of VDSL and fibre, the supply and demand for ADSL connections almost disappeared, where the situation at end of year 2022 was that only 1,800 such connections were in use, which is about 1.3% of active bitstream connections in use and 5.4% of active xDSL connections in use. ECOI considers that the ADSL connections will decrease further in the coming months and years and will be a thing of the past, no later than by end of year 2025. Such connections provide only 12 Mb/s download speed at a maximum, and it was the ECOI conclusion in Section 3 on the retail market that such connections no longer provide copper connections with VDSL equipment, cable systems, fibre and mains connected mobile network connections with a fixed use location with 4G/4.5G and 5G technology, with substitutability. ECOI considers the same conclusion applies to ADSL connections on market 3b, i.e. that they no longer provide copper local loops with VDSL equipment and fibre, with substitutability.

[103] See page 46.

560. With respect to a description of fibre networks and their main operators one can refer to Section 4.2.3 here above, *mutatis mutandis*.

561. An evaluation is to be made on whether there is substitutability between bitstream access over fibre and copper local loops on the relevant wholesale market, and as is stated in Section 3 here above, it is the ECOI conclusion that substitutability is deemed to be present at retail level between Internet service over fibre networks and copper networks, which have been fitted with VDSL equipment. When evaluating this wholesale market, only bitstream access over copper local loops with VDSL equipment has been used as a basis.

562. The fact that substitutability exists at retail level with respect to such fixed line network solutions, does not necessarily without close examination lead to their being substitutability on the relevant wholesale market for local access at a fixed location. One has to take into account the competitive conditions in this country, including potential competitive pressure between these technical solutions.

563. In Article 7 of Regulation no. 556/2023 on market analysis in the field of electronic communications, there is discussion on methodology in market analysis. There it states:

> *"The relevant product or service market is composed of those product and service categories that have sufficient substitutability in the view of consumers, not only with respect to characteristics of the relevant product/service, to price and plan use, but also with a view to all competitive conditions and/or composition of supply and demand.*
>
> *ECOI shall categorise those products/service under the same market that consumers use for the same purpose. Products or service that only provide limited substitutability are not considered to belong to the same market, for example in those instances where final use of a product/service could be closely related to its characteristics, while varying types of product or service could also be applicable for the use in question.*
>
> *When evaluating competition, one must keep two elements in mind, in connection with behaviour of parties to the market:*
>
> a. *Demand-side substitutability. Indicates those substitute products or substitute service that consumers can easily switch between as a reaction to a small (5-10%) but non-transitory price increase of the reference product/service. Demand-side substitutability measures the extent of consumer willingness to switch from the product or service in question to another product or service. It is not necessary that all consumers switch, but rather that they do so in sufficient numbers for the small but non-transitory price increase to be unprofitable. ECOI shall use all appropriate data and indications on prior consumer behaviour, and shall also assess the likely reactions of consumers, and competitors, in the event of such a price increase.*
>
> b. *Supply-side substitutability. Indicates whether competitors of the party in question would make changes to their production in the short term (within 1-2 years) or offer the product or service in question without incurring significant additional costs, in the case of a small but non-transitory price*

increase. Potential competition is however taken into account when assessing market power, see Article 21 the Regulation."

564. As stated in Section 3 here above, ECOI considers it clear that there is demand-side substitutability between these technical solutions in the minds of consumers, as it is finally consumers that decide which access to underlying networks, they purchase for their Internet service and related services and the electronic communications undertakings must adapt to this. It is clear that there is still considerable demand for Internet service and related service over copper networks and Mila plans to offer such a service during the coming years, although the policy is to decommission them until the year 2028, where the most effort will be made in this during the years 2027 and 2028. Consumers can therefore in coming years still switch between the service types, for example if the price increases to small degree but non-transitory for fibre networks but not for copper networks. Consumers use service for the same purpose, regardless of the underlying fixed line network.

565. As substitutability is being evaluated here for the wholesale market, there is no reason not to also examine potential reactions of retail undertakings that make access requests on the relevant wholesale market. If one considers the two largest retailers in this country for Internet service, that is to say Siminn and Sýn, which jointly have close to 70% market share, it is clear that those undertakings both offer Internet access over copper and fibre networks at the same price in retail. It is finally the end user that decides his choice of underlying network, and it is clear that there are still about 20% of inhabitants which have their Internet connections over copper networks, even such that this percentage is still actual in a municipality like Seltjarnarnes, where fibre roll-out was fully completed 15 years ago. These retail undertakings have chosen not to offer varying price for Internet service in this country, depending on the underlying access technology, which indicates that they consider that they are providing a comparable experience for the user, regardless of the underlying access technology.

566. With respect to supply-side substitutability, ECOI considers that it does not exist between these technical solutions. As the copper network will eventually become history, it is not likely that electronic communications undertakings that operate fibre networks will begin to deploy copper networks or invest in bitstream equipment for copper networks. For substitutability to exist, it is however necessary that either demand-side or supply-side substitutability exists, and according to the above, ECOI considers that demand-side substitutability does exist between these technical solutions on the relevant wholesale market.

567. In Article 12 of the above specified Regulation, there is discussion on the hypothetical monopolist test (SSNIP test). There it states:

*"In addition to considering whether there is substitutability between a product/service because of its **characteristics, price and planned use,** ECOI investigates as is necessary and as appropriate, dominant demand conditions and supply-side conditions by applying the hypothetical monopolist test (SSNIP) in order to complete a definition of the relevant product or service market, among other things to decide whether varying technical solutions shall belong to the same wholesale market. ECOI shall be forward-looking when evaluating substitutability and take into account that*

potential access seekers, that have not begun to provide electronic communications service, do not need to consider the cost of switching when they select their access platform.

When applying the SSNIP test, ECOI assesses what would happen if the price of the product/service in question would increase permanently to a small degree (5-10%) given that the price of other products or service would remain unchanged.

In order to evaluate whether there is a need to impose obligations, ECOI shall first examine specific reference products or service that are provided in a specific area and their effect on product price. ECOI can add products/services and/or areas to investigate whether they have an impact, or until it is possible to assert whether the relevant pricing within a specific product or service market and geographic market is profitable, i.e. there is no longer a risk that profitability will decrease because of a decrease in sales resulting from customers switching over to substitute products or service or to competitors in other areas.

The SSNIP test is generally applied to products or service where pricing is unrestricted. If a product/service is subject to ECOI price control, it shall be generally assumed that cost analysed price is the competitive price and this shall be used as grounds in the test. ..." (ECOI emphasis edit)

568. It is clear that Internet service and planned use of end users of Internet service and related service are the same or at least similar in the eyes of consumers in this country, regardless of the underlying fixed line network, and in addition to this the price is the same. Then, the conclusions of the consumer surveys commissioned by ECOI in the years 2020 and 2022, including an SSNIP test, were to the effect that ECOI considers it clear that there is substitutability in the minds of consumers in this country between these technical solutions. In the opinion ECOI, copper local loops still continue to exert adequate competitive pressure on fibre local loops such that a small but non-transitory price increase in fibre loops at the same time as the price for copper local loops remain the same, would not be profitable.

569. With the above in mind, it is the assessment of ECOI that bitstream service on both fibre loops and copper local loops belong to the market 3b in question. This is in accordance with the above specified ESA Recommendation from 2016 which applies in this country[104], and in the large majority of European NRAs.

570. ECOI considers that active solutions such as bitstream and virtual solutions offered in copper or fibre networks that do not fulfil the necessary criteria to belong to market 3a and are used to provide mass-market bitstream service, belong to market 3b. These are all bitstream solutions, except those used for the VULA solutions.

[104] The same conclusions can be found in the new Recommendation from the EU Commission from December 2020. On page 52 in the working document accompanying this Recommendation it is stated among other things: *"Compared to WLA, Wholesale Central Access (WCA) products are typically provided to the access seekers at a higher and more central layer in the network architecture. As regards WCA services, it remains likely that there is a chain of substitution between copper DSL-based bitstream services and fibre-based bitstream services provided over FttH and FttC/VDSL networks in the near future ."* (ECOI emphasis edit)

571. In Sections 4.3.2-4.3.4 there will then be discussion on potential substitutability between bitstream service provided through the above specified cable systems and mobile networks, fixed Wi-Fi networks (FWA) and satellite on the one hand and bitstream access provided over the above specified fixed line network solutions over copper and fibre on the other.

4.3.2 Cable systems

572. It is technically possible to provide central wholesale bitstream access to cable systems that were initially designed for TV, and such networks are considered to be part of market 3b in some EEA states. ECOI tends towards the opinion that in this country it is not possible to consider cable systems to be part of the market. Only one local cable system for TV is operated in this country i.e. the cable system of Kapalvæðing in part of Reykjanesbær. The system has very limited distribution, in fact only in one district of one municipality. Kapalvæðing active connections on the cable system in question are only [...] which means that the company therefore only has a negligible share of the bitstream market at a national level. It therefore has such a small impact on the broadband market in this country that there is no reason to discuss it specifically in analysis of the market.

573. In addition to this, it should be noted that there is no wholesaler operating on this network and there has been no discernible demand for such access. It is unlikely that retailers will seek wholesale access to such a small network which is in many respects different from the networks to which the service providers are accustomed. Kapalvæðing has made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn fibre network and will therefore provide retail service over the whole of the company's operating territory. Mila operates a VDSL system there, and in addition to this both Mila and Ljósleiðarinn have commenced fibre deployment there which is likely to be completed in 2024.

574. ECOI therefore considers TV cable systems not to be a part of market 3b in this country.

4.3.3 Wireless access network with fixed use location and satellite

575. It was stated in the discussion here above on the retail market for Internet connections that users of fixed Wi-Fi connections in this country were very few and were decreasing in number. Despite the fact that it could be technically possible to provide central access to such networks, ECOI considers it unlikely that fixed Wi-Fi network access belongs to the same market as fixed line connections. The frequency licence of the operator that provides wireless access at a fixed location of use expires in the year 2024 and it is the intention that the frequencies will be used from that time on for another purpose, such as for mobile network service, including 5G. Wholesale access to such networks is not on offer in this country and demand for such access has not been seen. The networks will furthermore probably cease to operate during the lifetime of this analysis. In any event, the number of users is so negligible, only 244 at the end of year 2022, that such connections have no significance in connection with analysis of the market here being examined.

576. ECOI sees no indications that wholesale purchasers on the Icelandic electronic communications market consider access to satellite systems to be an option in this context

during the lifetime of this analysis, and in addition to this there is absolutely no certainty that such access is available to them.

577. ECOI therefore considers that wireless access network with fixed use location and satellite do not belong to market 3b.

4.3.4 Mobile network

578. With respect to mobile networks, ECOI came to the conclusion in discussion on the retail market that a sufficient number of consumers now considered data transfer based on mains connected mobile network routers with 4G/4.5G and 5G technology, to be an alternative to fibre connections, cable systems and copper connections with VDSL equipment, for there to be substitutability between all these technical solutions at retail level.

579. The fact that substitutability exists at retail level with respect to such mobile network solutions, does not necessarily lead to there being substitutability on the relevant wholesale market for local access at a fixed location. One must consider whether such bitstream access is technically possible in mobile networks, and one also has to consider market structure and competitive conditions in this country, and the competitive pressure that such networks exert on such access in the fixed line networks in question. In the opinion of ECOI, one must also assess whether such access is generally on offer in this country, and then in what form and whether the access is a realistic option for access seekers at wholesale level that purchase such access in the fixed networks in question on commercial grounds given the circumstances in this country, among other things with respect to cost and investment needs for the access. Then one must take into account self-supply of the mobile phone undertakings.

580. In Section 4.2.6 here above, ECOI came to the conclusion that such mobile network solutions do not provide the above specified fixed line network local loops with substitutability on market 3a. Then it was stated among other things that in general, the development in this country in fixed networks in recent years had been such that retailers purchased fewer and fewer local loops and chose rather bitstream connections. One explanation could be that this was a small market and that undertakings operating on the retail market did not see the gain from investing much in those electronic communications systems needed for such deep access. Siminn had for example now sold Mila most of its systems needed to provide Internet service and the mobile phone distribution system.

581. In Section 4.1.4 in the working document to the EU Commission Recommendation on the relevant market from December 2020, there is discussion on market 3b. There it is among other things stated on page 53 that one could expect that wireless technology would begin to compete with or replace copper infrastructure in the countryside and that further competition options related to wireless high-capacity access could emerge with 5G FWA. There is also reference to a BEREC Opinion, which was written in the first part of 2020, where it was stated that although most EU member states had come to the conclusion that there was no substitutability between fixed line technology and wireless technology, and that the time had not yet come to consider that there was substitutability between these technical solutions, this lack of substitutability could weaken in the future.[105] It was also stated that in

[105] See page 17 in BEREC Opinion, BoR (20) 174.

2020, such substitutability had been considered to exist in Italy, in Hungary, Romania, Belgium and Czech Republic on the relevant market and on the retail market in Austria.

582. Then it states on the same page in the working document in question that having taken into account expected development of mobile phone technology for the short and medium term, it is particularly likely that the 5G FWA will play a major role as substitute service for fixed network access, particularly in countryside areas within the EU and reference is specifically made to Sweden, Estonia and Italy in this connection. One can expect significantly increased coverage of 5G networks in the coming years (i.e. after 2020), which in many states is taking place among other things because of coverage requirements in frequency licences. Use of mobile phone technology was furthermore already widespread to a large degree. In the light of the fact that the Recommendation should be forward-looking, the above specified BEREC Opinion could be unnecessarily cautious.

583. On page 55 in the working document in question, it states that in addition to there being varying types of possible access providers, that provides service over varying fixed network infrastructure, indirect competitive pressure could result from wireless broadband connections. For this reason, the EU Commission reiterated what was stated here above that one could expect that wireless technology would for the short and medium term, begin to compete with or replace copper infrastructure in the countryside and that further competition options related to wireless high-capacity access could emerge with 5G FWA.

584. On 14 April 2023, ECOI sent questionnaires to the electronic communications companies where among other things they were asked for their position with regards to whether there could be substitutability on the wholesale market here in question between the above specified fixed line network local loops and the mobile network solutions in question. In order to encourage an open exchange of views on this issue, ECOI informed of the Administration's preliminary position that it considered that such substitutability might exist on market 3b, with the reservation of further research, but that it did not exist on market 3a. The replies from the electronic communications companies were then received at the beginning of May 2023.

585. **Siminn** said that it was the opinion of the company that retail undertakings could react to price rises on data connections over fixed lines, i.e. local loop and bitstream access, by offering their own customers solutions over wireless systems as an option. The undertakings would then use their own systems or the access to which the undertaking in question had access. This meant that the company could transfer part of its demand in wholesale to mobile systems. The undertakings could then decide to offer data transfer service solely through mobile systems instead of fixed line. Electronic communications undertakings did not need to move all customers from fixed line connections for substitutability to exist, and the wireless connection did not need to satisfy the needs of average users, only a sufficient number of fringe users.

586. Siminn also stated that throughout the years, varying solutions on the basis of market 3b had been defined as part of the same market. The company stated that it was established that mobile phone companies in Iceland offered wholesale access, which constituted the possibility of using the systems for data transfer service with a router. The mobile phone companies could then move users from fixed line connections over to their own mobile phone

systems. There was also the possibility that the mobile phone companies did not use fixed line systems, but relied entirely on their own mobile phone systems, see presentation of Nova and also of Sýn of Internet service. If the boundaries were from ADSL and up to fibre, then in the opinion of Siminn, it was clear that most mobile network solutions would also be within the boundaries of the market. If there were specific solutions on a separate market, such as ADSL or VDSL on separate markets, then the categorisation will appear in quite a different manner.

587. **Nova** said that one could possibly consider there to be substitutability between fixed line and mobile networks on market 3b, as 4.5G and/or 5G service had achieved adequate density and environmental factors were advantageous for deployment of such mobile networks such that it would be possible to ensure adequate connections within buildings. One needed however to keep in mind that in the country there were probably around 1,600 electronic communications transmitters that handled mobile network service and Nova estimated that only 400-500 of them provided 5G service. Fibre-optic connections were on the other hand, about 120,000, and even more fibre had been deployed. When assessing substitutability, it was important to take into account a number of interactive factors that impacted on consumer choice, while taking care not to focus on just one or a few factors, such as pricing and quality of connections. There had been little price difference in fast line connections on the basis of technology, or between fast line connections and mobile network connections. When one considered on the other hand pricing in the context of bundles of service, where, for example, TV service was often included in the fixed line network bundle, it came to light that price was not comparable between fixed and mobile network solutions. Substitutability did therefore not exist except in the case of those customers that did not use TV service.

588. Nova also said that development of mobile networks had been significant, and both speed and ping had improved with each technical generation that had been taken into use. On the basis of those quality criteria, it was Nova's opinion that there could be substitutability between mobile network and fixed line network service when customers were only looking for Internet service and where circumstances were good for mobile network solutions. Mobile network service could be sensitive to a variety of environmental factors and customers could therefore not take advantage of mobile network service where such hindrances existed. This meant that there could not be substitutability between mobile network service and fixed line network service in all locations. When customers selected solutions, some of them understood the use. If they were demanding stability and response, for example for real time use, such as live broadcasts or gaming in real time, then fixed line network solutions would have provided a more stable experience which would mean that substitutability in such instances emerging at a slower pace, though this development had commenced.

589. Nova stated that [...].

590. It was finally stated by Nova that it was necessary that ECOI conducted a separate assessment of substitutability based on circumstances in this country, even though in some European states the conclusion had been reached that such substitutability did not exist. Market circumstances vary between countries, and particularly with respect to how products were "packaged" for customers, and in Iceland bundling was now particularly prevalent with

the attendant "lock in" measures that, among other things involved directing customers towards a specific technology, for example, with the use of IPTV. [...].

591. **Sýn** considered it difficult to understand that mobile network service at wholesale level was compared to bitstream service over fixed line networks on the one hand and local loops on the other. Mobile network service was by the nature of things never divided in that way, but rather the solution was sold as Internet service over 5G, both at retail and wholesale level. If one were to talk about substitutability at wholesale level, between Internet service over mobile network on the one hand and fixed network on the other, then markets 3a and 3b should be merged. It would be possible to argue that there was even greater substitutability between mobile networks and traditional mobile phone service than between mobile networks and fixed line networks. Mobile phone subscriptions did in reality everything that such a mobile network did, and even more.

592. Sýn said that *fixed line networks* were local, promised specific defined speed and were always accessible, regardless of load. In addition to this, it was possible to reserve a separate channel for IPTV and VLAN. *Mobile networks* worked anywhere, speed dependent on load, i.e. the number of concurrent users and it was not possible to reserve a separate channel for IPTV and VLAN on the market for individuals. Possible endpoint equipment items were mobile network routers, dongles, tablets and computers with various additional equipment that used data (IoT, cameras, cars etc.). Endpoint equipment could be purchased from Internet service providers or customers could use their own equipment. Mobile phone subscriptions have the same characteristics as mobile networks in all respects but were often used without endpoint equipment. In addition, there was open access to voice through VoLTE messages.[106]

593. **Snerpa** considered that there might be substitutability between Internet service over a fixed line network on the one hand and on mobile network on the other on market 3b. With regards to mobile network connections, it had not been an option to resell Access Option 3 (A3) to the best of Snerpa's knowledge and the next equivalent Access Option 4 (A4) had only constituted resale (configuration) of what was on offer from the relevant electronic communications undertaking, i.e. insertion of SIM cards in equipment, then there was the commercial relationship without intermediary between a mobile phone company and customer. Mobile phone companies had not required a fee for initiating such business. It would not be worth the costs to manage A4 for a few users, though it might conceivably have been possible to demand this from mobile phone companies.

594. Snerpa considered that even though this were the case, 3G connections had only to a limited degree (mainly with fixed access points) been considered a substitute product on the market for individuals, then mainly when other options for network connections were not on offer, for example in the countryside where copper lines were either too long or not in place. Had it however been on offer to sell bitstream as A3 over a mobile phone system, Snerpa would probably have made use of this, where the circumstances were such that such a

[106] It could also be mentioned that in the discussion on the position of Ljósleiðarinn here below among other things refer to discussion by Ljósleiðarinn and Sýn (parties to merger) in a merger notification to CA on the occasion of the Ljósleiðarinn purchase of the Sýn trunk line network. There one can see that the Sýn position, as one of the merger parties, is much more positive with regards to substitutability than is shown here, at least with regards to retail level. In that case, the parties to the merger assert that there is substitutability between fixed line network and mobile network solutions in the providing of Internet service, at least at retail level.

connection was stable and other solutions not on offer. Snerpa had set up 3G/4G solutions as reserve routes, for example for [...], on the commercial connection for these connections had been forwarded to the relevant mobile phone company, as bitstream access had not been on offer. Corporate connections on 3G/4G/5G were however clearly substitute products for wholesale connections.

595. **Hringiðan** said that ECOI should ensure that there were rules in place about virtual access (MVNO access) to Nova and Sýn systems on the one hand and to Mila and Siminn on the other. The company also reiterated that it had previously informed ECOI that the company chose rather to sell 5G connections were this was on offer. There might be a necessity to check the price and customer experience.

596. **Mila** considered that substitutability did not exist on market 3b between mobile and fixed line networks. After a detailed examination and in its previous clear reply from January 2023 it was the company's view that despite the fact that Internet service over mobile network had been making its mark in the service offer on the retail market, and could possibly be considered a substitute product, the same did not necessarily apply to the wholesale market. One had to take many factors into account when assessing whether real substitutability in the understanding of competition law actually existed. One could, among other things name factors such as product characteristics, price, planned use and general customer wishes and needs. Indications on competition barriers were another important aspect, and in this connection, one had to assess whether Internet service over a mobile network had real impact on those companies that offered Internet service over, for example fibre. Most useful in this connection was to conduct an SSNIP test, as on the basis of such a test it was in all likelihood possible to reach a clear conclusion on potential substitutability between mobile and fixed networks.

597. Mila said that a retail company had been offering mobile network solutions for some time. The price of the service and development of number of end users from the time that the service had first been offered should give strong indications of potential substitutability and even further if there were indications that the above specified service had had the impact that end users in a fixed line network had at the same time been on the decrease.

598. In the opinion of Mila, it is also undoubtedly important to evaluate whether the mobile network solutions offered in this country fulfilled the conditions generally set to be considered a real wireless solution at a fixed location of use (FWA). It seems that the conditions for a fixed location of use were not necessarily imposed or fulfilled in all instances, nor other conditions, such as for example that subscriptions received reserved quality, traffic control or specific maximum and minimum performance.

599. Mila also considered it possible to discuss limited substitutability under specific circumstances or on a specific basis. The company for example considered that there could be a likelihood of substitutability for VDSL, as the speed could be up to 100 Mb/s, but the same did not necessarily apply to fibre connections.

600. Mila said that the use of mobile network solutions was generally most where deployment of other broadband solutions was minimal and infrastructure for fixed line networks either not in place or extremely weak. This did not apply to Iceland, and for this

reason Mila considers it unlikely that the proportion of connections over mobile networks would go much over 5-7% of total connections in Internet service in Iceland. This was among other things in accordance with the opinion of Analysys Mason[107] which had considered that coverage of wireless access networks would be very limited in the future, or only about 6-7% of total number of connections. It was important to take into account how the nature of mobile network technology differed from fibre technology, particularly with respect to bandwidth and carrying capacity, and the limits to these elements. Mobile solutions could both be susceptible to interference on the frequency range and sensitive to the number of users at any location.

601. Mila stated that in general the current frequency bands, i.e. 700 MHz-2.2 GHz were in use for general mobile phone traffic, but not particularly for wireless access networks. These frequency bands had a rather low bit speed. These lowest frequency bands could generally not offer wireless access connections at 100 Mb/s, unless customers were very few for each transmitter. This was because of limited frequency supply at these low frequencies. Range was however good and external aerials generally not necessary except in a few instances. In order to approach being able to generally offer 1Gb/s, it would be necessary to go to the wireless frequency range (8-80 GHz), but one would then need to significantly increase the number of transmitters with the attendant increased costs. One might also need to erect an external aerial to ensure reception of a signal indoors within an apartment. There was also the fact that this frequency will have much greater sensitivity to barriers such as snow or leaves. Up to this point in time, results from the solution have been limited.

602. Mila finally indicated an [...]

603. **Ljósleiðarinn** considered that there was substitutability between the mobile network solutions and fixed line connections in question, regardless of whether one considered homes or small and medium companies. Substitutability had existed for some time, particularly with the advent on the one hand of 4G and on the other hand upgrade to 4.5G, and not least now with the arrival of 5G solutions. One could see from marketing material from sellers on this market that the solutions in question had been offered in parallel to fibre and copper connections. There was at least a chain of substitution between xDSL, mobile networks and fibre connections, as they all offered the above specified ways of connecting to the Internet.

604. The Ljósleiðarinn letter of reply was accompanied with the company's memorandum that it submitted to CA in the company's notification of merger with Sýn (parties to merger). There, among other things a discussion on markets 3a and 3b can be found.[108] Parties to the merger noted there that the retail market based on wholesale services on markets 3a and 3b constituted user connections at a fixed location that enabled users to access the Internet. Parties to the merger now considered that mobile network service was sufficiently powerful for it to be possible to use in achieving connections to the Internet with relatively good bandwidth. On the retail market for standard broadband access, the parties to the merger considered that the following services belong to the market: Broadband connections on

[107] See Analysys Mason´s predictions for the consumer services market in 2023 from 13 December 2022.
[108] In the opinion of ECOI, discussion from the parties to the merger was based first and foremost on retail level, but to a lesser degree on potential substitutability on markets 3a and/or 3b.

copper network with xDSL technology, fibre connections, connections or cable systems and mobile network connections, particularly 5G and 4.5G service.

605. Parties to the merger then noted that users generally had little interest in the electronic communications technology that disseminated service to users, as long as the technology in question disseminated material and service with the quality and volume they required. The above can be seen among other things in statistics on general use of fibre networks, that indicated that some of the users did not have much interest in replacing xDSL connections with fibre when it became accessible. This also provided an indication that although performance of electronic communications networks might vary, but did not have an impact on demand, then electronic communications service that provided varying performance in data transfer could belong to the same market. Connections with varying speed could be substitute services as long as the difference in speed did not lead to a different experience of the service over the connection. The parties to the merger considered that there was substitutability between the above specified fixed line solutions and mobile network solutions, such as 4G, 4.5G, 5G and future solutions. In support of this, it was pointed out that customers chose mobile network solutions instead of xDSL service as mobile network solutions could offer greater bandwidth than xDSL service before fibre was deployed to households in the area in question.

606. The parties to the merger considered that 5G service was a substitute product for fixed lines. This meant that fixed line markets and mobile network markets were in reality the same market. This view was not based entirely on taking into account carrying capacity of these electronic communication systems, but also on taking into account the significant changes to those that used electronic communications service. Very rapid development in recent years in information and software technology had revolutionised the pattern of usage of individuals and undertakings of telecommunications services. Information systems and technology now enabled users to access and disseminate information and data, independent of endpoint equipment (laptop, smart phones, desktop computer) or of location. In support of the above, the parties to the merger pointed out that for quite some time mobile networks had almost exclusively carried voice telephony and SMS service, but the share of these two items was a negligible part of monthly data volume passing through mobile networks today. The parties to the merger referred among other things to statistics on monthly data volume by mobile phone in mobile networks per month in Europe over the period 2011-2023 and to projections until 2027 which showed this development in the opinion of the parties to the merger.

607. The parties to the merger, said that this development had supported an increased chain of substitution between xDSL and mobile networks and fibre networks and mobile networks. Functionality and quality of service and apps were the same, regardless of whether the user had access to them through a fibre network, xDSL or mobile network. It was therefore risky to focus solely on data transfer capacity of these technical solutions. All of these network systems were sufficiently powerful to be able to meet the demands of the vast majority of users for the services they used. It was more important to look at the nature of the service that created demand on electronic communications systems, and whether those electronic communications systems had the carrying capacity and technical capability to meet that demand. It went without saying in the opinion of the parties to the merger that there was contiguity between fibre, xDSL and mobile networks, and that they as a whole could meet user demands for the above-named services.

608. According to the above, the electronic communications undertakings did not entirely agree on whether there was substitutability between bitstream solutions over fixed line networks and mobile networks. Síminn, Snerpa, Hringiðan and Ljósleiðarinn variously considered that substitutability existed or that there was a likelihood that this was the case. The replies from Nova and Sýn were rather unclear, but one cannot understand them otherwise than to mean that they do not exclude substitutability. Only Mila appears to believe that such substitutability does not exist. One may thus say overall that the undertakings are rather of the belief that such substitutability could exist rather than not.

609. There are three mobile network companies operating in this country with frequency licences, with their own mobile phone core and two of them own their own mobile phone distribution system after Mila purchased the Siminn mobile phone distribution system at the beginning of 2021. With a population of just under 400,000 the Icelandic electronic communications market, and thus the mobile network market is very small in a European context.

610. [...]

611. [...]

612. Bitstream access over mobile networks is not on offer as a separate wholesale product from mobile network operators. Access to mobile networks in wholesale was assessed in active competition in PTA Decision no. 11/2012 and has since then been provided on commercial terms with free agreements between companies. There have been several MVNOs throughout the years, but none has achieved lasting success. The access that now seems to be provided by mobile network operators is in the form of resale, i.e. that the network operator handles all technical service. Access seekers use a specific sequence of SIM cards that can be distinguished from the network operator's SIM cards, and they handle sales tasks and marketing, invoicing and payment collection from the customers.

613. Resale service is the lowest form of bitstream access and for this reason the resale of mobile network service that constitutes service with SIM cards that are in mains connected mobile network routers are considered to be wholesale on market 3b because of the substitutability of that service for Internet service over fixed lines at retail level, as will be further argued in this section.

614. For a period of many years. Siminn provided Hringdu with access on wholesale rates (A4) and Hringdu has a measurable share in service of mains connected network routers, particularly on 4G/4.5G but the Hringdu 5G share in such service is hardly measurable up to this point in time. In the letter of reply from Siminn to ECOI dated 3 May 2023. Siminn stated that [...]

615. Nova provided Kapalvæðing with mobile network access for mains connected network routers, a practice that commenced as a rescue measure after a fire in the cable company's control centre. Nova also provides Hringiðan with such access. This Nova wholesale is on a very small scale and has an almost negligible impact with respect to the number of mains connected mobile network routers.

616. In the opinion of ECOI, it is likely that smaller electronic communications companies or potential new competitors will let bitstream access suffice, or even resell access, like Hringdu, Hringiðan and Kapalvæðing have done, if they wish to offer the mobile network solution in question to households and companies. It is of course unclear whether the mobile phone companies wish to provide deeper bitstream access to their mobile networks, for example A3 access, which may damage their retail departments. Snerpa, which only provides Internet service over fixed line networks today, has among other things mentioned that such A3 access had not been on offer to the company from the mobile phone companies. Snerpa also says that A4 access is not an attractive option as it would not provide any returns for the company. Hringdu has however had quite a long commercial relationship with Siminn on mobile network service and stability indicates that both Siminn and Hringdu are showing some returns from the business. It could be significant here that Hringdu is a much larger company than Snerpa and thus have increased opportunities in this arena.

617. The fact that the possibility is technically in place, to provide bitstream access for the mobile network service in question in mobile networks, does not answer the question as to whether there may be a satisfactory supply of such a solution, including with deeper bitstream access than A4, or whether there is much demand for such bitstream service given circumstances in this country, i.e. whether this is realistic from a commercial point of view for parties that do not operate their own mobile network. It is worth noting that there are no obligations resting on mobile phone operators in this country to offer such bitstream solutions to external parties.

618. In this connection, one must however keep in mind that the three mobile phone companies that jointly have well over 90% market share of mobile phone service on the retail market for mobile phone service, have very substantial self-supply from their mobile phone systems, i.e. that they use their mobile phone systems as access to provide mobile phone service at retail level, and to provide the mobile network service in question through mains connected mobile network routers referred to in this case. The fact that they use their own electronic communications networks for the above specified mobile network solutions, saves them leasing on fixed line networks and increases the usage of their own investments. In the light of the fact that about 15% of the country's households use such mobile network solutions instead of fixed line network solutions, ECOI considers that the self-supply in question, and the bitstream service that is already provided, for example to Hringdu, and possibly for more parties during the lifetime of the analysis, exerts direct competitive pressure on operators of fixed line networks in this country. This could in the opinion of ECOI, easily make a small but non-transitory price increase on bitstream connections over fixed line network - while price remains unchanged for bitstream access over mobile network - unprofitable.

619. With the above in mind it is the ECOI conclusion that there is demand-side substitutability between bitstream access on the one hand through fibre network and copper network with VDSL equipment and on the other hand, 4G/4.5G and 5G mobile networks (and as appropriate, later mobile network generations) which give the possibility of providing Internet service through mains connected network routers, and that this substitutability will exist throughout the lifetime of this analysis. ECOI considers there to be a close relationship between such substitutability on the retail market and market 3b. Most of the electronic communications companies also agree with this assessment.

620. ECOI considers that supply-side substitutability does not however exist between these technical solutions as it must be considered to be very unlikely that mobile phone operators will start to develop fixed line networks or the fixed line network operators that do not have any mobile network today, will begin to develop mobile networks for the purpose of providing bitstream service for self and external supply, though this is not entirely out of the question. For substitutability to be in place, it is sufficient for either demand-side or supply-side substitutability to have been demonstrated. This means that the lack of supply-side substitutability does not prevent the substitutability in question being in place on market 3b.

4.3.5 Self-supply

621. In the same way as with respect to local access, ECOI considers that underlying central access of electronic communications companies provides competitive pressure against other comparable wholesale services and for this reason it is appropriate to include them and to take them into account when assessing competition on the market, if the wholesale operations in question fulfills the criteria described here above with respect to delineation of the relevant markets.

622. Self-supply of central access within the same company, is particularly susceptible for examination when the company uses its central network for access to a related retail market for retail markets; in this instance the retail market for broadband service to homes and companies. With respect to fixed line network, retail takes place in the name of companies other than those that operate the core network, but however within the same company as in the case of Snerpa in the West Fjords. With respect to mobile networks, retail on the other hand, takes place most frequently within the same company, which means that self-supply is not particularly important there.

623. In most instances in this country, retail or fixed line network service takes place in another company than wholesale, as stated above, which means that it is easy to identify the boundary between wholesale and retail. There are however cases of companies who operate their own central access and use it as a component in its retail service, but such share is negligible today. Prior to the sale of Mila to Ardian, the Siminn Group was a vertically integrated company in this connection, as Mila operated service on market 3a and market 3b and Siminn operated mostly at retail level. After the sale of Mila, the vertically integrated ownership connections between Mila and Siminn were cut and the companies now operate as independent parties, one on the wholesale market and the other on the retail market. This means that after Mila was sold to Siminn, this is no longer considered to be self-supply, but rather external sales.

624. Snerpa as a vertically integrated company as it has its own fibre local loops connected to its own active bitstream equipment and sells retail service to end users. The company operates its own xDSL (VDSL) equipment on copper local loops leased from Mila and provides customers with Internet service over the system. Snerpa bitstream service serves both its own retail and wholesale bitstream access over its own fibre and xDSL equipment. Snerpa self-supply shall therefore be categorised as part of the relevant wholesale market.

625. In service with mains connected mobile network routers, a large majority of customers are transacting with the electronic communications company itself, as previously stated. This

is self-supply which shall be taken into account when assessing the relevant wholesale market.

626. In Section 3.3 in the working document accompanying the EU Commission Recommendation on the relevant market, there is discussion on self-supply by electronic communications undertakings. Among other things, it is stated there in connection with market analysis, that where NRAs make an assessment as to whether interventions in the form of ex-ante obligations are justified, one needs without exception, to decide whether self-supply of wholesale procurements needs to be taken into account, both when defining the relevant wholesale market and when assessing market power and as appropriate both with respect to potential parties with significant market power and to other electronic communications undertakings. The purpose of market analysis is to assess whether there may be any need at all for intervention, that can lead to some kind of treatment of self-supply at wholesale level and in instances of exercising provisions of general competition law.

627. Then it is furthermore stated that NRAs should begin definition of the relevant product or service market by categorising products or services used by consumers for the same purpose. When self-supply and external supply cannot be differentiated from the point of view of consumers and where the services in question have comparable functionality and can replace each other, then such self-supply should belong to the same service market as external supply.[109]

628. With the above in mind, ECOI will examine self-supply of all undertakings operating on market 3b and that provide service over copper networks with VDSL equipment and over fibre and over the above specified mobile networks and use this to provide service over such networks on the retail market, that is related to the wholesale market in question.

4.3.6 Central access on offer in this country

4.3.6.1 Míla

629. Mila offers three kinds of central access with fixed line connections for mass-produced products (bitstream access). In ADSL systems, 12 Mb/s is the maximum bandwidth on offer,

[109] In the section of the working document in question it furthermore states: *"In cases where there is likely demand substitution, i.e. where wholesale customers are interested in procuring from alternative operators, it may be justified to take self-supply of such products into consideration for the sake of market delineation. Even where there is an alternative potential supplier, it may share the same strategic interests as the incumbent regarding supply to third parties. Alternative operators´ networks should, in particular, be assessed when alternative operators´ networks are included in the relevant market due to the strong direct pricing constraints they exert on the incumbent operator. However, this is not justified if alternative operators face capacity constraints, or their networks lack a sufficiently large scale within the relevant geographic market expected by access seekers, and/or if alternative providers have difficulty in entering the merchant market readily.*
The correct treatment of self-supply in the market analysis is not only relevant for the question whether the wholesale market comprises only one or multiple network infrastructures. It is also essential in order to carry out a proper market analysis and to identify correctly the competition problems in the market, which need to be taken into account in the assessment of the appropriate remedies.
In addition, in many cases the incumbent operator is the only undertaking that is in a position to provide a potential wholesale service. In the absence of a merchant market and where there is consumer harm at retail level, it is justifiable and appropriate for NRAs to construct a notional market when potential demand exists. Here the implicit self-supply of this input by the incumbent to itself should be taken into account."

but as is stated here above it is the ECOI conclusion that this service no longer belongs to the relevant market, in VDSL systems it is 50 Mb/s or 100 Mb/s if vectoring is applied to the line and 100, 500 and 1,000 Mb/s (1 Gb/s) for GPON in the bitstream system. On 22 August 2023, Mila, announced its plans to adopt an XGS-PON solution which technically can offer 10 Gb/s symmetric performance and to commence service on 1 October 2023 in the Capital City Area, but such that 10 Gb/s would only be on offer in the Múli telephone exchange area, and 2.5 Gb/s elsewhere in the area. The whole Capital City Area would then be upgraded to 10 Gb/s performance by 1 April 2024. Real performance to customers, will however be 8.6 Gb/s maximum, as the overhead of communication protocols and error corrections impair performance that customers can use.

630. Access Option 1 is the option most often used by Mila customers. Access Option 1 in copper networks is delivered through DSLAM or equivalent equipment at the place where the copper local loops connect to the telephone exchange distribution frame or street cabinet. A service provider connects to Mila DSLAM/wholesale switch directly into the technical space in question with a 1 Gb/s or 10 Gb/s connection. The service provider himself must provide an access server (BRAS) and a transmission layer to the DSLAM/wholesale switch. In the case of Access Option 1 for GPON, access is provided in DSLAM/OLT equipment in the Mila technical space. Service providers themselves are responsible for customer equipment for their own customers. This Access Option is provided locally and does not have the flexibility and control possibilities that are necessary for it to belong to market 3a.

631. Access Option 2 is on offer at those places where the Mila core network offers MPLS-TP connections, but Mila wholesale customers have, to date, only availed themselves of this Access Option to a limited degree. After the transfer of the Siminn IP/MPLS system to Mila at the turn of the year 2020/2021 Míla has [...]

632. Access Option 3 constitutes transfer on the Mila trunk line network to a connection point of another electronic communications company with Mila access server (BRAS). Connections are provided with the data transfer speed that is technically possible at any given time. The service provider connects to an IP/MPLS network and from there receives access to a transmission layer and access server. Service providers themselves are responsible for customer equipment for their own customers. Síminn was previously responsible for the IP/MPLS part of transit in Access Option 3, but after Mila took over the IP-MPLS system at the beginning of 2021, Mila is responsible for the transit in question.

633. Access Options 1, 2 and 3 are connections in an access network for Mila bitstream service for central access provided at a fixed location for mass-market products through the company's copper - (xDSL) - and fibre networks. Access Option 2 is on offer where MPLS-TP connections are in situ. With the above specified Access Options through ADSL and VDSL solutions on Mila copper networks and GPON solutions in fibre networks there are generally three virtual networks on offer to households. One virtual network for each service; general internet service, IPTV distribution system and voice telephony with IP transmission, VoIP.

634. Mila also offers bitstream solutions for the corporate market.[110] The solutions are on offer for ADSL, G.SHDSL, VDSL and GPON bitstream systems where the setting up of three virtual networks is also on offer; for general Internet service, VoIP, voice telephony and for interconnection between branches or operational locations. There is also a fourth virtual network on offer for GPON corporate connections, but though not through Access Option 3, and that virtual network is intended for control and monitoring of user equipment. It is possible to receive transmission on virtual network for TV through a GPON connection, if it is available from the connection point in question. Bitstream service that constitutes or is the underlying layer for high-quality service for companies, is not included in market 3b but rather in market 4.

635. Access Option 4 is the lowest form of bitstream access and constitutes resale of fully produced service. A purchaser of resold service can however add various kinds of value-added service, that he produces himself and provides for his customers as part of his retail offer. After the transfer of AS numbers and IP numbers from Siminn to Mila, prior to the sale of Mila to Ardian and the related Siminn equipment, Siminn no longer produces its own Internet service, but purchases it entirely from Mila.

636. Mila now has production capability and procurements for Access Option 4, but obligations on such an access option were imposed on Siminn Internet service before Mila was founded and Siminn wholesale moved to that company. There was no demand for resale access to Siminn Internet service, as the smallest Internet service providers were fully capable of producing their own service and those wholesale obligations were withdrawn from Siminn, but obligations on wholesale on Access Options 1, 2 and 3 were maintained on Mila in the next analysis.

637. The situation has now, however arisen that there is considerable demand being generated for Access Option 4, as the largest Internet service provider on the contrary, has ceased independent operations in the production of Internet service and has prior to the sale of Mila to Ardian, sold elements for technical operations to Mila and repurchases them through resale.

638. As stated in Section 4.2.8.1 here above, Mila intends to decommission its copper network in phases until the end of 2028 subsequent to the country's fibre roll-out. Access to bitstream service through xDSL technology over copper lines will therefore be decommissioned at the same time.

4.3.6.2 Ljósleiðarinn

639. Ljósleiðarinn operates a fibre network in the Capital City Area and in part of West and South Iceland. After having acquired access to two threads in the NATO cable, and after CA endorsed the company's purchase of the Sýn core network on 29 September 2023, is not unlikely that the company's operational territory will be enlarged. The company offers central access with a fixed line connection for mass-market products which can be connected to at two connection points in Reykjavik. 1 Gb/s connections are on offer to end users. This

[110] See Mila tariff and technical conditions for bitstream access, Appendices 1, 2 and 3 to the Reference offer on bitstream from 1.6.2019.

constitutes a standardised access product in the form of Internet, VoIP and IPTV, as access is provided centrally, and the purchasers have limited possibilities to control the network. On 13 September 2023, Ljósleiðarinn announced its plans to offer an upgrade to 10 Gb/s service across its whole operational territory from and including 1 October 2023. This access product is therefore central access which belongs to market 3b.

4.3.6.3 Tengir

640. Tengir owns and operates fibre networks at various locations in North and East Iceland and is responsible for operation of a fibre network in Tjörneshreppur. Then, for a period of time, Tengir was responsible for operating a fibre network in Fljótsdalshreppur, but no longer does that. In 2020, the fibre network in Húnaþing vestra was included to Tengir portfolio.

641. Tengir offers active central access which belongs to the market 3b and Mila purchases access to the Tengir fibre network on market 3a and builds its own bitstream service on that network which Mila sells in wholesale to retail companies and is in fact a larger operator than Tengir itself in bitstream in the area in question and also when one only takes into account bitstream service over the Tengir fibre network.

4.3.6.4 Snerpa

642. Snerpa provides access to bitstream service in wholesale on its networks, where it operates both its own xDSL equipment on copper local loops leased from Mila and bitstream equipment on its own P2P fibre local loops.

4.3.6.5 Síminn

643. Siminn operates the most extensive wholesale in mobile network service on the national market in the form of resale to Hringdu. The SIM cards used in mains connected mobile network routers, are deemed to belong to market 3b, both for self-supply and external sale.

4.3.6.6 Sýn

644. No resale or other wholesale of mobile networks is provided at this point in time by Sýn, but if this is done during the period of validity of the analysis, those SIM cards that are used in the mains connected mobile network routers will be considered to belong to wholesale on market 3b. Sýn self-supply is however considered to belong to the market.

645. Sýn is also developed its own bitstream service on local fibre networks and used it in its own retail service on those networks. After the sale to Ljósleiðarinn, which finally went through on 29 September 2023, this is not the case anymore.

4.3.6.7 Nova

646. Nova handles wholesale to a very small degree to Kapalvæðing and Hringiðan in mobile networks. Both Nova self-supply and external sales are deemed to belong to the market with

respect to the mobile network solutions in question, and Nova is the largest party on that part of the market in this country.

4.3.6.8 Other networks

647. Austurljós has deployed up to 400 fibre local loops at Egilsstaðir in East Iceland provides bitstream access for external use, and for self-supply as the company also operates at retail level. A number of small fibre networks have been built with state aid in sparsely populated areas with the support of the Telecommunications Fund under Iceland Optical Connected project. These fibre local loops were about 6,300 in total when the last tens of local loops from the project had been deployed in 2023. These networks normally only offer passive access to fibre local loops and are therefore mainly on market 3a.

648. Most of these networks were developed by the municipalities themselves that for this purpose had received a grant from the project. Various contractors have worked for the municipalities, among others, Mila and Tengir have worked on design and installation of networks that have received such grants. It is therefore undisputed that the relevant networks were developed with state aid, regardless of which party it was that received the grant in a direct manner. Mila has however purchased some of these networks and leased access to other such networks in order to install active equipment and offer central access that belongs to market 3b.

4.3.7 Conclusion regarding definition of market 3b

649. With the above in mind, ECOI considers that the wholesale market 3b for central access comprises virtual solutions offered centrally in fibre networks, copper networks to which VDSL equipment has been connected and mobile network solutions on 4G/4.5G on 5G (and future mobile network generations) over mains connected network routers at a fixed location of use, that do not fulfil the conditions to be considered to belong to market 3a and they are used to provide central mass-produced bitstream service. ECOI considers that all connections to the networks in question that fulfil the above specified criteria belong to the relevant wholesale market and that there is no reason to segment sub-national markets by varying technical solutions. As stated in the discussion on the retail market, ECOI considers that there is substitutability between differing solutions on these networks and with this in mind one must also conclude that there is substitutability in wholesale in the relevant market, as these markets are closely connected. Self-supply of companies and company groups in the relevant market are part of the market. Central access through cable systems, wireless access network with fixed use location (FWA), satellite and other kinds of mobile phone service than specified above do not belong to the relevant service market.

5 Geographic market definition

5.1 Regulatory framework and Guidelines with respect to geographic definition, ECOI market analysis pursuant to Decision no. 5/2021 and foreign precedent

5.1.1 In general, on analysis of geographic markets

650. When the relevant product and service markets have been identified and the products/services belonging to the relevant markets at retail and wholesale levels have been defined, the next step is to identify and decide the geographic dimensions of the markets. It is not before the geographic dimension of the relevant product/service market has been decided that the electronic communications authority in question can adequately analyse competitive conditions on the relevant market with a view to designating a specific electronic communications undertaking or undertakings as having significant market power and imposing on that or those undertakings the appropriate obligations if the analysis of competitive conditions reveals that active competition is not present on the relevant market or part of that market.[111]

651. As competitive conditions vary significantly between areas, this can impact the designation of parties with significant market power and the possible imposition of obligations. This however does not need to be the case as the same electronic communications undertaking could have significant market power, regardless of whether the country is one market or segmented into smaller geographic markets. Competition problems can furthermore vary between differing regions which can impact the elaboration of obligations even where the conclusion would be that there were no grounds for segmenting a geographic market into more than one market.

652. According to paragraph 1 of Article 43 of the Electronic Communications Act no. 70/2022, ECOI shall define service or goods markets and geographic markets in accordance with the main principles of competition law and with obligations according to the EEA Agreement. It should be noted that pursuant to paragraph 3 of Article 64 of the EU Directive 2018/1972, (hereafter referred to as "*The Code*")[112] national regulatory authorities shall define the geographic areas where market conditions are similar or sufficiently homogeneous to be differentiated from neighbouring areas where prevailing competitive conditions significantly differ.

653. The EU Commission, and the EFTA Surveillance Authority (ESA) for EFTA states, then scrutinises the analysis in question, and assesses whether it complies with the requirements set by European competition and electronic communications legislation.

[111] See paragraph 46 in ESA Guidelines on market analysis and the assessment of significant market power from 2022.

[112] The Code has not yet gained formal validity within the EEA as the lifting of an administrative reservation on the part of Norway is awaited. The Code has however been adopted in Icelandic national law with the Electronic Communications Act no. 70/2022. See Article 108 of the Electronic Communications Act, and also the memorandum to the bill that became that Act.

654. When defining geographic markets and/or imposition of varying obligations by geographic area, ECOI is shall take the utmost account of the following Recommendations and Guidelines of the EU Commission and ESA, of the joint position of BEREC and other reports of that institution, although they are not binding.

- ESA Guidelines on market analyses and assessment of significant market power of electronic communication undertakings (SMP Guidelines), dated 16 November 2022.[113]

- ESA Recommendation on the relevant markets susceptible to ex ante regulation, dated 11 May 2016.[114]

- The BEREC Common Position on geographic aspects of market analysis (geographic definition of markets and remedies), dated 5 June 2014.[115]

- The BEREC Report on experience of the BEREC Common Position on geographic aspects of market analysis (geographic definition of markets and obligations), dated 06 December 2018.[116]

- BEREC Report on competition amongst multiple operators of next generation access networks/NGA networks in the same geographic area dated 8 June 2023.[117]

- Recommendation of the EU Commission on regulated access to Next Generation access networks, dated 20 September 2010.[118]

[113] EFTA Surveillance Authority Guidelines of 16 November 2022 on market analysis and the assessment of significant market power under the regulatory framework for electronic communications networks and services referred to in Annex XI of the Agreement on the European Economic Area.

[114] ESA Recommendations of 11 May 2016 on relevant product and service markets susceptible to ex ante regulation, 093/16/COL. This Recommendation is based on the same kind of Recommendation from the EU Commission from 9 October 2014. On 18 December 2020, the EU Commission issued a new Recommendation on this issue, but ESA has not yet reviewed its Recommendation from 2016 to harmonise with the new Recommendation from the Commission. ECOI will nevertheless have in mind the views expressed there during its geographic analysis, as that Recommendation is based on the main principles and case law in the field of European competition and electronic communications legislation.

[115] BEREC Common Position on geographic aspects of market analysis (definition and remedies), BoR (14) 73.

[116] BEREC Report on the application of the Common Position on geographic aspects of market analysis, BoR (18) 213.

[117] Report on competition amongst multiple operators of NGA networks in the same geographic region BoR (23) 87

[118] EU Commission Recommendation on regulated access to Next Generation Access Networks (NGA), from 20 September 2010. This Recommendation was valid until 23 February 2024, when the new Recommendation of the EU Commission, i.e. Recommendation on the regulatory promotion of Gigabit connectivity (Gigabit Recommendation) replaced it. By then, the ECOI had completed the analysis discussed here and the last national consultation had taken place. The new Recommendation deal primarily with the imposition of obligations, inter alia on the imposition of different set of remedies between geographical areas. There is however limited discussion of the definition of geographic markets as such.

- Recommendation of EU Commission on consistent non-discrimination and costing methodologies to promote competition and enhance the broadband investment environment, dated 20 September 2013.[119]

- The BEREC Report on co-investment and significant market power in the environment of next generation electronic communications networks, dated April 2012.[120]

655. The geographic market can be limited to region, can cover the whole country or cover two or more countries.[121]

656. It was long customary to segment geographic electronic communications markets with reference to the distribution of the relevant electronic communications networks and to the jurisdiction of the legal framework that applies to the relevant market. This methodology was appropriate when the traditional copper networks were the standard but has been less appropriate in later years after NGA networks, including fibre, were increasingly developed as an option to the previously mentioned electronic communications networks and even to replace them. The design of such networks normally varies from the traditional copper networks, which can significantly complicate the process of definition of geographic markets.

657. In accordance with the practice in force in European competition law, a geographic market covers a geographic area where stakeholder companies participate in supply and/or demand of the relevant goods or services where conditions for competition are sufficiently homogeneous to make it possible to differentiate the geographic area from neighbouring areas where conditions for competition are significantly different.[122] In accordance with the above specified Guidelines from ESA on market analysis and assessment of significant market power of electronic communications companies, one must define the market as that geographic area where the product in question is offered to customers with similar and sufficiently homogeneous competitive conditions. When markets are defined geographically it is thus not necessary for the competitive conditions of electronic communications companies to be exactly the same. It suffices that they are sufficiently alike, which means that it is only those areas where competitive conditions are truly different that cannot be considered to jointly form the same geographic market.[123] The process of definition of

[119] EU Commission Recommendation on consistent non-discrimination and costing methodologies to promote competition and enhance the broadband investment environment, dated 11 September 2013. This Recommendation was valid until 23 February 2024, when the new Recommendation of the EU Commission, i.e. Recommendation on the regulatory promotion of Gigabit connectivity (Gigabit Recommendation) replaced it. By then, the ECOI had completed the analysis discussed here and the last national consultation had taken place. The new Recommendation deal primarily with the imposition of obligations, inter alia on the imposition of different set of remedies between geographical areas. There is however limited discussion of the definition of geographic markets as such.

[120] BEREC Report on Co-investment and significant market power in NGA networks, from April 2012.

[121] Commission working document with Recommendation on relevant markets in the field of electronic communications that are susceptible to ex ante regulation from 18 December 2020, page 17.

[122] See, for example paragraph 48 in the above specified ESA Guidelines from 2022 where reference is made, among other things to the cases *United Brands v Commission,* EU:C1978:22, paragraph 44, *Michelin v Commission,* EU:C1983:313, paragraph 26, Case 247/86, *Alsatel v Novasam,* EU:C:1988:469, paragraph 15 and *Tiercé Ladbroke v Commission,* EU:T:1997:84, paragraph 102.

[123] See, for example paragraph 48 in the above specified ESA Guidelines where reference is made, among other things to the cases T-229/94, *Deutsche Bahn v Commission,* EU:T:1997:155, paragraph 92 and T-139/98 *AAMS v Commission,* EU:T:2001:272, paragraph 39.

geographic market is according to the Guidelines, the same as that which applies to the definition of product and service markets, among other things with respect to evaluation of demand-side and supply-side substitutability[124] in cases of relatively small but non-transitory price increase, i.e. about 5-10% (the hypothetical monopolist test - SSNIP test).[125] Another element that could be used in this context would be evaluation of potential competition.[126] It therefore depends on the existence of competitive pressure on parties to the market, in connection with their pricing, whether supply of a specific service in a specific area belong to the relevant market or not. It is necessary to examine the matter on the basis of the elements specified above, particularly demand-side and supply-side substitutability.

658. According to item a in paragraph 3 of Article 7 of the ECOI Regulation on market analysis in the field of electronic communications, **demand-side substitutability** indicates those substitute products or substitute services that consumers can easily switch between as a reaction to a small (5-10%) but non-transitory price increase of the reference product/service. It therefore measures the level of consumer willingness to switch from the product or service in question to another product or service. It is not necessary that all consumers switch, but rather that they do so in sufficient numbers for the small but non-transitory price increase to be unprofitable. ECOI shall use all appropriate data and indications on prior consumer behaviour, and shall also assess the likely reactions of consumers, and competitors, in the event of such a price increase. In assessing demand-side substitutability[127] it can furthermore be appropriate to consider customers' preferences and geographic purchasing patterns.

659. According to item b of paragraph 3 of Article 7 of the ECOI regulation on market analysis in the field of electronic communications, **supply-side substitutability** indicates whether competitors of the party in question would make changes to their production in the short term (within 1-2 years) or offer the product or service in question without incurring significant

[124] See paragraph 27 in ESA Guidelines which states: *"The extent to which the supply of a product or the provision of a service in a given geographic area constitutes a relevant market depends on the existence of competitive constraints on the price-setting behaviour of the service provider(s) concerned. There are two main competitive constraints to consider in assessing the behaviour of undertakings in the market: (i) demand-side and (ii) supply-side substitution. A third source of competitive constraint on an operator´s behaviour – to be considered not at the stage of market definition but when assessing whether a market is effectively competitive … - is the existence of potential competition."*

[125] See paragraph 47 in the above specified ESA Guidelines, see paragraphs 37 and 40.

[126] Pursuant to paragraph 28, the difference between supply-side substitutability and potential competition manifests itself in a quick reaction in supply-side substitutability to the price rises in question, while potential new entrants could need a longer period of time to offer a product nationwide or in a specific region. Potential competition also involves sunk costs while supply-side substitutability involves additional costs, see among other things, case IV/M.1225, *Enso/Stora,* OJ L 254, 29.9.1999, paragraph 39. There it is therefore rather discussion on potential competition in assessment of significant market power and designation of undertakings with significant market power rather than their being discussed in definition of product and service markets and/or definition of geographic markets.

[127] In subsection 24 in ESA Guidelines, it states: *"As is also stated in the Notice on Market Definition, from an economic point of view, for the definition of the relevant market, demand-side substitution constitutes the most immediate and effective disciplinary force on the suppliers of a given product, in particular to their pricing decisions."* As is further specified in Section 5, demand-side substitutability on electronic communications markets is on the other hand, of rather little consequence in geographic analysis, as it is not realistic to expect consumers to move homes between areas as a result of such price rises in electronic communications service. This means that supply-side substitutability is more important than demand-side substitutability in geographic analysis of electronic communications markets.

additional costs, in the case of a small but non-transitory price increase.[128] With respect to supply-side substitutability one can say that where it is possible to demonstrate that an electronic communications undertaking which is not operating on the relevant market would launch an entry into the relevant market at short notice if prices were to increase somewhat (5-10%), non-transitory, then the market analysis should be broadened to encompass such a company.

660. As stated here above it is possible to use an *SSNIP test* to assess demand-side or supply-side substitutability, and thus define and segment geographic markets.[129] It has however been pointed out that this methodology for geographic analysis could lead to a very large number of small geographic markets, which would not be desirable, with respect to achieving the objectives of market analysis, i.e., to impose appropriate obligations on undertakings with significant market power for the purpose of strengthening active competition, for the benefit of consumers. For example, a 5-10% increase in price for broadband access in one area would in all likelihood not lead to inhabitants moving home to another area and nor would this on its own encourage other electronic communications companies to extend their networks to the area in question. The test in question would thus be only one of many methods used when defining service or geographic markets.[130] The test in question would then only be realistic under those circumstances where there was free pricing and would be much less applicable in those instances where prices were subject to obligations.[131] One could say the same about those instances where consumer choice is rather determined to a greater or lesser extent, by factors other than price. To reach an adequate conclusion it could therefore be useful to aggregate areas where comparable competitive conditions prevail, on the basis of specific objective criteria, into one geographic area. If the electronic communications NRA should choose to use the SSNIP test, it should be, to the degree that the regulator in question could demonstrate that the price rise in question on the said product, within a given region, would not lead to consumers switching to a substitute product or to start doing business with an electronic communications company in another area.

661. As will be explained later here in more detail, geographic segmentation of markets was for a long time rather uncommon on electronic communications markets in Europe, particularly on market 3a, but rather more common on market 3b. Such segmentation has

[128] In paragraph 28 in ESA Guidelines, it states that supply-side substitutability is particularly important in the case of sectors based on network infrastructure, for example in electronic communications, as the same network is used to offer varying types of service. In subsection 28 of the same document, reference is made to COMP/39.5 25, *Telekomunikacja Polska,* paragraph 580 in this connection.

[129] In paragraph 30 in ESA Guidelines, it states: *"As a starting point, the NRA should first identify an electronic communications service or product that is offered in a given geographic area and may be subject to the imposition of regulatory obligations. Subsequently, the NRA may add additional products or areas depending on whether competition from these constrains the price of the main product or service in question. Since a relative price increase of a set of products is likely to lead some customers to switch to alternative services or products resulting in sales being lost, the key issue is to determine whether the sales lost by the operators would be sufficient to offset their price increase. Assessing demand- and supply-side substitution provides a way of measuring the "critical loss" of sales (rendering a relative price increase unprofitable) and consequently of determining the scope of the relevant market. The NRA should therefore apply this test up to the point where it can be established that a relative price increase within the geographic and product markets defined will be profitable, i.e., will no longer cause a critical loss of sales to readily available substitutes or to suppliers located in other areas."*

[130] See paragraph 29 in the ESA Guidelines.

[131] See paragraph 31 in the ESA Guidelines.

however been increasing in recent times on both markets. As such segmentation has been conducted for many years on market 3a, explanations have up till now had historical roots, as the circumstances in the states in question have been such that electronic communications networks were in the past developed on a regional basis and operated by parties that did not operate outside their own region, see for example the Hull region in England, Finland Hungary. Such historical circumstances have not existed in Iceland. Now in recent months, an increasing number of countries have separated geographic markets during market analysis in the field of electronic communications, first and foremost because of the advent of new electronic communications networks owned by competitors of a former state monopolist, particularly in the case of cable systems and fibre networks. It is therefore normal that detailed geographic analysis be conducted on the relevant markets in this analysis.

5.1.2 Electronic communications legislation and Regulation on market analysis in the field of electronic communications

662. As has been previously discussed, paragraph 1 of Article 43 of the Electronic Communications Act no. 70/2022 states that ECOI is obliged to define service or goods markets and geographic markets in accordance with the main principles of competition law and with obligations according to the EEA Agreement. In paragraph 2 of Article 43 of the Act, it is also stated that ECOI shall, where applicable, take into account the conclusions of a geographic survey made in accordance with Article 11 of the Act on ECOI no. 75/2021.

663. There is further discussion on definition of product and service markets and geographic markets in Article 5 of Regulation no. 556/2023 on market analysis in the field of electronic communications. In Article 6 it is stated, for example that the objectives and substance of market definition are to delineate and define competition boundaries between companies, and the first measures taken by ECOI in this process of assessing whether there is a need to impose obligations on an electronic communications undertaking with significant market power. For it to be possible to impose such obligations, ECOI must segment the relevant market, both with respect to types of products or services belonging to the market, and geographically.

664. Article 13 of the Regulation states that when assessing competitive conditions on a market, geographic boundaries of the relevant product and service markets shall be delineated. ECOI is thus required to identify whether there is active competition in a specific geographic area on the relevant product or service market, whether this is the whole country or a part of it.

665. It is also stated in paragraph 4 of Article 13 that the relevant geographic market comprises the area where transactions with the product or service in question take place and where competitive conditions are sufficiently homogeneous that it is possible to separate the area from areas where competitive conditions are significantly different. Areas where competitive conditions differ do not form the same geographic market.

666. In paragraph 5 of Article 13 it then states that when selecting geographic units, from which ECOI is generally required to commence its assessment, the Administration shall take the following into account:

a) The unit shall be of an appropriate size, i.e. sufficiently small to avoid significant deviations in competitive conditions within the unit in question, but sufficiently large to avoid an excessive burden from ECOI requests for gathering data, and an excessive burden on ECOI with the analysis and processing of data received.

b) The unit shall reflect the network systems of all relevant operators.

c) Boundaries of the geographic areas shall be clear and stable over time.

667. It is also stated in paragraph 6 of Article 13, that if varying competitive conditions are defined between areas that are not considered sufficient for it to be possible to justify separate geographic markets, or that have an impact on the definition of an electronic communications undertaking as having significant market power, ECOI can impose varying obligations by area. In this connection, one must take into account the stability of varying competitive conditions over time, in order to decide whether to segment geographic markets or apply varying obligations.

668. Finally, it is stated in paragraph 7 of Article 13 of the Regulation that geographic delineation of an electronic communications market is normally decided on the basis of two main criteria, i.e. distribution of electronic communications networks and the scope of legislation and regulation.

5.1.3 ESA Guidelines on market analysis and assessment of significant market power

669. According to paragraph 2 of Article 43 of the Electronic Communications Act, ECOI is required when defining markets to take the utmost account of Recommendation from the EFTA Surveillance Authority (ESA) on the relevant market, and also ESA Guidelines on market analysis and assessment of significant market power, having taken into account national circumstances, particularly with respect to a geographic market where one among other things takes into account the *nature of competition in infrastructure* in a specific area in accordance with the provisions of competition law.

670. In the bill that became the Electronic Communications Act no. 70/2022, it is further prescribed that ESA issues Recommendations were service markets that specifies service markets that should be examined, and such Recommendation is a point of departure, but ECOI also needs to take a position on whether the relevant service market should be further delineated on the basis of national circumstances. It is also stated that it was expected the ESA would issue Guidelines on market analysis and assessment of significant market power, as the EU Commission had recently issued new Guidelines on this matter in 2018. One could also find discussion on definition of markets that should be taken into account in those Guidelines.

671. On 16 November 2022, ESA updated its Guidelines on market analysis and assessment of significant market power on the electronic communications market in accordance with Commission Guidelines from 2018. The Guidelines were issued to support coordinated surveillance and homogeneous application of rules in this sector within the EEA. When making

the Guidelines, the Commission notes on its Guidelines from 2018 were taken into account mutatis mutandis.[132]

672. There is discussion on geographic analysis in Section 2.3 in the Guidelines. There it is stated that geographic analysis is conducted subsequent to definition of a product or service market. On the basis of well-established case law, a geographic market constitutes an area where the relevant companies take part in supply and demand of the relevant product or service, where competitive conditions were sufficiently homogeneous for the degree possible to differentiate the area from other geographic areas where competitive conditions differed significantly.[133]

673. With respect to geographic units, it was also stated that those three elements described in paragraph 5 of Article 13 of the regulation on market analysis in the field of electronic communications mentioned here above, be taken into account.

674. If the geographic difference in competitive conditions were defined and there was considered no need to segment the geographic market, NRA could nevertheless apply varyingly burdensome obligations by region. The stability of these differing competitive conditions was the key as to whether it was decided to segment geographically or apply varying obligations.[134]

675. Finally, it is stated that one must have two main criteria when geographically defining electronic communications markets, i.e. on the one hand the area covered by networks and on the other hand the existence of legal and regulatory instruments.[135] With respect to the latter issue for the purpose of illustration, an instance is cited where a mobile phone company could only provide service in the area in which it had an operational licence, as in the EU Commission case no. IV/M.1430, *Vodafone/Airtouch.*[136]

5.1.4 ESA and EU Commission Recommendation on relevant markets

5.1.4.1 ESA Recommendation on relevant markets

676. The ESA Recommendation on relevant product and service markets on the electronic communications market is from 11 May 2016 and takes into account the Recommendation then in force from the Commission from 2014 on the same subject, but endeavours to ensure uniform application of the common European regulatory framework.[137]

677. It states that the starting point for NRAs for the identification of wholesale markets susceptible to *ex ante* regulation was the analysis of corresponding retail market or retail markets. Analysis of retail markets should be conducted by taking into account demand-side

[132] See page 3 in ESA Guidelines from 16 November 2022.
[133] ESA Guidelines, paragraphs 46–48.
[134] ESA Guidelines, paragraph 50.
[135] ESA Guidelines, paragraph 51.
[136] Footnote 48 on page 15 in ESA Guidelines on market analysis and assessment of significant market power from 16 November 2022.
[137] ESA Recommendation on relevant markets from 11 May 2016, paragraph 4.

and supply-side substitutability from a forward-looking perspective over a given time horizon.[138]

678. Subsequent to the above, NRAs should conduct geographic analysis which specifies the geographic areas considered to belong to each such market, with reference to conditions of competition being similar or sufficiently homogeneous that they may be distinguished from other areas where significantly different competitive conditions prevail. Particular attention has to be directed at whether the behaviour of an undertaking with significant market power is uniform in all geographic areas, or whether the company is faced with significantly differing competitive conditions in varying areas which constrain the company's behaviour.[139]

5.1.4.2 EU Commission Recommendation and working document on relevant markets from December 2020

679. The EU Commission issued a revised Recommendation on relevant product and service markets in the field of electronic communications on 18 December 2020.[140] The Recommendation was revised, having taken into account the coming into force of the Code and of the market developments that had taken place since 2014. Although the Code has not been adopted in the EEA Agreement, as the lifting of an administrative reservation by Norway is being awaited, it is clear that pursuant to Article 108 of the Electronic Communications Act no. 70/2022, that the Act constituted adoption of the Code in this country. Although ESA has not yet reviewed its Recommendation on the relevant markets from 2016, in accordance with the above specified EU Commission Recommendation from 2020, the new Recommendation and the accompanying Commission working document provide an insight in how to interpret new legislation on market analysis, and in addition to this the Recommendation takes into account developments in electronic communications markets, in competition law and also case law from the EU Court, since 2014. In this manner, one can also endeavour to support uniform application of the common European regulatory framework.

680. The Commission Recommendation in question prescribes in more detail on geographic analysis, where it states among other things that it is unlikely that competition problems are the same in all locations in the territory of the relevant state, both with respect to markets 3a and 3b. For the above reasons it is urgent that the relevant markets be subjected to thorough geographic analysis. NRAs should therefore segment geographic areas where conditions for competition are sufficiently homogeneous from geographic areas where conditions for competition are significantly different. Particular attention should then be paid to whether the potential significant market power operator behaves in a similar manner between areas

[138] ESA Recommendation, paragraph 12.

[139] ESA Recommendation, paragraph 12.

[140] See Commission Recommendation of 18.12.2020 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code, C(2020) 8750 final.

where he operates electronic communications networks, or whether he is faced with varying competitive pressure between areas.[141]

681. It is also stated that to date (2020), NRAs within the EU had mostly come to the conclusion that the geographic market was the whole country, as the copper network of prior incumbents had national coverage. On the other hand, as the deployment of their competitors' networks increased steadily, competitive conditions could vary significantly and sustainably between areas in the state in question (e.g. between urban and rural areas), which then called for a separate geographic markets.[142]

682. When conducting geographic analysis, NRAs should begin by choosing basic criteria for geographic units as a starting point for assessing competitive conditions. Such criteria can follow network topology or the boundaries of administrative units, as appropriate in each individual country. Without exception, a geographic unit should fulfil the three conditions specified in the Commission's significant market power Guidelines from 2018, i.e. 1) to be of an appropriate size, 2) to reflect the network topology of networks of all electronic communications companies and 3) have clear and stable boundaries over time.[143]

683. With respect to condition 2) it was stated in the working document accompanying the Recommendation that NRAs could rely on the geographic survey of network deployment, see Article 22 of the Code, if that survey was adequately implemented. NRAs could also define geographic units in accordance with deployment of electronic communications networks (e.g., an area which served specific telephone exchanges or connection points). This methodology can, however, prove complex in its implementation, particularly with the advent of multiple parallel networks which did not necessarily follow the same technical topology.[144] NRAs could therefore also rely on administrative units such as municipalities, postcodes or telephone area codes. NRAs had to make a decision on the choice of the most appropriate geographic unit on the basis of circumstances in each individual state.

684. In accordance with the fundamental principles of competition law, NRAs should therefore decide the first definition of the scope of geographic markets by categorising together those areas where similar competitive conditions prevailed. They should assess competitive conditions from a forward-looking perspective, by taking into account indications that related to the market structure and behaviour of parties to the market, and should particularly have in mind the importance of competition in infrastructure in accordance with

[141] EU Commission Recommendation on relevant markets from 1 December 2020, paragraph 35. There it states specifically: *"In both the above wholesale access markets, competitive problems are unlikely to persist uniformly across a given Member State and such markets should be subject to a thorough geographic analysis. Therefore, when defining relevant markets in accordance with Article 64(3) of the Code, national regulatory authorities should identify geographic areas where the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different, having particular regard to the question whether the potential operator having significant market power acts uniformly across its network area or whether it faces appreciably different conditions of competition to a degree that its activities are constrained in some areas but not in others."*

[142] EU Commission Recommendation, paragraph 36.

[143] Same source, paragraph 37.

[144] See page 19 in the Commission working document and the BEREC report on geographic analysis from 2018, paragraph 49.

paragraph 3 of Article 64 of the Code.[145] Such an indications could, among other things be in the form of deployment of electronic communications networks of the various parties, the number of networks in competition, their market share, development of market share, local or coordinated pricing, characteristics of demand and consumer behaviour. The conclusion should be compared with the conclusion on demand-side and supply-side substitutability. At this stage it would be possible to identify areas as belonging to the same group that were not adjacent, if similar competitive conditions prevailed within these areas.[146]

685. Finally, significant deviations in competitive conditions shall be taken into account from a forward-looking perspective, in geographic analysis of the relevant market. It was possible to use varying obligations in the case of minor deviations in competitive conditions or when varying competitive conditions were considered sufficiently stable to justify segmented geographic markets. In the case of varying obligations, it was then possible to prescribe regular review of obligations, without undermining the foreseeability of the obligations.

686. In the Commission working document to the 2020 Recommendation there is more detailed discussion than in the Recommendation itself on the implementation of geographic analysis. One can find there among other things the factors that NRAs have been taking into consideration in their geographic analyses, and the importance was reiterated of their basing their geographic analyses on standardised criteria. This discussion aims to ensure coordinated implementation in all member states, and to thus support foreseeability of the regulatory framework.[147]

687. There it is stated among other things, that when competition is considered to be active, the Code allows for withdrawal of obligations. On the other hand, where competition is not active, NRAs should impose appropriate obligations on undertakings with significant market power as a response to identified competition problems, while at the same time supporting the deployment of new electronic communications networks. Deployment of parallel electronic communications networks will strengthen competition on electronic communications markets and lead to the withdrawal of obligations or to their becoming less stringent, including access obligations, in areas where infrastructure competition has emerged, but where it would not be justifiable to fully deregulate.[148]

688. It is also stated that it was the purpose of the working document to discuss issues in greater detail than was done in the Recommendation itself, about the development that could lead to NRAs coming to the conclusion that there was no need for obligations on the relevant wholesale markets, particularly in specific areas where active competition prevailed.[149]

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[145] In paragraph 2 of Article 43 of the electronic communications act number 70/2022 the following is stated: *"When defining markets, ECOI shall to the extent possible, take into consideration Recommendations of the EFTA Surveillance Authority on market analysis and assessment of significant market power, having taken into account national circumstances, particularly related to geographic markets and,* ***where the nature of competition in infrastructure in a specific area*** *is taken into account in accordance with the provisions of competition law." .. (ECOI emphasis edit)*

[146] Same source, paragraph 38.

[147] Discussion on geographic definition of markets can be mostly found on pages 16-22 in the working document.

[148] See page 6 in the working document.

[149] See page 8 in the working document.

689. It is stated in the working document that one can understand from the regulatory framework and from established case law that a geographic market applies to an area where the companies in question participate in supply and demand of the relevant products or service and where competitive conditions are sufficiently homogeneous to make it possible to distinguish the area from other adjacent competitive areas, where competitive conditions significantly differ. Areas where competitive conditions differ appreciably, cannot be considered to belong to the same geographic market. There is a significant difference in competitive conditions between varying areas in the same country, for example a difference between urban and rural areas could lead to it being impossible to not define separate geographic markets. This separation could eventually lead to varying designations of undertakings with significant market power and to varying imposition of obligations.

690. In Section 4.1.3 in the working document there is specific discussion on geographic analysis of market 1 (market 3a in the ESA Recommendation from 2016 currently in force). It is stated there that regardless of whether the relevant market would generally fulfil the three-criteria test, specific market conditions could justify the withdrawal of obligations on the relevant market, either over the country as a whole or what was more likely, in a specific geographic market, or markets, within the state in question. In some states, infrastructure was more advanced than others, though this did not necessarily apply to the state in question as a whole. In many states, cable systems and/or fibre networks were deployed in specific areas by competitors of the former incumbent. The Code also contain provisions intended to encourage competition, for example provisions on investments and wholesale-only companies. This means that competitive conditions within the relevant state could vary appreciably by area. This called for the necessity to identify the various factors that formed competitive conditions in varying areas in the relevant state, particularly in states where there was significant infrastructure competition, and especially where there was a high deployment proportion of networks of competitors of the former incumbent. For this reason, NRAs needed to assess whether it was appropriate to separate geographic markets that had special competitive conditions and assess whether there was still need for obligations or whether it would be possible to withdraw them in specific areas.[150]

691. It is stated that geographic analysis is, as is the case with the product/service market, based on fundamental principles of competition law. Analysis constitutes assessment of supply-side and demand-side substitutability, and there can be furthermore a possible need to take into account potential competition if that were applicable at this stage of market analysis.

692. On the basis of such analysis, NRAs could come to the conclusion that the market was international, national, regional or local. Up till now, most NRAs have come to the conclusion that electronic communications markets where national, as the copper network had usually covered a large part territory of the states. The development had however tended more towards analysing smaller geographic units in recent years and this development would increase in the future, as competition based on infrastructure developed at varying speeds within the member states, which led to varying competitive conditions within the states. In support of this contention, reference is made to market 3a, having previously been characterised by the copper networks with national coverage, owned by the former state

[150] See page 52 in the working document.

operated incumbents. The market today was however characterised by increased competition of parallel networks in specific areas (such as fibre and cable systems), and in many states there were pending plans for phasing out copper systems. The above specified conditions were likely to encourage the tendency for competitive conditions therefore being much more varied between geographic areas within individual states.[151]

693. There is also further discussion on the choice of criteria for geographic basic units, but as is stated in the Recommendation, this should be the starting point for geographic analysis, i.e. the definition of a geographic unit on which to perform preliminary assessment of competitive conditions. The next step will be to categorise together those geographic units where competitive conditions were sufficiently homogeneous. Subsequent to geographic analysis, NRAs are obliged to conduct assessment of significant market power on each geographic market and to impose obligations on undertakings with significant market power on those geographic markets where active competition do not prevail.

694. It is also stated that NRAs should begin by assessing whether competitive conditions varied between areas at retail level, given that wholesale obligations were not in place (the modified greenfield approach). There could be particularly deviation from the number of infrastructure companies providing wholesale access, from quality, price or market share in wholesale (including self-supply). If varying competitive conditions were identified at retail level, a detailed geographic analysis should be made at wholesale level.

695. NRAs should make a draft definition of the scope of geographic markets, taking into account those geographic basic units that had previously been examined, and should categorise these units together were similar competitive conditions prevailed. Such a draft definition should be made on the basis of factors such as: (a) Number of competing networks, (b) division of market share at retail and wholesale levels, (c) draft analysis of pricing and price difference by area and (d) behaviour pattern of consumers and parties to the market. Subsequent to draft analysis, and NRAs should then adapt their geographic analysis to demand-side and supply-side substitutability, where the above indications should be viewed as a proxy for geographic delineation of markets, but not as the one definitive element.[152]

696. With respect to condition (a), which deals with the number of competing networks, it should be an important part of geographic analysis as in the Code[153] it was among other things stated that NRAs should, among other things define geographic markets having taken into account the level of infrastructure competition within their geographic area. The geographic survey of network deployment that NRAs were obliged to conduct on the basis of Article 22 of the Code, see also Article 11 of the Act on ECOI number 75/2021, could prove a useful tool

[151] On page 18 it states: *"Sweden is a relevant example of this evolution towards increasing geographic heterogeneity of competitive conditions within a Member State. In its last market analysis, the Swedish NRA (PTS) defined a separate market for fibre. The fibre market was characterised by the presence of numerous non-overlapping fibre networks that typically reach very high market shares in their coverage area. Moreover, those networks were found to be unlikely to expand into the coverage area of a different fibre network. The Commission, supported by BEREC, contested PTS´s definition of a national market under these circumstances because of the lack of demand supply side substitution of wholesale access between non-overlapping networks. The Commission argued that PTS should have considered local geographic markets to reflect better the competitive situation in the country."*

[152] See pages 19 and 20 in the Commission working document.

[153] Code, Article 64, paragraph 3.

in this context. Those networks should be included that enabled its operator to reach end users in an independent manner, i.e., that they should not rely on the network of another operator, even in part, unless the operator benefited from symmetric access where they reached a significant proportion of end users in the geographic unit in question. If the number of suppliers was the same between geographic areas, but where these were not the same suppliers between geographic areas, particularly with respect to the main supplier, NRAs should consider these areas to be separate geographic markets. The existence of companies that were wholesale-only operators and/or co-investment agreements, could have a significant impact on competitive behaviour. This could be taken into consideration when the market was defined, as appropriate in each instance, i.e. not initially when assessing market power.[154]

697. When analysing condition (b) which deals with division of market share, both at wholesale and retail levels, it can be useful to assess the level of competition that the relevant competitor faces, on the basis of market share statistics. It is furthermore stated that market share at retail level often provides a good insight into network deployment with respect to analysis of wide-reaching market power at retail level. It, however, states in the working document that on the basis of the "*Modified Greenfield Approach*"[155] market share on the retail market could only in part be appropriate indication if it reflected the impact of older or existing obligations on a related wholesale market. For this reason, NRAs should also take into account market share at wholesale level.[156]

698. With respect to condition (c), which concerned pricing and the price difference by area, a survey of pricing could be important when assessing whether competitive conditions differ between geographic areas. Higher prices in a specific area could for example reflect higher costs resulting from special circumstances in the area and could possibly indicate that access barriers were greater in that area than elsewhere. NRA need nevertheless to be careful not to use only prices as grounds for assessing varying competitive conditions, as the fact alone that prices were harmonised between geographic areas did not necessarily lead to the conclusion that this was a case of a single harmonised market.[157]

699. Condition (d), which deals with behaviour pattern, could apply to both supply-side, for example local marketing, and demand-side, for example the proportion of customers that switch service provider i.e. the *churn rate*,[158] and/or the difference in demand by geographic area with reference to speed of net service and bundles.[159]

700. In geographic analysis one could examine demand-side substitutability in the context of whether customers could switch service provider outside the perceived geographic market, were the price for service to increase. This would however be unlikely to have a significant

[154] See page 20 in the Commission working document and Commission discussion on *wholesale-only operator* in case IT/2019/2181.
[155] See Explanatory Note to Commission Recommendation 2014/710/EU, SWD (2014) 298, p. 8.
[156] In this connection one can take into account IT/2019/2181-2, where AGCOM used market share both at wholesale and retail level in market analysis of markets 3a og 3b.
[157] In this connection, reference is made to a case from Sweden from 2019, see SE/2019/2245 and paragraph 113 in the BEREC joint position from 2014.
[158] Proportion of customers prepared to switch service provider.
[159] In this connection, reference is made to UK case from 2017, see UK/2017/0733.

impact on this market analysis, as customers could only purchase service through those networks that were connected to their residences or places of work.[160]

701. Analysis of supply-side substitutability would however be considered likely to be an important factor in the approach taken by NRAs, as it encouraged taking into account future development on the market. Supply-side substitutability referred to the ability of competitors to enter the relevant market as a response to price increase. For this reason, NRAs should consider potential deployment of electronic communications networks and should take into account various data and indications in this connection. It would, among other things, be possible to take into account whether competitors had electronic communications networks in a neighbouring area or to whether a competitor was already operating in the relevant area but had not yet deployed local loops in the last leg to end users. One could also take into account whether this could be an interesting business opportunity, for example because of high population density, or that the potential significant market power party had a low retail market share in the relevant area. To the above elements one could add information on deployment plans of parties to the market, particularly if such deployment had already commenced.

702. NRA that had applied geographic measures, had normally identified two geographic markets, i.e. on the other hand a competition market (active competition) or on the other hand a market lacking competition (little or no competition). There could on the other hand be prevailing circumstances that meant that a specific area belonged to neither category. Such *ambivalence* should be reflected in the geographic analysis. Competitive conditions in an area where only one network was on offer could for example be appreciably different from competitive conditions in an area where two or more networks were on offer. It was therefore in the hands of the relevant NRA to decide whether active competition was considered to prevail in a specific geographic market, given circumstances in the relevant area or areas. There was no specific standardised number of networks that needed to be available for a market to be automatically considered a competitive market, and although the number of networks could be an important criterion when assessing competition, one also had to take other elements into account. It would not be right to only take account of the number of networks.

703. Geographic analysis and imposition of obligations were not mutually exclusive. As a rule, geographic analysis should be conducted on varying competitive conditions that differed appreciably and were stable over time, in the first steps of market analysis, that is to say with definition of geographic market, rather than when obligations are imposed. The current methodology furthermore aims to encourage NRAs to apply a forward-looking approach that resulted in reliable definition of geographic markets. Geographic separation of obligations should be limited to areas where competitive conditions did not differ to the same degree as in the case of separate geographic markets, or where instability prevailed. In the instance of varying obligations, it should be possible to review obligations without embarking on another complete market analysis, among other things by prescribing regular review of obligations or areas where less stringent obligations were in force (for example an annual review). Such revision of obligations could be possibly foreseeable when conducting market analysis such

[160] See page 21 in the EU Commission working document.

that it would be possible to prescribe criteria for such a review in the market analysis in question.

704. Regardless of other considerations, analysis should be conducted first on smaller geographic units, in order that NRAs could assess whether geographic separation of markets was necessary and whether this should be implemented at the level of market definition, or imposition of obligations, or both, as neither method excludes the other. An NRA can thus both separate geographic markets and apply varying obligations as was for example done in Italy in 2019.

705. In short, the starting point is that market development indicated increased separation of competitive conditions in most member states, and one could expect that in some instances, this could last for an extended period of time. For this reason, the importance of well-founded geographic analysis based on the above views was particularly underlined in the EU Commission working document.

5.1.5 BEREC Common Position and Report on geographic analysis

5.1.5.1 General

706. According to paragraph 3 of Article 28 of the Electronic Communications Act no. 75/2021 the ECOI shall organise its surveillance with predictability in mind, by ensuring harmonised surveillance methodologies and by reviewing on a regular basis, having taken into account recognised criteria and best practice. It is stated in the notes to the provision that the Authority is required for example to take into account the work of the Body of European Regulators for Electronic Communications (e. *Body of European Regulators for Electronic Communications,* hereafter: „*BEREC*“) which is an advisory and policy-making forum and which is intended to support harmonised adoption and implementation of the common European regulatory framework for the electronic communications market, such as by publishing guidelines and advice.

707. BEREC has discussed geographic analysis, and it published its Common Position on geographic analysis in 2014, both for market analysis and for the imposition of obligations.[161] In the document in question, BEREC investigated the circumstances where a geographic separation approach in market analysis could be considered appropriate and how it would be feasible to conduct such geographic analysis.

708. In the BEREC Report from 2018, there was discussion on the experience of the above specified BEREC Common Position and of real implementation of geographic analysis, but the report furthermore provides an overview of NRA experience of geographic analyses both in market analysis and in the imposition of obligations, and also, an overview of markets where geographic analysis had been conducted.

709. BEREC recently published a Report, on 8 June 2023, that is based on the above specified BEREC documents and that discusses competition between many operators on next generation access networks/NGA networks, in the same geographic area and the results of

[161] The predecessor of BEREC, ERG had previously issued a Common Position on the same issue in 2008.

such competition, i.e. how it can possibly provide returns in retail prices and product offer. It states in the report that regional operation by operators of next generation high-capacity networks/VHCN, play steadily increasing role on the broadband market in many countries, and operators of electronic communications networks may use other commercial methods than the used before, for example by varying the price of their service by region.

5.1.5.2 BEREC Common Position on geographic aspects of market analysis from 2014

710. In 2008 the European Regulators Group for Electronic Communications, ERG,[162] issued a Report which constituted a Common Position on various issues related to geographic definition of markets.[163] There it was stated among other things that the increased deployment of new electronic communications networks and increased market share of their operators could in some locations have led to conditions for competition being different between particular regions within the same state. If there could be any doubt that the country was one geographic market, then it would be advisable to begin by making a simple preliminary examination of competitive conditions. One would then examine demand-side and supply-side substitutability between areas and the homogeneity of competitive conditions with respect to coverage of new electronic communications networks, pricing and characteristics of service. If the conclusions of the preliminary examination indicated that they were not different market areas, then there was no reason to perform a detailed analysis. The instructions in the report were considered necessary as a detailed geographic analysis of markets was generally very demanding in terms of time and staff resources for NRAs and thus not justifiable unless made necessary by specific circumstances, i.e., that there were reliable indications that it might be necessary to segment the geographic market into more than one market or impose varying obligations by area.

711. The ERG Common Position allowed for two main methods for assessing whether it was appropriate to segment geographic markets or to apply varying obligations, i.e., on the one hand by administrative boundaries and on the other hand, according to the network topology of the significant market power operator, having taken into account competitors' electronic communications networks.

712. In the Report in question, it was furthermore prescribed that in order for it to be possible to segment differing geographic markets, certain conditions had to be fulfilled, i.e.:

- The segmented geographic areas needed to be smaller than the country as a whole and to be mutually exclusive.
- The service offers of each electronic communications company on the market in question had to be mapped.
- The boundaries of the areas should be clear and stable, such that all parties to the market could understand them.

[162] ERG became BEREC in 2010.

[163] ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) - October 2008 ERG (08) 20 final CP Geog Aspects 081016.

- The geographic areas were to be sufficiently small to ensure that competitive conditions would be unlikely to change significantly within these areas and they should be sufficiently large to prevent an excessive burden on electronic communications companies from replying to queries and reacting to requests for data from NRAs and on NRAs from analysing the data received.

713. It was stated that the aspects which would mainly indicate the need for more detailed analysis were the following:

- Varying degree of access barriers between areas.
- Variation in number of electronic communication companies operating between areas.
- Market share of electronic communications companies was not comparable between areas.
- Possible price difference between areas, e.g., that there was a difference in price for the service of the significant market power operator or a difference between his prices and those of competitors between varying areas.
- Difference in service offer by area.

714. In the summer of 2014 BEREC completed the review of the Guidelines that were presented in the above specified ERG Common Position.[164] There it was stated that the BEREC considered that the Guidelines from 2008 still adequately applied, as far as they reached, particularly with respect to the more traditional electronic communications systems. There was however considered reason to update the Guidelines with respect to market and technical developments from 2008, among other things because of increased coverage of NGA networks. Although the Guidelines applied to geographic demarcation of all those markets that the NRAs analyse, there was special emphasis placed on the markets 3a and 3b. It was stated that it was those markets that first and foremost had been considered justifiable to divide into more than one geographic market, particularly market 3b. Such geographic segmentation had however been rather uncommon in Europe until the writing of the document in 2014. Such plans by NRAs had however often been dismissed by the EU Commission.

715. It was furthermore stated that the first question that had to be answered was whether and then under what circumstances there could be a need to segment a market geographically. This question could be particularly complex in states where new network operators had entered the market in competition with the electronic communications networks of the former incumbent. Historically, geographic markets had in almost all cases been according to distribution of the networks of the former incumbents. With respect to markets for fixed line networks, the main rule was that there had only been one incumbent in each state that operated a network with national coverage. For this reason, it had been the

[164] BEREC Common Position on Geographical Aspects of Market Analysis (definition and remedies), BoR (14) 73, dated 5 June 2014.

conclusion of the vast majority of market analyses by NRAs in the EEA in recent years that the country is considered to be one geographic market[165].

716. Then it was stated that the importance of geographic segmentation had undeniably increased in recent years as competitors of the former incumbent had increased the coverage of their electronic communications networks and their market share. In some instances, the competitive conditions had become so dissimilar between areas that it would not be justifiable to have an unsegmented geographic market. For this reason, it could be necessary to segment the geographic market into more than one area.

717. In such instances the geographic definition required detailed data and information which was both costly and time-consuming for NRAs to collect and for electronic communications companies to supply. Such detailed gathering of information could under certain circumstances be considered be in excess of proportionality. One of the main objectives of the BEREC document in question would be to advise the NRAs on the issues or on indications that could justify such detailed geographic analysis.

718. With respect to discussion in the document on development of competition, it was stated that the coverage of electronic communications networks of competitors to the former incumbent had increased during the period in question (2008-2014). This increased coverage could be explained, among other things by:

- Competitors that provide electronic communications services by leasing of copper local loops.
- More varied technology possibilities where competitors who used more varied technology than before provide increased competition (e.g., cable systems, Wi-Fi and LTE/4G).
- Distribution of next generation networks (for example fibre networks). The distribution of such networks had been on the increase, variously by private enterprise operators, by the public sector or cooperation between the two. This could radically change the landscape with respect to fixed line network infrastructure. Competitors that have built up local fibre networks could, where the former incumbent was not a leader in fibre roll-out, exert competitive pressure on the former incumbent.[166]

719. It was also stated that investment in deploying electronic communications networks (other than copper systems) and an increased number of local networks could lead to a kind of patchwork, where next generation access systems were almost randomly available here and there in the state in question and only traditional copper networks in other areas. A

[165] Exceptions to this arrangement would be the Hull area in England, Finland Hungary, which have historical explanations as previously stated.

[166] It was also stated that at many locations in the countryside, fibre networks have been installed with public funding. Such local networks, which could often be arbitrarily found here and there in individual states, could have an impact on market analysis. One could consider it likely that most of them had been deployed in accordance with conditions for state aid and should therefore be open to all electronic communications companies, which ensures competition at wholesale and retail level in the areas in question.

number of areas were exceptional with respect to the number of networks, number of electronic communications companies and competitors in other respects.

720. The document then examines which factors needed to be examined before embarking on an assessment of whether there is a need for a more detailed analysis of competitive conditions in differing geographic areas. In Item b of Section IV of the report, there is discussion on the main factors to be examined in this connection:

- *Distribution of competitor electronic communications networks:* The normal starting point for the analysis is to examine coverage of the electronic communications networks of competitors of the former incumbent. The NRA in question needs to have a clear overview of the networks in the relevant area, of electronic communications companies operating in the area and of the characteristics of services in the area.
- *Competitive pressure* of alternative electronic communications networks on the retail market
- *Service offer:* One must examine whether the service offer varies between areas, for example with respect to specific service categories or product bundles.
- *The number of electronic communications companies* in each area and their market share.
- *Pricing:* One must examine prices and possible price difference between areas. If the prices of the former incumbent and his competitors are the same for the whole country, then this is an indication that the geographic market is the whole country.

721. In the document, it is furthermore stated that one is not required to segment geographic markets unless the competitive conditions vary so greatly between areas that this could possibly impact either the designation of an undertaking with significant market power, or the competition problems that had been identified. "Real" competitive conditions shall be assessed that are reflected in the market behaviour of electronic communications companies, for example in their pricing, and the impact of this behaviour on the structure of the market, for example market share. In order to be able to analyse a distinct geographic market there must therefore be convincing indications, relating both to the structure of the relevant market and to the behaviour of parties to the market, that competitive conditions vary considerably from those in other areas within the state in question.

722. It is furthermore stated that as the main purpose of the imposition of obligations is to ensure active competition for the benefit of consumers, the starting point for geographic analysis should generally be the survey of competitive conditions or related retail markets if obligations were not in place on the wholesale market being examined (the modified greenfield approach).

723. Subsequent to this the BEREC Common Position in question discusses the factors that should be examined, should the interim conclusion of the relevant NRA reveal the need for a more detailed geographic analysis of the market in question. Then one must among other things make a detailed analysis of competitive conditions in related retail markets, of the network structure of the various parties to the market and assess homogeneity of competitive

conditions in addition to identifying sensible basic criteria for the selection of geographic areas for further the analysis. With respect to assessment of homogeneity of competitive conditions one must examine factors such as access barriers, number of electronic communications operators, their market share, possible price and/or quality difference, possible difference in marketing and one must examine possible difference in the nature of demand by area.

724. The BEREC Common Position furthermore allows for the possibility of imposing varying obligations on parties to the market, depending on area in order to tackle varying competitive conditions between areas should there not be grounds for dividing a specific service market into more than one geographic market. This means that there are less stringent requirements for authorisation to prescribe varying obligations on a significant market power operator than for geographic segmentation of markets into more than one area.

5.1.5.3 BEREC Report on competition between multiple operators of next generation access networks in the same geographic area, from June 2023

Parallel networks

725. In the BEREC Report on competition between multiple operators of next generation access networks in the same geographic area, dated 8 June 2023,[167] there is discussion on the existence of parallel networks and on the impact that such competition has, and the following issues are particularly highlighted from information collected from participating countries, which totalled 31:

- To what extent parallel networks are present in the same geographic area.
- To what extent does retail price vary by geographic area where parallel networks are present.
- To what extent does product offer in retail vary by geographic area where parallel networks are present.
- The main reasons for these variations.
- Analysis of the impact the above has on market 1 pursuant to the EU Commission Recommendation from 2020 (market 3a pursuant to ESA Recommendation from 2016), both with respect to segmented geographic markets and varying obligations.

726. It is stated that local operators of next generation electronic communications networks play an increasingly important role in the broadband market in many states and that they can use varying commercial methodologies, for example by having varied price by region or not.

727. It is noted that there is a significant difference in the number of next generation access networks in varying geographic areas within those countries that participated in making the

[167] See https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-competition-amongst-multiple-operators-of-nga-networks-in-the-same-geographical-region.

report. Deployment of two parallel networks is about 11-50%[168] in 10 participant countries. In five countries, the deployment of two parallel networks is 50%. The proportion of three parallel networks is about 0-25% in most countries, i.e. in 18 countries, but only 3 countries achieve 50% deployment of three parallel networks. The proportion of more than three parallel networks is 0-10% in most countries, i.e. in 16 countries, and only in five countries is the deployment more than 10%. The proportion of areas where only one network is present varies between countries, but most countries fall within the 2-50% boundaries.

728. The BEREC research showed that there was correlation to some extent between the proportion of parallel next generation access networks, and whether the geographic market was segmented and/or varying obligations imposed, though other factors were also significant with respect to the decision on geographic definition. No significant difference was found between the existence of two parallel next generation access networks in the participating countries, but generally, areas with three or more next generation access networks were more frequent in countries with markets that were segmented geographically and/or where varying obligations were imposed by geographic area. Areas without next generation access networks were also fewer in those countries.

729. Difference in retail price and/or characteristics of service that was provided between areas was researched in 18 countries, but only three established such difference. There was no clear common denominator with respect to why this difference occurred, but circumstances varied between countries (e.g., competition between network operators, technical factors and varying wholesale prices).

730. The report emphasises the importance of having in mind that geographically harmonised prices by operators does not necessarily justify not conducting geographic segmentation and references made to the BEREC Common Position from 2014 in this connection. There it was stated that pricing is an important criterion when conducting geographic analysis, and pricing of operators should be researched and interpreted with care. If cost analysis shows that prices of a company with a dominant market position and of other competitors is the same across the whole country, then this could indicate that adequate conditions for geographic segmentation are not present. It does however say in the report that applying the same prices between geographic areas does not always tell the full story and NRAs should therefore always take other underlying factors into account. It is, for example pointed out that if a price of an operator that has significant market power is the same across the whole country, while the price of another operator varies between geographic areas, particularly between areas with competition and areas where there is less competition, then indications of a single common national geographic market are not as meaningful. Under such circumstances, it can prove important to assess the size of geographic areas with competition and those with less competition, and also the balance between gains and costs for active operators where they to deviate from geographically harmonised

[168] The report uses the "*Homes passed*" coefficient, which refers to the total number of homes, such as detached homes, apartment buildings and commercial premises that can be connected to the networks in a specific service territory.

prices.[169] From the above discussion, it is clear that there is generally a need for more precise analysis of available information when conducting geographic analysis.

Geographic analysis on market 1 (market 3a pursuant to ESA Recommendation from 2016)

731. This section will consider how the countries that participated in making the report, organised geographic analysis of market 3a, pursuant to the ESA Recommendation on the relevant market from 2016.[170] The report comments on the importance of identifying whether potential significant market power operators enjoy significant market power across the whole country or only in limited areas, and whether access barriers result in limitations to operations of their competitors in specific areas. Among the things examined was the nature of the impact that geographic analysis had on competitive conditions on market 3a in each individual country. It was also stated that in 3 countries, market analysis had resulted in complete deregulation on market 3a[171], while in another country this had been done without market analysis[172] and in one country no obligations had ever been imposed.[173]

732. Conclusions of geographic analyses in the other countries can be found in the following table 5.1. From this one can see that 6 countries had defined sub-national markets in geographic analysis and one of them, i.e. Italy, also imposed obligations by geographic area in such sub-national markets, 4 countries including Iceland, applied geographically segmented obligations while 16 countries applied no geographic measures. One can also see in the table that the proportion of countries that applied geographic measures increased by about 43% from 2018, i.e. from 7 to 10. Almost all countries that had completed market analysis and that had not withdrawn obligations on the market, had conducted geographic analysis.

Table 5.1: Geographic analysis in market analysis and/or imposition of obligations

Geographic analysis	Countries	Number
Definition of sub-national geographic markets	Denmark, Estonia, Spain, Italy, Finland Hungary	6
Geographic differentiation of obligations in a sub-national geographic market	Italy	1
Geographic differentiation of obligations in a national market	Belgium, Cyprus, Iceland Slovenia	4

[169] See pages 72 and 73 in the BEREC Common Position from 2014 https://www.berec.europa.eu/sites/default/files/files/document_register_store/2014/6/BoR_%2814%29_73_BEREC_CP_geographical_aspects_of_market_analysis_f.pdf.
[170] Market 1/2020 pursuant to the EU Commission Recommendation from 2020.
[171] Austria, Bulgaria and Romania.
[172] Kosovo.
[173] Bosnia.

No geographic differentiation	Czech Republic, Germany, France, Greece, Croatia, Lithuania, Latvia, Ireland, North Macedonia, Malta, Holland, Norway, Portugal, Serbia, Sweden and Slovakia	16

Source: BEREC Report "Report on competition amongst multiple operators of NGA networks in the same geographic region" page iv.

733. There was discussion in the report about reasons why 10 countries applied geographic measures. It was stated there that the main reasons in 8 countries were because of geographic difference in the deployment of alternative networks (e.g. over cable or fibre). In 7 countries the reason was also a geographic difference in market share of competing operators at retail level. In 4 countries there was also a geographic difference in market share of competing operators at wholesale level. In 3 countries, population density was also taken into account (economies of scale). Then in 3 countries, the geographic price difference at wholesale level was investigated and in 1 country at retail level, i.e. Denmark where the main reason for geographic analysis was the geographic difference in retail price between companies with strong market positions and other operators. In Hungary, the price difference was only analysed on the retail market in a few areas, which means that this was therefore not the main reason for geographic differentiation of the market. In Germany, the market was not geographically differentiated, and little difference was identified at retail level between geographic areas. Finally, there were 2 countries that also itemised other main reasons than those discussed above. One can see more details on the main reasons for embarking on geographic analysis in the table below:

Table 5.2: Main reasons for geographic analysis

Main reasons	**Countries**	Number
Geographical differences in coverage of alternative networks	Belgium, Cyprus, Denmark, Spain, Hungary, Iceland, Italy and Slovenia	8
Geographical difference in market share at retail level	Denmark, Estonia, Spain, Hungary, Iceland, Italy and Slovenia	7
Geographical difference in market share at wholesale level	Denmark, Finland, Hungary and Italy	4
Population density	Estonia, Spain and Hungary	3
Geographical difference in Price at wholesale level	Spain, Italy and Slovenia	3
Geographical difference in pricing in retail	Denmark	1

Geographical difference in use of access obligations in an upstream market	Spain	1
Other	Finland Slovenia	2

Source: BEREC *Report "Report on competition amongst multiple operators of NGA networks in the same geographic region"* page10.

734. Countries that differentiated the market geographically used varying basic units as a basis for geographic markets, where for example, administrative boundaries were used in 8 countries and in 4 of them these were municipalities. In one country postcodes were used, and in another country electricity distribution areas were used as a reference. In 4 countries, where geographic units were categorised in homogeneous sub-markets, the basis was the number of competitors on a market. In 6 countries the basis was the number of competitors with reference to the number of basic infrastructures for specific deployment criteria. In 3 countries the basis was the number of competitors who each had market share over a specific reference level. In 6 countries the basis was that the market share of the largest party was lower than a specific reference level, variously at retail or wholesale level, or both. In three countries other criteria were used.

735. The reasons why 16 countries did not embark on geographic measures were as follows: In 13 countries there were not sufficiently heterogeneous competitive conditions in varying geographic areas. In 3 countries there were geographic areas with several, but small, next generation access networks that thus had little impact on competition. Four countries provided other reasons.

736. In some countries circumstances are such that companies operate in specific areas which means that more undertakings than usual are designated as having significant market power in geographic analysis of markets, which creates more work for regulators. In Denmark, for example, 21 geographic markets were defined, and 10 operators were designated as having significant market power. Of these, 9 did not have the status prior to the market analysis, and these are regional operators and thus have substantial market power in limited geographic areas. In Finland, 150 geographic markets were defined, but on the other hand only 21 operators were designated as having significant market power, which is a status they already had. The Swedish NRA had not completed its market analysis when the report was made, but it was stated that indications were that a large number of geographic markets would be analysed in that country, which could prove extremely burdensome for the Swedish NRA.

Summary of conclusions of the BEREC Report

737. From the above discussion it is clear that the proportion of next generation access networks varied significantly between countries. The price difference and variations in product offer were also investigated in 18 countries, but only three of these countries identified a difference in price and product offer between areas.

738. The main reasons for differences in prices and product offer were: Competition between networks, underlying technical characteristics and varying wholesale prices between areas. These reasons had varied weighting between countries.

739. The reasons why 7 countries did not investigate retail prices and/or a difference in product offer were: The difference was not considered to have an impact on the market analysis as a whole in 4 countries (i.e. price difference only pertained over limited period of time or was only related to regional network operators), and 4 countries (also) gave other reasons, such as small country, difficulties in collecting data.

740. Market analysis of market 3a also led to deregulation at a national level in 4 countries, while in one country, obligations had never been imposed.

741. In 6 countries[174] geographic sub-national markets were differentiated, and one country imposed geographically differentiated obligations where the market had been geographically differentiated, while 4 countries imposed geographically differentiated obligations on the market deemed to cover the whole country. 16 countries[175] did not however apply any geographic measures. At the end of June 2023, the Czech Republic joined the 6 countries that differentiated geographic markets in market 1 (market 3a in the ESA Recommendation currently in force) and also Croatia in July 2023, which means that these countries are now 8. It is clear that more countries are working on such geographic measures, including Norway.

742. The number of geographic basic units examined in the first phase of geographic analysis varied significantly between countries, where they ranged from being fewer than 100 (in three countries) and up to 20,000 (one country).

5.1.6 The impact of next generation networks and number of infrastructure competitors on geographic analysis.

5.1.6.1 General

743. The dynamics of competition, and therefore the need for detailed analysis of geographic markets, can vary depending on whether the focal point of the analysis is directed at the traditional copper networks or at next generation networks (e.g. fibre). The deployment of such next generation networks has grown incrementally in Europe, including in this country, during recent years.[176]

744. When one keeps in mind that the dynamics of competition can vary in differing environments of next generation networks, it is not unreasonable to take a closer look at

[174] After the Report was made, the Czech Republic and Croatia were added which means that there are now 8 countries that differentiate geographic markets in market 1 (market 3a in the ESA Recommendation currently in force).
[175] These countries are now 14 after the Czech Republic and Croatia differentiated geographic markets in the relevant wholesale market.
[176] The coverage of such networks is however at very differing stages of development in the various countries in Europe.

specific aspects in geographic definition of markets that are characterised by the existence of such networks.[177]

5.1.6.2 The impact of next generation networks on competition

745. As previously stated, the coverage of next generation electronic communications networks (such as e.g. fibre networks) could significantly alter the dynamics of competition on broadband markets and has already done so widely across Europe. This could relate to the coverage of such networks by the former incumbent, by his competitor/competitors or by both/all of these parties, including municipalities and utilities.

746. In this connection it states among other things in the EU Commission Recommendation on regulated access to the NGA networks from 2010 that the deployment of NGA networks is likely to lead to important changes in the economic reality of providing broadband access, and in the competition situation. It is recommended that NRAs carefully examine the development that may take place in competitive conditions as a result of the deployment of such networks, including the impact of possible segmentation of geographic markets if varying competitive conditions are identified that are stable over a period of time.

747. Ever since the case *UK/2007/0733 (Wholesale Broadband Access)* the EU has understood the impact of upgrading to the next generation of networks on competition. There was discussion there on the impact that investments in next generation electronic communications networks could have on sustainability of investments in the copper system. There it was stated that investments in next generation networks could lead to a reduction in local loop lease in copper systems, and such investments would not be as attractive as before.

748. The roll-out of next generation electronic communications networks of a former incumbent could have a significant impact on the business model of competitors. The closing of telephone exchanges that are no longer needed to provide service on next generation networks could lower the profit expectations from local loop lease in copper systems, particularly if local loop lease in street cabinets becomes technically and/or economically infeasible. It could mean that those requesting access might need to migrate to other solutions, e.g. to bitstream, thus moving themselves down the investment ladder.

749. If geographic differentiation of markets or varying obligations on areas on market 3b hinges on access products on market 3a, which could be decommissioned because of deployment of next generation networks of the significant market power operator, it could be necessary to review such differentiation or varying obligations on market 3b. When conducting geographic analysis, one needs to look to the future with regards to possibilities

[177] See, among other things, pages 31-34 in the above specified BEREC Common Position from 2014 and the EU Commission Recommendation on regulated access to next generation mobile networks, dated 20 September 2010. The above specified Recommendation, and the EU commission Recommendation on non-discrimination and costing methodologies, have now been withdrawn by the EU Commission and new Recommendation took their place which were published on 23 February 2024, see Commission Recommendation (EU) 2024/539 on the regulatory promotion of gigabit connectivity (Gigabit Recommendation). When this Recommendation was published, ECOI had concluded all national consultations, and the analysis was in reality completed. For this reason, it will not be taken into account in this analysis, and also because it remains for ESA to publish analogous Recommendation. There will be further discussion on this new Recommendation in Section 5.1.6.3 here below.

in such development. Electronic communications companies that have relied on local loop lease in copper could therefore withdraw from such access.

750. In such a scenario, the competitive pressure which parties leasing local loops exert on the significant market power operator in the environment of next generation networks also depends on whether realistic access options exist to the next generation network in question operated by the significant market power operator (real access or virtual access). The conclusion here could be the deciding factor in assessment of whether it is reasonable to prescribe geographic differentiation or varying obligations on market 3b.

751. Distribution of next generation networks may therefore possibly alter competitive conditions on Markets 3a and 3b. Co-investment in such networks could for example, under certain circumstances change the interaction between the wholesale markets in question. Competition that had been based on leasing copper local loops (LLU) could decrease in areas where such next generation networks were deployed if competitors of the dominant parties switched to active access (bitstream) instead of continuing to invest in local loop lease. The above specified factors, when viewed as a whole, could affect the possibilities for NRAs to distinguish between competitive conditions in the various areas.

5.1.6.3 Review of Recommendation on next generation networks and review of non-discrimination and costing methodologies

752. On 23 February 2023, the EU Commission published a news item that announced that a proposal had been presented for a Directive that prescribed on infrastructure for gigabit, the Gigabit Infrastructure Act, part of what is called the gigabit package. In the gigabit package one can also find a draft Gigabit Recommendation which will replace two older Recommendations, on the one hand a Recommendation for next generation networks from 2020 and on the other hand Recommendation on non-discrimination and costing methodologies from 2013.[178] As stated here above, the EU Commission published these new Recommendations on 23 February 2024 which were called the Gigabit Recommendation.

753. The proposal for the Directive relates to review of the BCRD directive (Broadband Cost Reduction Directive no. 2014/61/EU). It states in the proposal that almost all the objectives presented with the BRCD Directive had already been fulfilled and that they have furthermore become obsolete. The proportion of households that have access to 30 Mb/s Internet speed increased from 58.1% in 2013 to 90.1% in 2021. On the other hand, demands of households and companies for much more powerful Internet connections (both for fixed line and mobile network solutions) has increased significantly and the objective of everyone having access to 30 Mb/s network speed is no longer a good metric for the future. It stated in the proposal that the global pandemic COVID-19 demonstrated the need for faster connections. This increased need, calls for even more extensive measures to support existing and future needs, which is why this proposal was presented.[179]

754. With the Decision of the European Council no. 2022/2481, dated 14 December 2022, new objectives were set, i.e. that no later than 2030, networks with gigabit speed should be

[178] https://digital-strategy.ec.europa.eu/en/news/Commission-presents-new-initiatives-gigabit-infrastructure-act-proposal

[179] The Gigabit Infrastructure Act – Proposal COM(2023) 94 final, dated 23 February 2023, page 1.

accessible to all who wish for, or need a network with such capacity. All end users should also be able to use gigabit service at a fixed location. All urban areas should furthermore be able to enjoy service on next generation access networks with performance that is at least equivalent to 5G performance. The gigabit proposal was presented as an endeavour to achieve these objectives.[180]

755. Though the Directive has not come into force, it is clear that this is a detailed discussion on next generation access networks and on the development that has taken place and will take place, making it interesting to take into account what is said in the proposal for the Directive and Recommendation. This particularly applies with respect to geographic analysis, as it is clear that greater emphasis has been placed on geographic analysis of electronic communications markets during recent years and it is important to monitor the development on this issue.

756. There is not a great deal of discussion on geographic analysis in market analyses by NRAs in the new Gigabit Directive. In this connection one may, however, take account of the new Recommendation where one can find detailed discussion on geographic analysis of markets, and of the accompanying working document. There is nothing new to be found there that has not been mentioned in the discussion above, and therefore no need to repeat it.

5.1.7 The impact of multiple competitors on market 3a on geographic analysis and significant market power in the environment of next generation electronic communications networks.

757. In the BEREC Report on Co-investment and significant market power in the environment of next generation electronic communications networks from 2012 there is among other things discussion on the impact of multiple competitors on the wholesale market for local access provided at a fixed location (market 3a) on geographic analysis and significant market power in the environment of next generation electronic communications networks.[181]

758. It is stated there that the deployment of electronic communications networks was characterised by high fixed and sunk costs. In the case of co-investment, the number of parties who shared the cost of deployment of the electronic communications network has increased, as also did the parties who could provide wholesale access in market 3a. The increase in the number of direct competitors on the market in question was likely to encourage active competition, both at wholesale and retail level, particularly in the case of fibre connections. In the Electronic Communications Act no. 70/2022, which is based on the Code, more emphasis is placed on encouraging deployment of electronic communications networks than in the older electronic communications legislation, without this however impinging on competition. In Article 55 of the Act, there is discussion on co-investment in new high-capacity networks.

759. It is also stated there that such co-investment in electronic communications networks could either result in positive competitive impact on the wholesale and retail markets or lead

[180] Same source, paragraph 2, see also Decision of European Council no. 2022/2481.
[181] See Section 3.1.3 BEREC Report on Co-investment and significant market power in NGA networks, BoR (12) 41, from April 2012.

to damaging collusion between the parties involved in the co-investment, which would have damaging results for consumers. The final impact of such cooperation on the market in question was decided among other things, by the number of active competitors on the market both within and outside the cooperation.

760. Market 1 (market 3a pursuant to the ESA Recommendation in force from 2016) is one of those markets where the EU Commission has come to the conclusion that active competition was generally not present and should therefore be susceptible to market analysis and ex ante regulation if NRAs come to the conclusion that one or more electronic communications undertakings enjoyed significant market power. In the Commission Guidelines on market analysis and assessment of significant market power from 2002 it states among other things that the Commission's decision-making practice showed that concerns about single dominance arose in the case of market shares of over 40% even though such dominance could be found under certain conditions with a lower market share. A very large market share, i.e. over 50% was sufficient on its own to demonstrate significant market power unless there were exceptional circumstances.[182]

761. In the above specified BEREC document, it is furthermore stated that the structure of a market characterised by two operators implies axiomatically that one of the players would have more than 50% market share. A market characterised by high entry barriers where only one or two parties operated, raised questions on significant market power and in general on the competitive situation on the relevant market.

762. Subsequent to the Code becoming law and publication of the EU Commission Recommendation on the relevant markets from December 2020, it seems that less emphasis was placed on there being a need for more than two electronic communications networks to ensure active infrastructure competition on market 3a. This particularly applies if one or both of the electronic communications networks are open and operated by a wholesale-only company or companies. In this connection one can, among other things refer to a Danish case from 2021, where in that country it sufficed that there were two electronic communications networks for it to be possible to segment geographic markets, and in some instances also to come to the conclusion that there was active competition on specific geographic markets. There will be further discussion on the Danish case here below, and on market analysis from more countries that have come to this conclusion recently.

5.1.8 The risk and/or gain from geographic measures by area

763. The conclusion that there is a need for detailed geographic analysis of the market in question constitutes recognition that competitive conditions may vary by area, which could call for differing geographic approaches by area. It is important to keep in mind that it is only necessary to impose obligations where there is a real need for them and then to the extent needed to resolve an identified competition problem on the relevant market and/or downstream markets. It is generally recognised that such geographic analysis constitutes certain risks that require detailed examination on a case-by-case basis.[183]

[182] This main principle is unchanged in the SMP Guidelines in force from the EU Commission from 2018, on which the ESA SMP Guidelines in force from 16 November 2022 are based.
[183] See, e.g., pages 36-37 in the above specified BEREC Common Position from 2014.

764. In the BEREC Common Position from 2014 it is stated that when NRAs conduct geographic analysis, they should maintain a balance between possible errors which could result from such an analysis. On the one hand, there is a Type 1 error where deregulation (or the imposition of lighter regulation) had been implemented when in fact regulation (or stronger regulation) should have been imposed.[184] On the other hand, there is a Type 2 error where it would have been justified to deregulate (or impose lighter regulation) when regulation is imposed.[185]

765. Type I error means that the wholesale market in question would be subject to under-regulation. This conclusion could result from imprecise assessment of the market conditions that needed to be in place to ensure active competition. The consequences of such would normally be impairment of the competitive pressure directed at potential significant market power operators and could manifest itself in a price increase or in diminished quality and innovation, to the disadvantage of consumers. In addition to this, entry to the market in question could become more difficult, which could lead to diminishing competitive pressure at retail level. Type I error on market 3b could furthermore result from a misunderstanding of end user needs. If electronic communications companies that for example served large customers on the corporate market, needed wholesale products that cover the whole country, as this would reduce business and software costs for the electronic communications companies in question when they reacted to demand from large corporate customers that would always want to interconnect all of their operations locations. The withdrawal of bitstream obligations in certain regions could lead to a shortage of wholesale access from significant market power operators which could lead to those requesting access having to rely on wholesale access from local parties on commercial terms, were such access actually available. On the other hand, the fact that some service providers might choose wholesale access from one specific party does not mean, on its own, that the relevant market was the whole country. If there were, for example, a sufficient number of service providers in an area which had been deregulated that operated their own electronic communications networks in the area in question or could purchase wholesale access from a party other than the former significant market power operator in that area, such parties should not need to worry about not being able to provide services to such large companies.

766. On the other hand, Type 2 error would mean that regulation would continue in the area or areas where there was considerable or even active competition in place. This could lessen the incentive for the potential significant market power operator to introduce innovation which could provide benefits for consumers. However, there were examples in Europe, where deregulation on market 3b, and thus freedom for the significant market power operator on that market, had in some instances led to innovation in the form of product bundles, increased speed of connections and lower price for broadband service at retail level.

767. It was then stated in the BEREC Common Position that in addition to the above specified errors, geographic analysis could raise certain questions on other important aspects which the NRAs might need to consider.

[184] Also called “False positive”.
[185] Also called” False negative” .

768. First, the geographic analysis of the relevant market could influence price structure of regulated wholesale service. Deregulation of the competition area could exclude a region with lower development costs (common in urban areas), from the calculation of average prices in the area as obligations would still apply (usually rural areas) and thus the regulated wholesale price would increase. This could lead to higher retail prices in those areas that would remain regulated or lower profits from service providers if the retail price of the significant market power operator continued to be level across the country. This could lead to less competition in those areas that were still regulated. NRAs had an available tool to tackle such a problem if they considered it necessary to maintain comparable prices across the country.[186] This could however result in a negative impact on other connected markets, e.g. predatory pricing by the significant market power operator in the deregulated areas by virtue of cross-subsidies from the regulated areas.

769. Second, one should consider the impact it would have on consumers if geographic segmentation of the relevant market were to result in differing prices at retail level between areas or would increase such a difference. Though this could be explained by a more efficient price setting which among other things better reflected underlying costs, it could be particularly difficult for consumers to understand such a price difference. Attention should also be paid to the level of transparency, as it could be difficult for consumers to understand what terms were on offer in their area.

5.1.9 Conclusion on geographic analysis in ECOI Decision no. 5/2021

5.1.9.1 ECOI Decision no. 5/2021

770. In the ECOI Decision no. 5/2021, dated 19 October 2021, on the designation of undertakings with significant market power and the imposition of obligations on markets 3a and 3b, ECOI came to the conclusion that in the light of increased importance of geographic analysis in market analysis of the relevant markets in Europe, of increased deployment of fibre networks in Iceland, of increased market share of Mila competitors on the relevant wholesale markets and of varying Siminn market share on related retail markets, that a more detailed geographic analysis needed to be made on the markets than had been previously made.

771. With respect to the choice of basic units for further geographic analysis, ECOI considered that municipalities were a suitable unit to use in geographic analysis, given the circumstances in this country. It was not considered that postcodes were more suitable criteria than municipality boundaries when assessing homogeneity or differing competitive conditions by area in this country. In order to prevent an enormous number of small markets, it was decided to gather together municipalities were similar competitive conditions prevailed into two groups, such that one area contained areas with more competition and the other contained areas where there was little or no competition. Municipalities that would be deemed to belong to the unit where more competition prevailed had to fulfil two conditions:

[186] In the EU Commission Recommendation on consistent non-discrimination obligations and costing methodologies from 2013 it states among other things that they: *„… also contains some indications of the way differences in the competitive conditions prevailing in different geographic areas may affect the design of the wholesale remedies by the NRA."*

- That there is a fibre network that competed with Mila in the relevant area, which reached at least 75% of households and companies.

- That the Siminn market share on the retail market for broadband service was under 50%.

772. As regards analysis of retail market with respect to geographic analysis, ECOI considered there to be no significant difference in competitive conditions on the retail market for broadband service in this country by geographic area and that the geographic market was therefore decided to be the whole country at retail level.

773. As regards geographic definition of wholesale market for market 3a, the categorisation described above was used, i.e. an area where there was little or no competition and area where there was more competition. At the time when the market analysis was made, 17 municipalities fulfilled the above-mentioned condition to being deemed an area where there was more competition:

- The City of Reykjavík

- Kópavogsbær

- Seltjarnarnesbær

- Garðabær

- Hafnarfjarðarkaupstaður

- Mosfellsbær

- Akraneskaupstaður

- Svalbarðsstrandarhreppur

- Grýtubakkahreppur

- Tjörneshreppur

- Hveragerðisbær

- Sveitarfélagið Ölfus

- Flóahreppur

- Ásahreppur

- Fljótsdalshreppur

- Rangárþing ytra

- Skeiða- and Gnúpverjahreppur

774. This meant that 25% of the country's municipalities belonged to the area where more competition prevailed and thus where lighter obligations were thus applied, and about 70% of the country's population lived in these municipalities.

775. With respect to analysis of wholesale market for market 3b, the conclusion was the same as for market 3a.

776. The next step was then to examine competitive conditions on a corresponding retail market if there were no wholesale obligations (the modified greenfield approach). In the opinion of ECOI, it was not possible to discern a difference in demand for the above specified broadband service on the basis of area, neither with respect to Siminn products or those of its competitors. With the above in mind there was thus no significant difference in competitive conditions on the retail market for broadband service in this country by geographic area and the geographic market was therefore the whole country at retail level.

777. ECOI finally assessed the homogeneity of competition conditions in this country. In this assessment, ECOI conducted an assessment of possible differences in competitive conditions with analysis of both the relevant retail and wholesale markets. *Real* competitive conditions were assessed that were reflected in the market behaviour of electronic communications companies, for example in their pricing and service offer, and the impact of this behaviour on the structure of the market, for example market share and network deployment. The task was to find out whether within the market there was adequate homogeneity between areas such that the country should be considered to be a single market or whether competitive conditions varied significantly between areas such that separate geographic markets should be defined or varying obligations imposed by area.

778. Reference was made to ESA Guidelines on market analysis from 2004, now showing their age, where it was stated that the process for geographic definition of markets should be analogous to the process that applied to definition of product and service markets, among other things regarding assessment of demand- and supply-side substitutability. Instead of assessing substitutability between product or service categories, one should assess substitutability between areas. Homogeneity of competitive conditions between areas was therefore examined, among other things with regards to deployment of new electronic communications networks, market share, pricing, service quality, service offer, market behaviour, service characteristics and the nature of demand.

779. With respect to assessment of demand-side substitutability, ECOI came to the same conclusion as in its last decision on the market in question, see PTA Decision no. 21/2014. It was stated that it would be fair to say that it was very unlikely that a sufficient number of consumers would decide to move house to another market area for the sole reason that there was a 5-10% price increase. With regards to supply-side substitutability it was, also unlikely that other network operators would embark on establishing their own network subsequent to such a price rise, solely for that reason. The SSNIP test could thus lead to many and small markets and would thus neither be realistic nor useful in the circumstances that prevailed on the relevant market in this country. Strictly speaking, deployment of new electronic communications networks could mean that assessment of substitutability indicated that there were many geographic markets. On the other hand, the fact that the Mila network (copper and fibre) almost covers the whole country, contradicted such a conclusion. It was

therefore necessary to emphasise competitive conditions and to investigate whether they were sufficiently homogeneous over the whole country.

780. ECOI thus considered there to be no reason to differentiate varying geographic markets in this country, i.e. on the one hand for the 17 municipalities in question and on the other hand for other municipalities in the country. The reason for this was that competitive conditions were not sufficiently heterogeneous between these areas. Although there was a certain difference in market structure between the two areas in question, among other things with regards to deployment of the fibre networks of Mila competitors and with regards the market share, this did not have sufficient competitive impact that led to variations in price, service quality, service offer and other aspects that consumers would experience if competitive conditions varied significantly between areas. The competitive pressure that Mila faced was not considered sufficiently different between these two areas on the relevant market such that it could be considered sufficient to justify the above specified geographic differentiation.

781. ECOI strongly emphasised that for market structure to be deemed significantly different between areas, which would result in appreciably different competitive conditions between areas, such that it would be justifiable to geographically segmented markets, there needed to be an area where at least three alternative networks had considerable deployment. This was in accordance with practice that then applied in the EEA and with those Guidelines and Recommendations that ECOI was obliged to take into account, but they were then beginning to show their age. ECOI therefore placed more emphasis on behaviour conditions. As has been described in more detail here before in Section 5.1, these views have been on the wane in recent years, particularly since new electronic communications legislation based on the Code became law with Act no. 70/2022. There is furthermore a significantly new tone in the EU Commission Recommendation from December 2020, which was set on the basis of the Code, and in recent market analysis decision practice in the EEA, among other things in the case of Denmark, which will be described here below. It was for example considered that two alternative networks could suffice for there to be varying competitive conditions when compared to an area where only one network was operated. Such views are actually also expressed in more new cases that will also be described.

5.1.9.2 ESA opinion on the conclusion of geographic analysis in Decision 5/2021

782. On 14 October 2021 ESA comments were received with respect to the above specified ECOI Decision no. 5/2021.[187]

783. In the ESA opinion, there was among other things discussion on ECOI geographic analysis were ESA expressed its concern as to whether ECOI indicators provided a sufficiently comprehensive insight into whether Mila faced appreciably different conditions of competition in certain municipalities in Iceland, particularly in the Ljósleiðarinn operating territory. ESA noted that despite the relatively small number of networks at wholesale level in Iceland, the Authority was aware that Mila's main competitor was a wholesale-only operator. ESA considered that in the assessment, which ECOI should have examined more

[187] https://www.fjarskiptastofa.is/library?itemid=f9c530e0-139d-4c80-b514-41555358fff9.

closely, was the special incentive that such a wholesale company had, in the case of a vertically integrated company, when it came to fostering competition in retail.

784. ESA also observed that in specific municipalities, the Siminn market share was lower than the proportion generally considered to be damaging for competition, even as low 35% in some cases. It was then pointed out that the ECOI projection that the Mila proportion will also decrease below those boundaries that have been associated with significant market power, in specific municipalities, i.e. in the City of Reykjavík, Seltjarnarnesbær and in Ölfus municipality.

785. At the same time ECOI had previously expressed concern regarding the unstable nature of local competition development. It was stated that ECOI had thus emphasised the need to monitor whether recent development, such as Siminn retail through the Ljósleiðarinn system and deceleration of the deployment plans of competitors, would lead to a reversal of the competition development that had taken place in the Ljósleiðarinn operational territory. There was also discussion on the factor that ECOI had noted the possibility of a significant change in the competitive landscape if large wholesale customers would switch from Ljósleiðarinn networks over to Mila, and that the impact of the possible sale of Mila by Siminn had yet to manifest itself, should this sale take place.

786. In the light of this, ESA particularly took into account the fact that ECOI had undertaken to review the geographic analysis by the end of 2022, in consultation with ESA. ESA underlined the importance of such a review being implemented and that it should be ensured that the indicators used gave an adequately detailed picture of development of competition of the market in the various municipalities. If such thresholds were too high, there was a risk that important development in the more competitive municipalities might be overlooked.

787. In this connection it is important to emphasise that in November 2021, both Siminn and Mila appealed the above specified ECOI Decision, and that case procedure lasted for an extended period of time, i.e. until the end of December 2022. In addition to this, the sale of Mila by Siminn was not finally completed until the end of September 2022 after CA had endorsed the merger between Mila and Ardian on 15 September 2022. It was then not clear until December 2022 that Sýn made a new agreement with Ljósleiðarinn which meant that the uncertainty that prevailed about market development was not cleared until the end of 2022. For the above reasons, the ECOI review of geographic analysis was delayed, but it was soon clear that from the turn of the year 2022/2023, ECOI needed to conduct from scratch a new market analysis on markets 3a and 3b.

788. ESA also considered, with respect to ECOI concerns about potential customer migration at wholesale level, that countervailing buying power of significant wholesale customers could also have a positive impact on the market, particularly with respect to competitive restraint. One could also react to any kind of adverse market development stemming from unforeseen changes in wholesale transactions with the review of market analysis, with an emphasis on those changes. ESA finally called on ECOI to explain in its final decision, why reversal in competition development had been projected in those municipalities that enjoyed a higher level of competition. ESA particularly encouraged the Administration to include discussion on its pessimistic projections in municipalities where market share was significantly below traditional indicators for significant market power. ECOI was also urged to provide reasons

why the Administration considered that Siminn transactions with Ljósleiðarinn would lead to deteriorating competitive conditions.

789. With respect to the 17 municipalities which ECOI had identified as having a higher level of competition, ESA raised doubts about the extent to which the imposition of milder obligations reflected underlying market conditions. With respect to geographic analysis, ESA agreed with the ECOI view that recent competitive development was at this stage unstable in specific municipalities. If NRAs could not clearly identify a significant and objective difference in competitive conditions between areas, which were adequately stable over time, it was accepted that a geographically differentiated measure, such as imposition of varying obligations, could be appropriate.

790. ESA finally concluded that it was important to take care that each obligation required justification as to why each measure in question was appropriate and proportionate with respect to the nature of the competition problem that had been identified. In this respect, ECOI was urged to explain in its decision on why the planned measures for those municipalities that enjoyed a higher level of competition were justified and proportionate on the basis of the nature of the specific underlying competition problems that had been identified. ECOI was furthermore urged to provide reasons as to why almost all possible obligations had been applied in those municipalities where there was little or no competition present.

5.1.9.3 Ruling of the Appellate Committee for Electronic Communications and Postal Affairs from December 2022

791. On 29 December 2022 a ruling was issued in the Appellate Committee for Electronic Communications and Postal Affairs in case no. 3/2021 on the above specified ECOI Decision no. 5/2021.[188]

792. The origin of the case can be traced to two appeals, both dated 15 November 2021, received by the Committee from Mila and Siminn. On the part of Mila, the primary claim was that the appealed decision be rescinded in its entirety. In reserve, it was claimed that the decision be rescinded or be amended with respect to those parts of the decision that the Committee accepted as having flaws that warrant rescission. On the part of Siminn, the primary claim was that the appealed decision be rescinded in its entirety. In reserve, it was claimed that items 5 and 10 in the text of the decision that relate to Siminn, be rescinded.[189]

793. The Committee neither rescinded or amended definition of both product and service markets and geographic markets of markets 3a and 3b in its ruling. The Committee discussed the planned ECOI review of the Administrations geographic analysis, and stated in the ruling that ECOI was required to evaluate various Mila arguments, in that review.[190]

794. For the sake of context, there will be further examination of the Mila view of the ECOI conclusion from ECOI geographic analysis in the year 2021. The Mila position was that the ECOI opinion that the country as a whole should be seen as the geographic market, both in

[188] Ruling of the Appellate Committee in case no. 3/2021, paragraph 1.
[189] Same source, paragraph 1-3.
[190] Same source, paragraph 365.

markets 3a and 3b, did not stand up to scrutiny. Mila considered that the conclusion of the geographic analysis did not harmonise with statistical facts, as in specific municipalities there was substantial deployment of fibre networks other than that of Mila, and, where Mila had market share, which was close to market share of the competitors, Ljósleiðarinn or Tengir, or even significantly lower.[191]

795. Mila considered that the above view particularly applied to the most densely populated area of the country, i.e. the Capital City Area. It was stated that in this area, Ljósleiðarinn combined market share was greater than Mila market share. There was also discussion on differing Mila prices for fibre local loops and bitstream service over fibre between urban and rural areas, and also on there being significantly greater speed in the Capital City Area than outside that area, with very few exceptions. Míla said that this cast light on varying competitive conditions between areas.[192]

796. Mila also considered that ECOI had not succeeded in basing its market analysis on a forward-looking view of market development. In this connection it was pointed out that Siminn and Ljósleiðarinn had made an agreement on Siminn bitstream access to Ljósleiðarinn fibre network in July 2020, such that Mila customers had the possibility of migrating to the Ljósleiðarinn network. Mila also criticised ECOI comments to the effect that Ljósleiðarinn deployment plans were limited and that they were limited first and foremost to areas where Ljósleiðarinn was already operating. Mila said that this did not harmonise with information from Ljósleiðarinn, among other things information presented on slides that the company had published in the government consultation portal. Mila finally said that it had not been taken into account that the company's market share had decreased since the prior ECOI decision from 2014 had been issued. Mila market share had decreased in excess of projections and Mila said that the decision did not take into account changes that were foreseeable during the period of validity of the market analysis.[193]

797. Mila said that ECOI had thus not adequately demonstrated that the geographic market should be defined in the manner that had been done in Decision 5/2021, i.e. that the competitive pressure on Mila was similar across the whole country. Mila said that the geographic analysis was contrary to the law. Reference was made to ESA opinion on the market analysis where comments were made on whether the ECOI investigation provided an adequate inside into varying competitive conditions in specific municipalities, particularly where Ljósleiðarinn operated. Mila finally stated that the company considered there to be no chain of substitution between copper and fibre, which had an impact on ECOI geographic analysis, as Mila said that deployment of fibre networks only applied to specific geographic areas.[194]

[191] Same source, paragraph 61.
[192] Same source, paragraphs 62 and 63.
[193] Same source, paragraph 64.
[194] Same source, paragraphs 66-69.

5.1.10 Recent market analysis in the EEA relating to geographic definition

5.1.10.1 General

798. ECOI considers it to be useful, for the sake of context, to give an account of recent geographic analysis in various states within the EEA. ECOI reiterates that all NRAs must, in addition to taking into account the European electronic communications regulatory framework and the appropriate Guidelines and Recommendations, conduct geographic analysis in accordance with market conditions that prevail in the state in question, and they almost always differ appreciably between states.

5.1.10.2 Italy 2019

799. In a case from Italy from 2019, the EU Commission endorsed a draft market analysis of markets 3a and 3b from the Italian NRA, AGCOM. AGCOM came to the conclusion that Milan was a separate geographic market on the relevant markets vis-à-vis the rest of Italy and that active competition was considered to be present there and no electronic communications undertaking was designated as having significant market power in that city. Three electronic communications undertakings were operating there that offered their own fibre network, i.e. the former incumbent (TIM) and Open Fiber[195], which had over 90% coverage, and Fastweb with about 40% coverage. TIM market share was also significantly lower than in other locations in Italy. In that location TIM had 48% market share on market 3a when self-supply was included (33% in external turnover), 21% on market 3b and 29% in retail. The Open Fiber market share was higher than TIM's in the city on markets 3a and 3b and TIM was the third largest party.[196] TIM market share had decreased significantly between the years 2017 and 2018 and had become appreciably lower in Milan than elsewhere in Italy.

800. The AGCOM decision was then to apply varying obligations and 26 municipalities on the relevant markets (5% of inhabitants).[197] The conditions that needed to be fulfilled to be deemed a competitive area, where milder obligations would rest on TIM (more leeway with respect to price on market 3a, no price control on market 3b and milder access obligations), were:

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[195] Open Fiber is a wholesale-only operator. The company was founded in 2015 by public sector parties, among other things the power company Enel, which owns half of the company. The company's fibre network reached about 12.5% of households in Italy in mid-2019 and at that time it had announced major deployment plans for the coming years.

[196] It was stated among other things in an opinion from the Commission in its discussion on AGCOM plans:

"AGCOM observes that since the previous market review in Italy there was ***a significant development of alternative infrastructures affecting the competitive situation on the considered markets.*** *AGCOM carries on an analysis of the competitive conditions on a geographic basis taking into account in particular the number of operators, the number of alternative networks and their coverage as well as the distribution and evolution of market shares over time. AGCOM considers that* ***in Milan the structural competitive conditions are already significantly and durably different compared to other municipalities*** *thus affecting the boundaries of the geographic market. … With the respect to other Italian municipalities (rest of Italy), notwithstanding the comparatively stronger competitive dynamic in some municipalities, in particular where there are several alternative access networks,* ***AGCOM does not consider such differences sufficient to justify the definition of separate geographic markets. Thus, it proposes to recognise the observed heterogeneity in competitive conditions via the application of differentiated remedies."*** (ECOI emphasis edit)

[197] The list of companies that fulfil the conditions was to be updated annually.

- At least 3 companies with their own infrastructure[198] which must all reach 60% of inhabitants and the total coverage of TIM competitors shall be at least 75% and
- TIM market share in retail must be 40% or less of number of connections and
- TIM market share (VULA or bitstream) shall be less than 80%.

801. The EU Commission stated in its opinion that AGCOM had taken into account the existence of competitive conditions that were sufficiently delineated and stable between areas, both with respect to differentiated geographic markets and varying obligations by geographic area. The Commission also showed its understanding that AGCOM had been concerned that deregulation of the relevant markets at this stage, particularly market 3a, could hinder competition on these markets.[199] It should also be mentioned that AGCOM published a new draft market analysis of the relevant markets for consultation on 3 July 2023, and proposed that obligations be fully withdrawn on market 3b and partly on market 1 (market 3a in the ESA Recommendation in force).[200]

802. It is clear that with the Recommendation on the relevant markets from December 2020, the EU Commission has removed market 3b from the list of those markets that shall be susceptible to ex ante regulation. AGCOM implemented the three-criteria test to determine whether the market could nevertheless be susceptible to ex ante regulation on the basis of national circumstances. AGCOM came to the conclusion that the first condition of the 3-criteria test (high and non-transitory access barriers) was not fulfilled on market 3b. As all three conditions of the 3-criteria test must be fulfilled, AGCOM did not analyse the other two conditions (tending towards active competition and effective competition legislation). In order to ensure transparency and to give electronic communications companies reasonable notice, existing obligations will be in force until the end of 2025.[201]

803. On market 1, AGCOM has proposed that geographic markets be differentiated, and the electronic communications company TIM be designated as having significant market power in those areas where less competition is deemed to exist. With respect to geographic analysis on these markets, AGCOM has revised its conditions from the 2019 analysis. For areas to be assessed as fully competitive and completely deregulated, a municipality has to fulfil the following conditions:

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[198] Among other things stated in the Commission opinion where AGCOM plans are described are: *"AGCOM explains that this indicator has been reinforced compared to what was proposed in the national consultation following the comment received by alternative operators and the National Competition Authority,* ***which underlined the need to have the presence of minimum two alternative networks with a considerable overall coverage*** *in order to assure a significant competitive pressure by alternative operators."* (ECOI emphasis edit)

[199] Then it is stated in the Commission opinion: *"The Commission also acknowledges that Italy is indeed experiencing an unusual scenario in the wholesale market, where a new entrant is a wholesale-only operator investing at national level.* ***This would require a regulatory approach different from the one used to create a level playing field for alternative operators vertically integrated.*** *In addition, the Italian market is characterised by TIM´s very high market shares in market 3a, significant uncertainty concerning future market developments due to the formal announcement of negotiations between Open Fiber and TIM on possible forms of integrations of their fibre networks as well as ongoing antitrust investigations."* (PFS emphasis edit)

[200] Alesso Mauro, "AGCOM consults on 2024-2028 review of fixed access markets", Cullen International (19 July 2023).

[201] Same source.

- TIM market share below 30% at retail level.
- Market share TIM of the relevant wholesale market is below 50%.
- FTTH deployment from wholesale-only company competing with TIM network is higher than 80%.
- FTTH deployment is above 40%.

804. The following conditions were then made for geographic areas where more competition prevailed (M1b in table 5.3 here below), but that are not fully deregulated, according to the above and where less stringent obligations shall apply (not price control):[202]

- TIM market share below 40% at retail level.
- Market share TIM of the relevant wholesale market is below 70%.
- FTTH deployment from wholesale-only company competing with TIM network is higher than 70%.
- FTTH deployment is above 20%.

805. With these amended conditions, Cagliari will be assessed as fully competitive and therefore completely deregulated. Milan was the only city that was competitive and deregulated in the prior AGCOM analysis from 2019, which means that there is every indication that there will be two deregulated areas in Italy. It is remarkable that a requirement is no longer made for specific deployment of at least three infrastructures, but rather that it suffices to have a specific deployment of one wholesale-only company competing with the former incumbent.

Table 5.3 Comparison of analysis in force and planned analysis in Italy

Conclusion of geographic analysis, pursuant to draft of new market analysis:		**Conclusion of geographic analysis, pursuant to older market analysis:**
M1a	Milan and Cagliari deemed competitive geographic areas and thus deregulated.	Only Milan deemed competitive geographic area and thus deregulated.
M1b:	59 municipalities deemed to have more competition and imposition of less burdensome obligations, i.e. no price control.	Fully regulated in the whole country outside Milan.
M1b	Other municipality approximately 89% of inhabitants of Italy. Fully regulated.	

[202] These were 59 municipalities where about 8.5% of Italy's inhabitants resided.

Source: Alesso Mauro "AGCOM consults on 2024-2028 review of fixed access markets" Cullen International (19 July, 2023).

806. It shall be noted that the EU Commission has not taken a position on the above AGCOM when this text was written in the autumn of 2023.

5.1.10.3 Poland 2019

807. On 24 May 2019 the EU Commission endorsed a draft market analysis by the Polish NRA (UKE) of market analysis of markets 3a and 3b.[203] Final decision was made by UKE in October 2019. In this case, UKE applied geographic measures such that the relevant markets were geographically differentiated. There were 51 municipalities (13% of inhabitants) in competition markets on market 3a, and on market 3b there were 151 municipalities (36% of inhabitants). The market share of the company with market dominance (OPL) in the above specified 51 municipalities on market 3a was only 14-27%, while the share of the company at national level was 64%. In the above specified 151 municipalities on market 3b, the company's market share ranged from 17-38%. To be deemed the competitive area, the following conditions needed to be fulfilled:

- At least 3 electronic communications companies provide retail broadband service.
- OPL does not have market share, higher than 40% in retail, on the basis of number of connections.
- At least 65% of households have access to infrastructure from at least three electronic communications companies (on market 3a these need to be separate infrastructures of at least three parties while on market 3b an LLU party could be one of the three parties).
- No more than 10% of households do not have access to Internet.

808. The Commission did actually endorse the draft market analysis but commented however on the geographic analysis. Among other things, the Commission felt that there was a lack of explanation as to why the criteria in question had been chosen and how they reflected varying competitive conditions between areas. For example, a small change in the 65% deployment criteria, one way or the other, could lead to significant reduction or increase in competitive areas (sensitivity test).[204]

[203] See PL/2019/2160 and 2161.

[204] It was furthermore stated on page 11: *"The Commission considers that if the first criterion (at least 3 operators providing retail broadband access) were maintained as proposed, then the following thresholds used could be adapted to be less restrictive, while still ensuring the competitive character of the communal area assessed. Indeed,* ***the proposed thresholds*** *(less than 40% market share of OPL, 3 operators with 65% coverage)* ***appear relatively high and might therefore be overly conservative,*** *i.e., comparing to, e.g., the cases from Portugal (PT/2016/1889-1889) and Spain (ES/2015/1818-1820). As a consequence, the cumulative application of the criteria results in OPL having retail market share in the competitive areas in both markets* ***significantly below 20%,*** *while moreover,* ***is only to a very limited extent due to the effect of the current wholesale access regime,*** *given that take-up on both markets 3a and 3b is limited and declining. While the Commission is conscious that it has accepted the same set of criteria used by UKE in its last market review, as regards market 3b, it would urge UKE to give greater weight to the developing experience of NRA´s in terms of geographic segmentation."* (ECOI emphasis edit)

809. It was furthermore considered that the methodology was not sufficiently forward-looking. The Commission urged UKE to prescribe in the final decision how future development of networks and other market development in the short-term and medium-term would impact on the list of municipalities in competitive areas. It was likely that municipalities that fulfilled the conditions would increase significantly during the lifetime of the analysis. The Commission finally commented on the UKE plans to impose obligations on OPL fibre in areas where it was deemed that competition did not prevail.

5.1.10.4 Lithuania 2019

810. In a case from Lithuania from 2019, the EU Commission endorsed a draft market analysis by the Lithuanian NRA (RRT) of markets 3a and 3b.[205] It was stated that the last RRT analysis of the relevant markets was from 2015 (market 3a) and 2016 (market 3b) and then no geographic measures had been taken.[206] Telia is the company with market dominance in Lithuania.

811. RRT now conducted analysis of competitive conditions by municipality. On market 3a, the Administration reasoned that municipalities that did fulfil all the 4 criteria listed below, belonged to the same geographic market. The criteria were:

- The criteria below must apply to two of three related retail markets (voice telephony, TV and Internet access):
  - Number of retailers at least three (with Telia) and;
  - At least one competitor of Telia has at least 25% market share and
  - Telia market share may generally not exceed 40%, but if this happens then the next competitor may not have less than 15 percentage points below Telia.
- Fixed electronic communications networks of at least two competitors of Telia, each individually shall reach at least 50% of residences in the relevant municipality[207].
- At least 70% of residences in the municipality shall have the option of access to networks of three parties[208]
- No more than 40% of residences in the municipality are served by Telia competitors that have access to conduits and ducts belonging to Telia.

[205] See LT/2019/2183 and 2184.

[206] See LT/2015/1821 and LT 2016/1839. The EU Commission then raised objections to RRT not having conducted a more detailed geographic analysis of competitive conditions than was seen to be the case but did not exercise its veto.

[207] In an opinion from the EU Commission, which discusses criteria, the following is stated: *"According to RRT, the network deployment of the alternative operators shall be at least two times higher than the minimum permitted market share for the strongest alternative operator (25%) so that the operator is able to effectively compete and to connect new end-users without incurring significant costs."*

[208] The following is said about this criterion: *"According to RRT´s response to the third RFI, the third criterion is established so that the relevant operator has the potential to expand to compete for end-users, and the end-user is in a position to choose among several operators for the provision of retail services."*

812. The conclusion was that none of the 60 municipalities in Lithuania fulfilled all these criteria on market 3a. For this reason, the Administration defined the geographic market is the whole country.

813. The same criteria were used as grounds on market 3b, with the exception of the fourth (Telia conduits and ducts). The conclusion there was that two municipalities fulfilled the criteria (4.2% of the population) and for this reason, the Administration defined the geographic market such that they were two. In Area 1 (no competition) was Telia with 58% market share, the next operator had 22% and a large number of other operators had 7% market share or less. Telia had 51% market share in this area on the retail market for Internet access. In Area 2 (competition) Telia market share in wholesale was 38%, while the competitors had similar shares. RRT considered that in this area, Telia could not influence related retail markets, if obligations were not in place, by only controlling conditions for central access at a fixed location for mass-market products in wholesale. It was also stated that although there were substantial access barriers in this area, there were at least two Telia competitors on the market for providing such wholesale access. RRT therefore considered that active competition prevailed in Area 2 and designated no party as having significant market power in this area and withdrew obligations from Telia.

814. The EU Commission criticised RRT for applying excessively stringent criteria. It said cumulative application of the three criteria (i.e. market share in retail, network coverage and consumer options for choice of retail company) led to the conclusion that only two of sixteen municipalities met the criteria for market 3b.[209] In the opinion of the Commission, the RRT's narrow approach restricted possibilities for deregulation that could take place in more municipalities, were the criteria not as strict as they actually are, particularly when one takes into account that RRT maintained that there was infrastructure competition in Lithuania.

815. With respect to the fourth criteria on market 3a (conduits and ducts) the EU Commission felt that this rather belonged to market analysis of the market for physical infrastructure, which was an upstream market vis-à-vis market 3a. In the opinion of the Commission, this criterion led to an excessively stringent approach to geographic definition in market 3a. Another option for RRT had been to take varying geographic obligations into

[209] The following is stated in the EU Commission opinion: *"The Commission welcomes RRT´s granular approach in the analysis of the geographic dimension of the wholesale local and central access markets. The Commission notes that RRT bases such analyses on the cumulative fulfilment per municipality of a set of three criteria* ***(retail market shares, network coverage and end-user's choice of retail providers)*** *identical for market 3a and 3b, and an additional criterion applicable for market 3a only that assesses the dependency of alternative operators on the incumbent´s ducts. The Commission notes however, that RRT´s approach towards the geographic market definition appears too restrictive. The Commission considers that given the requirement in the first criterion of having at least three operators providing retail services in a given municipality, the remaining criteria as a whole could become laxer, while still ensuring a competitive environment in the area assessed. The Commission in particular notes that while a parameter taking into account the aggregate coverage of the two alternative networks appears to be appropriate in order to safeguard a certain level of coverage, in cases where the two alternative networks would overlap,* ***the coverage criterion that requires that at least 70% og the residences in a given municipality are served by a minimum of three operators appears to be overly conservative.*** *This is particularly the case when compared to the criteria of delineating geographic markets between non-competitive and competitive areas used by other NRAs in comparable situations, particularly having in mind the vibrant infrastructure competition in significant parts of those countries –* ***a circumstance which seems broadly comparable to Lithuanian,*** *for example PT/2016/1888-1889, ES/2015/1818-1820 and IT/2019/2181-2182."* (PFS emphasis edit).

account instead of using such an inflexible criterion in geographic differentiation of the market.

816. The EU Commission, furthermore, felt that the RRT geographic approach had not been adequately forward-looking, among other things with respect to planned deployment of networks. There was no review process integrated into the analysis, which would have made it possible for RRT to withdraw obligations on municipalities that might meet the criteria. Subsequent to a final decision being made, without needing to conduct a complete market analysis again.[210]

817. On 19 July 2019, four days after the above specified EU Commission opinion was made available, RRT made a final decision on market analysis of the relevant markets. RRT did not change the criteria or any other approach with respect to geographic analysis of the markets in question.

5.1.10.5 Sweden 2019-2020

818. In the case of Sweden from 2019-2020, the EU Commission raised serious doubts about the draft market analysis of market 3a from the Swedish NRA (PTS), with regards to geographic analysis of the market for fibre.[211] There were however no comments made on the PTS draft analysis of market 3b[212] but as in the case of the prior PTA analysis of that market from 2015[213] the administration prescribed that the geographic market was the whole country and that no party had significant market power, which meant that active competition prevailed on that market in Sweden.

819. Historically, municipalities have played a major role in deployment of fibre networks in Sweden. In that country, about 180 local networks are operated that are owned by municipalities (of 290 municipalities). Deployment of the fibre networks of the dominant operator in that country (Telia) and market share of that company, vary appreciably between areas. Two parallel fibre networks are generally not deployed in Sweden, except to a small degree to apartment blocks.

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[210] It was stated in the Commission discussion on pages 12-13: *"Against this background, the Commission urges RRT to adopt in its final measure a* ***more flexible approach towards the definition of geographic markets and review the fulfilment of the criteria on regular (annual) basis.*** *The Commission also encourages RRT to consider further adaptation of the chosen criteria and revise the necessity of keeping all the criteria that were chosen, in particular as regards the coverage criteria and the ducts accessibility criteria and adjust its findings as regards the scope of the defined geographic markets. Moreover, the Commission invites RRT to consider, at the occasion of the next market review, whether it is necessary to define a separate physical infrastructure market and* ***whether it is necessary to further adapt the criteria for geographic market demarcation of wholesale local and central access provided at fixed location,*** *with a view to adjust the reach of the competitive area to the relevant market developments."*

[211] See SE/2019/2216 (fibre) and 2217 (copper), dated 6 September 2019. On 7 February 2020, the EU Commission exercised its veto against the draft market analysis in question, as PTS decided not to withdraw the draft subsequent to the serious doubts raised by the Commission. PTS is still working on a review of this analysis. In the meanwhile, the older PTA market analysis from 2015 is in force for this market.

[212] See SE/2019/2218.

[213] See SE/2015/1688.

820. In the prior PTS analysis of market 3a from 2015[214] the Administration came to the conclusion that the geographic market should be the whole country, despite the fact that the Administration had identified varying competitive pressure by geographic area. In the opinion of PTS, this difference had not been sufficiently large and stable to justify differentiated geographic markets or varying obligations by geographic area. Telia was designated as an undertaking with significant market power on the market in question. The EU Commission did not make comments on the above specified PTS's conclusion but urged the Administration to closely monitor development of competition on the market from all aspects during the lifetime of the analysis and to collect detailed information, including from geographic areas.

821. When analysing the retail market for broadband connections, PTS came to the conclusion in the above specified draft market analysis from 2019, that there was no longer substitutability between fibre and copper connections in the country. It was the PTS conclusion that none of the above specified retail markets gave any indication that there was varying competitive pressure by region that warranted differentiated geographic markets, and for that reason the geographic market should be the whole country in all markets at retail level.

822. PTS furthermore came to the conclusion that the wholesale market in question (market 3a) was in two parts, i.e. on the one hand, a wholesale market for fibre connections (FTTH/FTTB) and on the other hand wholesale market for connections over copper networks. Cable systems were not deemed to belong to market 3a, as wholesale access to such systems could not be implemented.

823. PFS analysed competitive conditions by municipality. Around the turn-of-the-century, many municipalities in Sweden had decided to invest in fibre networks. Over 80% of them were operated as wholesale-only networks. None of them provided access to market 3a for detached residences (SDU), but only access to market 3b (bitstream). For this reason, the Swedish fibre market was fragmented, as there were many fibre operators. Telia operated the largest fibre network, which reached partly or completely to all municipalities in Sweden, but deployment and Telia market share varied appreciably by municipality. It was almost unknown in Sweden for parallel fibre networks to be deployed (apart from about 10% of apartment blocks). Where Telia did not have its own fibre network, the company provided retail service by acquiring access to market 3b to the local networks in question or undertook the operation of active equipment on the fibre networks in question.

824. In 139 municipalities there were fibre operators with more than 80% market share, including Telia in 60 municipalities and local networks in 77 municipalities. In 151 municipalities there was no party with over 80% market share, which meant that there was therefore more equal distribution of market share between Telia and local networks.

825. When analysing potential varied competitive conditions between areas, PTS examined among other things, varying pricing by Telia by area. When the analysis was made, Telia offered three price categories for FTTB wholesale to apartment blocks (MDU). PTS considered that the price difference reflected rather the habitation density and varying costs for deployment than varying competitive levels by area. Telia FTTH wholesale price to detached

[214] See SE/2015/1687.

dwellings was however the same across the country. Nor could PTS see that pricing of the local networks depended on the level of competition.

826. With the above in mind, PTS came to the conclusion that the geographic market on market 3a for fibre was the whole country, as the difference in competitive conditions between areas was not sufficiently large to justify geographic segmentation of markets.

827. PTS also came to the conclusion that Telia had significant market power on market 3a for fibre, with 37% market share on the basis of wholesale connections at a national level though market share varied very significantly between areas. The next largest operator at national level had much less market share. It was furthermore the assessment of PTS that the market share would be stable over the coming years, as it was expected that investments in fibre connections would decrease.

828. The EU Commission raised significant doubts as to whether the wholesale market could be the whole country, when one took into account the enormous difference in Telia market share between municipalities, varying deployment of Telia fibre networks between municipalities and the fact that local networks generally only offered central access on market 3b and not local access on market 3a.

829. When one considers the country as a whole, competitive conditions appeared to vary significantly, but the situation was different when one took into account individual municipalities or set of municipalities where similar competitive conditions prevailed. In many instances, it seemed that competitive conditions within the municipalities or set of municipalities were sufficiently homogeneous and often clearly distinguishable from other areas. In addition to this, it seemed that the municipalities were suitable units for geographic demarcation, as far as size was concerned, and that they could reflect deployment of fibre networks of all parties and offer clear and stable boundaries for the future. The Commission also reminded that areas where competitive conditions differed should not form the same geographic market.

830. The Commission expressed its concern that an inadequate geographic analysis could lead to wrong or excessively wide-reaching designations of undertakings with significant market power. For this reason, PTS should reassess Telia's capacity to leverage significant market power in the light of correct definition of a geographic market. Telia market share at national level was 37%, which indicated that there was appreciable competition on the market. Case documentation showed that Telia market share fluctuated by municipality, from being extremely high to being very low. The average therefore did not reflect the strength of Telia competitors in various municipalities.

831. Even if PTS had provided some documentations to show that Telia behaved in a comparable manner in all municipalities, for example that there was no connection between varying pricing and competitive position, the analysis did not take adequate account of the real boundaries of the Telia network. Historically, coverage of copper networks of former incumbents in Europe have been the whole country. This appears not to be the case in Sweden on market 3a for fibre. Unlike access to the Telia copper network at national level, access seekers with access to the Telia fibre network could only reach 37% of residences if PTS plans were realised.

832. It was therefore the conclusion of the EU Commission that there was a need for detailed geographic analysis of the market in question, in order to better reflect competitive conditions in the various municipalities so that it would be possible to make an adequate assessment of whether significant market power prevailed, as appropriate in specific municipalities or sets of municipalities, and also to respect proportionality in the imposition of obligations.

833. In the BEREC opinion dated 10 January 2020, the comments from the EU Commission are to some extent supported. It was the opinion of BEREC that PTS grounds for the conclusion to decide the geographic market as the country as a whole were not convincing, nor was the analysis adequate for it to be possible to fully appreciate competitive conditions in the various areas. BEREC agreed with the Commission that there was a need for detailed geographic analysis and that PTS could adhere more closely to the BEREC Common Position on geographic analysis from 2014. On the other hand, BEREC did not wish to assert that detailed analysis would necessarily lead to it being necessary to define a geographic market in smaller units than the whole country, as the Commission had strongly implied.

834. BEREC considered that detailed analysis of all areas could be difficult in practice for NRAs and could lead to microanalysis, including for PTS, as there were 290 municipalities in Sweden. BEREC considered it clear that there was very little direct competition present between parties on the market in question in Sweden, as parallel fibre networks were generally not deployed in that country. PTS needed to clarify this in its analysis. For this reason, BEREC considered that inadequate indications had been presented by PTS to the effect that direct competitive pressure was not present and that there were no indications that indirect competitive pressure existed to the extent that it was possible to conclude that the whole country was a single geographic market. BEREC further considered that the PTS argument that as Telia pricing was the same across the whole country, it was not necessary to assess other factors. BEREC finally considered that the PTS argument that Telia was the only vertically integrated electronic communications company that provided connections over fibre, applied rather to assessment of significant market power than to geographic definition of markets.

835. The EU Commission confirmed its above specified serious doubts on 7 February 2020 and exercised its veto against the PTS draft market analysis in question.[215]

836. More precisely, the Commission came to the conclusion that the PTS geographic definition was not in accordance with the main principles of competition law and thus not in accordance with the EU electronic communications regulatory framework. The PTS conclusion that there was only the one geographic market had not been adequately argued. Competitive conditions between areas varied with respect to demand-side and supply-side substitutability and to potential competition. PTS therefore needed to conduct detailed research on the geographic market. Telia average market share in Sweden was 37%. A detailed examination had shown that behind the average in question were very high market share in some areas and very low in others. The average in question did therefore not reflect

[215] See Commission Decision of 7.2.2020 pursuant to Article 7(5) of Directive 2002/21/EC (Withdrawal of notified draft measure) – Case SE/2029/2216: Wholesale local access to fibre networks provided at a fixed location in Sweden – C(2020) 619 final.

true Telia market power in the various areas. For this reason, it was necessary to reassess designation of Telia as an undertaking with significant market power, and imposed obligations, in the light of proper geographic definition, as the company did not have the same capacity at all locations to abuse potential significant market power, particularly in areas where the company barely operated on the service market in question.[216] In the same way, the draft underestimated potential market power of other parties to the market in specific areas.

837. In its arguments, the Commission noted among other things that those areas where varying competitive conditions prevailed, could not form the same geographic market. In geographic analysis, the scope of an electronic communications network of the former incumbent shall be taken into account, and whether the potential party with market dominance behaved in the same fashion across its whole operating territory or whether it faced appreciably varying competitive conditions such that its operations were subject to competitive pressure in specific areas and not in others. It was furthermore necessary to demonstrate whether other electronic communications networks or electronic communications services constituted a real alternative to the incumbent's electronic communications network or electronic communications service.

838. As only 37% of fibre connections in Sweden were owned by Telia, and as the company was not present on market 3a in many areas in that country, wholesale access to the company's fibre system would not provide access seekers with the capacity to provide retail service across the whole country. In Sweden, market 3a for fibre connections was characterised by the fact that fibre networks were generally not deployed in parallel and in the vast majority of cases there was thus only one network in place at each location. This meant the access seekers did not have a choice of electronic communications network in most cases. In addition to this, the Commission did not agree with PTS that there was no appreciable price difference in place between Telia and specific local networks. It therefore seemed that the competitive conditions were not sufficiently homogeneous across the whole country to justify a single geographic market.

839. When defining geographic markets, one should use the same criteria as in defining service markets, i.e. take into account demand-side and supply-side substitutability and potential competition. In the opinion of the Commission, competitive conditions seem, with respect to these factors, to be not adequately homogeneous between areas in Sweden. As PTS defined municipalities as the smallest possible geographic unit, the administration had needed to assess these factors within those units. On the basis of that analysis, PTS could have decided the areas in which comparable competitive conditions prevailed.

840. With respect to demand-side substitutability, there was no fibre network with national coverage, and about 63% of connections a national level were owned by operators of local

[216] In subsection 15 on page 15 in the above specified Commission Decision, it states: *"The significant market power analysis has to assess the ability of the operator to behave independently of competitors and consumers. Relevant factors might be inter alia if there are constraints stemming from law or statutory requirements, or* ***if competitive constraints from outside the geographic market would be strong enough to constrain the operators in adjacent geographic markets.*** *In this respect, the municipalities might not be in a position to freely set their prices as they are required to obey to statutory obligations, which generally require to set prices no higher than costs.* ***This might be a sufficient constraint,*** *subject to a detailed analysis."* (PFS emphasis edit)

networks. In many municipalities, there was only one wholesaler, who could provide access in market 3a to a fibre network. In such municipalities, demand-side of the market was different from in areas where more such parties operated. PTS had not succeeded in demonstrating any demand-side substitutability between such areas.

841. With respect to supply-side substitutability, there was only a small proportion of consumers that could choose between service from more than one fibre network. There was therefore no supply-side substitutability available for a large majority of consumers.

842. The Commission furthermore agreed with the BEREC that there was very little direct competition between fibre networks in Sweden and that the PTS should have provided adequate data that demonstrated direct competitive pressure and there was no data about indirect competitive pressure.

843. With respect to potential competition, the deployment of the local networks into neighbouring municipalities where the Telia share was large, was extremely unlikely. Telia possibilities for deployment were however somewhat greater. Parallel deployment of fibre was also in the opinion of the Commission, financially infeasible at many locations. A large majority of the local networks (about 80%) only operated at wholesale level. In such cases, Telia offered retail service by purchasing access from these networks on market 3b, as local networks did not offer access to market 3a (except in exceptional instances in the case of apartment blocks, but never in the case of single dwelling buildings).

844. In the opinion of the Commission, varying competitive conditions therefore prevailed between varying areas in Sweden and should thus in general not belong to the same geographic market. PTS had not succeeded in demonstrating with adequate arguments, why all municipalities in the country should belong to the same geographic market under these circumstances.

5.1.10.6 Estonia 2021

845. On 17 March 2021, the Estonian NRA (ECTRA) notified the EU Commission about market analysis on markets 1 (market 3a in the ESA Recommendation in force) and 3b.[217] The service market on market 3a was considered to cover access service over copper and fibre, and also access to conduits and ducts, and with regards the market 3b to bitstream access over copper networks (32%), fibre networks (43%), and cable systems (23%).[218]

846. With respect to geographic definition of the markets in question, ECTRA conducted a separate analysis on 5 of the country's largest cities (Tallinn, Tartu, Narva, Parnu og Kohtla-Jarve) in order to assess whether competitive conditions were appreciably different in those cities vis-à-vis the rest of the country, at retail level. The conclusion was that the cities Narva

[217] See case EE/2021/2310 and EE/2021/2311, C(2021) 2787 final. The last ECTRA market analyses of the markets in question prior to this one were from 2017, see case: EE/2017/1980 og EE/2017/1981. There were no geographic measures made in those analyses. The Commission did actually endorse these analyses, but commented, among other things on the geographic analysis of market 3b and referred among other things to increased infrastructure competition in larger cities as a result of deployment of cable systems. For this reason, the Commission urged ECTRA to conduct detailed geographic analysis in the next revision, in order to assess whether differentiated geographic markets or varying obligations by area were more appropriate.

[218] At that time, 1% of bitstream services was provided over FWA and 1% with other technical methods.

and Kohtla-Jarve constituted a separate geographic market vis-à-vis the rest of the country on both of the wholesale markets. Telia was designated as an undertaking with significant market power on both markets 3a and 3b, apart from the two above specified cities and obligations were imposed on the company.

847. The EU Commission raised serious doubts about the ECTRA market analysis with respect to definition of the service market, definition of geographic market, three-criteria test on market 3b and about the significant market power designation of Telia, where the doubts about the last two issues are related to faults in the geographic analysis.

848. With respect to the Commission's doubts about the ECTRA draft definition of the geographic market, it was stated that pursuant to paragraph 3 of Article 64 of the Code, NRAs should define the relevant geographic market, such that account was taken at least of the level of infrastructure competition between areas, in accordance with the main principles of competition law. The Commission also reminded that, according to the Commission's SMP Guidelines from 2018, the geographic market shall *first* be comprised of areas where companies offer or request the relevant product or service, *second* shall be where competitive conditions are similar or sufficiently homogeneous and *third* shall be where it is possible to differentiate the relevant area from other areas where competitive conditions are appreciably different.

849. The Commission then referred to similar views that were presented in the Commission Recommendation on relevant markets from 2020 and in the above specified SMP Guidelines. With regards to the question of whether competitive conditions could be significantly different, reference was made to whether the potential significant market power operator behaved in a concerted manner across the whole country or not, or whether he was faced with varying competitive conditions by area, such that his operations were constrained in some areas and in others not.

850. It was then stated in the Recommendation that NRAs should define basic units for the geographic analysis as a starting point for assessment of competitive conditions and on this basis, NRAs should build the first definition of delineation of the geographic market by grouping units together where similar competitive conditions prevailed. NRAs should finally assess competitive conditions from a forward-looking perspective, by taking into account indications that related to market structure and behaviour of parties to the market and should particularly have in mind the importance of competition in infrastructure in accordance with paragraph 4 of Article 64 of the Code. These indications could be in the form of network deployment, number of alternatives networks, market share and its development, local or concerted pricing, the nature of demand and service transfer between networks. The result should then be compared with assessment of demand-side and supply-side substitutability. Significant deviation or heterogeneity in variation of competitive conditions shall be taken into account in a forward-looking manner immediately at the level of geographic analysis. It would also be possible to deal with less striking heterogeneity and variation or with such heterogeneity that is not adequately stable over time, by applying obligations that are more or less burdensome.

851. The Commission also stated that ECTRA had decided to segment two municipalities from the rest of the country that would constitute a separate geographic market. The

geographic market definition appears merely to be based on analysis of retail market share. ECTRA grounds appear to be solely that Telia market share in all other areas than the two cities in question, was higher than 40% to conclude that competitive conditions were homogeneous.

852. The Commission noted that there was a significant difference in market share in retail in three other cities (Tallinn, Parnu og Tartu) vis-à-vis the rest of the country, particularly in Tallinn where two Telia competitors had significant market share. As take-up of regulated access was very low and was dropping in Estonia, apart from access to conduits and ducts, the strong presence of these competitors indicated developed infrastructure competition. As it was clear that infrastructure competition varied significantly in Estonia between areas, it was the Commission conclusion that ECTRA had not adequately argued the conclusion of the geographic analysis. For this reason, it was not possible to exclude that the geographic markets in question in Estonia should be more than two. For this reason, ECTRA should conduct detailed geographic analysis to be able to adequately assess the level of infrastructure competition in the various areas, including with regards to a possible difference between cities and rural areas, and islands.[219]

853. Because of these faults in the geographic analysis, the Commission also raised serious doubts with the 3-criteria test on market 3b, i.e. that it could be fulfilled in all areas.[220] The Commission, furthermore, raised serious doubts about the significant market power designation of Telia because of the faults in question in the geographic analysis.[221]

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[219] Smaller islands off Estonia are for example only served with fixed wireless solutions.

[220] On page 12 of the Commission opinion, it states: *"With regard to the second criterion, i.e., tendency towards effective competition, the Commission stresses that* ***the development towards effective competition does not necessarily require further or "new" entry.*** *As indicated above, the presence of alternative operators in the market seems to suggest that not only entry barriers seem possible to overcome but also that alternative operators have been able to gain substantial market share,* ***therefore bringing dynamics in the market at least in the largest city.*** *The mere fact that Telia´s market share in a broad market is above [...]% and in the area of Tallinn above [...]% is only indicative of potential dominance but does not per se indicate that the market is currently not competitive and that dynamics of the market would not have changed in the market review period."* (ECOI emphasis edit)

[221] On page 13 of the Commission opinion, it states: *"The finding of the significant market power in the draft measure is mainly based on the market share held by Telia on the broad defined central and local access markets. Under established case law, a market shares above 50% gives rise to a presumption of dominance in absence of evidence to the contrary. However, in line with significant market power guidelines, the market shares should be interpreted in the light of the relevant market conditions, and in particular of the dynamics of the market and of the extent to which products are differentiated. Even an undertaking with a high market share may not be able to act to an appreciable extent independently of customers with sufficient bargaining strength. In addition,* ***the fact that an undertaking with a strong position in the market face developing infrastructure competition may well indicate that the market is becoming competitive over time.*** *… The Commission considers that, in light in particular of the insufficiency of the geographic market analysis and likely/potential different competitive conditions across the country, ECTRA has not provided sufficient evidence that Telia holds significant market power in the wholesale local access and wholesale central access markets as defined by ECTRA (i.e., at national scope with exception of the two cities)."*

It is then further detailed on the same page: *"First, and as mentioned above, the information provided by ECTRA suggest that infrastructure competition is relatively developed, at least in some urban areas. In response to the RFI, ECTRA indicated that* ***75% of Estonian households are covered by at least two networks;*** *and 50 to 55% of Estonian households are covered by at three or more fixed networks. While ECTRA has not provided more granular data, it appears as noted above that it is* ***in particular in the area of Tallinn that competitors have been***

854. Subsequent to the serious doubts of the EU Commission, ECTRA withdrew the above specified draft market analysis.

5.1.10.7 Denmark 2021-2022

855. The Danish NRA (DBA) completed its last market analysis of joint markets 3a and 3b late in 2021.[222] The Danish market was said to be characterised by very high employment proportion of very high-capacity networks (VHCNs) in the form of fibre and/or cable systems (DOCSIS 3.1). Deployment of fibre networks had been driven by regional energy utilities[223] which have deployed such networks widely across the country. TDC, the former incumbent,[224] operated first and foremost cable systems, but has also implemented substantial fibre deployment and in some areas, and there has been a race to be the first party to deploy fibre, as parallel deployment of fibre networks in Denmark has been very little, about 1%.

856. DBA segmented two submarkets: On the one hand, the market for high-performance data transfer capacity (fibre and cable systems) and on the other hand the market for low-performance data transfer capacity (copper). The former was geographically segmented, but the latter not. On the market for low-performance data transfer capacity, TDC was designated as an undertaking with significant market power at national level.

857. DBA segmented the market for high-performance data transfer capacity into 21 geographic markets by electricity distribution territories, of which there are 43 in Denmark. For this reason, DBA grouped a number of such areas together in geographic markets. The Administration then conducted significant market power assessment on all these geographic markets.

858. The first DBA investigations of geographic markets led to the conclusion that it was necessary to designate 14 electronic communications undertakings as having significant market power (7 of them vertically integrated and 7 wholesale-only companies), and to impose obligations on them in 17 geographic markets. In 4 geographic markets, active competition was deemed to prevail and thus no electronic communications undertaking was designated there as having significant market power and therefore no obligations were imposed. DBA variously deemed the reason to be that there was little deployment of high-

able to acquire a relatively important and stable retail market shares. *Such a structure of market shares, in a context where alternative operators are not relying, or relying to a very limited extent, on access to Telia´s infrastructure, suggests the economic feasibility of the duplication of infrastructure at least in those areas where there is sufficient demand for broadband services (i.e., in the largest city of Estonia).”* (ECOI emphasis edit)

[222] See Commission Decision in case DK/2021/2346, C(2021) 8890 final. The analysis immediately before that of the relevant markets was from 2017, where the geographic market was deemed to be the whole country, but varying obligations were imposed by area. TDC was designated as an electronic communications undertaking with significant market power across the whole country. In the opinion of the EU Commission, DBA was urged to closely monitor progress in development, particularly in areas where infrastructure competition now prevailed and to review its analysis before its estimated lifetime ended, should this prove necessary.

[223] Most of these parties are wholesale-only companies, but some are or have been vertically integrated and thus have also operated at retail level. Many of the vertically integrated companies have however in recent years, opened their networks and offered wholesale service on these networks.

[224] In 2019, a structured separation was implemented between the wholesale arm of the TDC Group (TDC NET) and its retail arm (Nuuday).

capacity networks, or that no electronic communications company could operate without taking account of competitors, customers and consumers.

859. Subsequent to serious doubts and a phase II investigation by the EU Commission, DBA did however reduce the number of designations of undertakings with significant market power by 4, and also those geographic markets deemed to be non-competitive. The Danish market for very high-capacity networks, which was further researched at wholesale level, is thus composed of 21 geographic markets, where 10 undertakings were finally designated as having significant market power in 13 of these markets. Active competition prevailed thus on 8 geographic markets, which reach 31% of households in Denmark. On 4 geographic markets, the former incumbent TDC has significant market power while on 9 markets it is the local electricity utility that has deployed a fibre network in its own territory and even in neighbouring areas.

860. The main reasons that the market for high-performance data transfer capacity was analysed geographically were first, the deployment of varying networks, second, the difference in market share at retail level between geographic areas, third, varying market share in wholesale and fourth varying retail prices.

861. When assessing significant market power, DBA began by investigating competitive conditions on each geographic market by examining retail share and market concentration (HHI index). In short, active competition was not considered to be present on any of these geographic markets, so it was considered necessary to assess competitive conditions on all of them at wholesale level.[225]

862. Regional variations in price and product offer in Denmark have historical roots, which means one can find a certain heterogeneity in specific areas of Denmark with respect to the retail level. DBA considers it therefore important to begin to identify service offer as a starting point for geographic analysis. In addition to this, the heterogeneous variation was magnified through increased differentiation in wholesale prices after a number of local network operators began to open their networks and offer wholesale service on these networks.

863. As previously stated, DBA based geographic analysis on electricity distribution territories. The reason for this criterion is the existence of local fibre network operators in these areas, as fibre networks in Denmark have mainly been deployed by electronic communications companies owned by electricity utilities that operate solely within a specific territory. There is also the fact that cable systems are first and foremost located in urban areas and thus located within the territory of electricity distribution systems, in part. For this reason, it was considered logical to use such areas, as they were considered stable and reflected competitive conditions in Denmark, and in addition to this the deployment of parallel high-capacity networks is low in that country.

[225] In order to ascertain whether there was competition on the geographic markets in question at retail level, DBA, among other things used the HHI index, which needs to be under 1,500 for there to be prevailing strong competition, 1,500-2,500 indicates moderate concentration and over 2,500 indicates high concentration. The market that comes closest to having strong competition at retail level was Fyn where the index was 2,128. In that case, the largest party had just over 30% market share, the next had just under 30%, the third had 13%, the fourth 12% and others had a total of 15%.

864. As stated above, there are 43 electricity distribution territories in Denmark and the DBA geographic analysis resulted in 21 geographic markets being defined. The main reason for electricity distribution territories being grouped together in a specific geographic market was that certain fibre networks covered more than one electricity distribution territory. The fibre networks in question, result in differentiation with respect to for example wholesale supply, retail price and service offer in retail. Generally, larger and smaller electricity distribution territories were grouped together in a separate geographic market if the electricity utility in the smaller area had not deployed fibre but rather the electricity utility from a larger adjacent area.

865. On each geographic market, DBA discussed the following factors: Which parties offer retail service and their market share, HHI index at retail level, which wholesalers offer service, their network deployment and network topology, their deployment plans, whether they were vertically integrated or wholesale-only companies, development of deployment during the last three years according to technology, parallel deployment of at least two networks, development of deployment by company during the last three years, development of sold units by technology, self-supply and external sales of the last two years and market share in wholesale in the last two years.

866. DBA finally assessed whether any undertaking had significant market power on the relevant geographic markets. With respect to assessment of significant market power, DBA took into account an overall assessment of issues such as market share, business model of the electronic communications companies in question and market structure in the relevant area (for example, a number of households that had the opportunity to connect (homes passed) and the existence of parallel high-capacity networks.[226] DBA also assessed traditional

[226] At this time, 8% of households in Denmark did not have the option of high-capacity network, 68% had the option of one such network, 23% of households had the option of two (of which only 1% had the option of two fibre networks), 1% had the option of three and no one had the option of more than three. DBA defined deployment of parallel infrastructure coverage where a household had the option of connecting to at least two high-capacity electronic communications networks that are operated by at least two independent parties. It is further stated about parallel infrastructure coverage in paragraph 2 in the EU Commission opinion dated 1 February 2022 C(2022) 682 final:
"Regarding parallel infrastructure coverage, DBA bases its assessment on its previous methodology. For the parallel coverage to be the basis for sustainable conditions, it must consist of close to complete parallel coverage. Moreover, DBA considers that ***two closed parallel infrastructures are not, in principle, sufficient to create competition in the retail market.*** *On the other hand, DBA has considered in the past that* ***coverage with two parallel infrastructures, one of which is open on commercial terms, may contribute to the creation of competition in the retail market,*** *as there will be more than two providers of broadband services. However, this requires commercially sustainable access to the open infrastructure for service providers."* (ECOI emphasis edit)
In paragraph 23 in the same document, the EU Commission discusses the DBA conclusion to designate **AURA** as having significant market power and states:
"With respect to the significant market power designation of AURA (market Skanderborg-Odder), DBA highlighted in particular the following elements in its notified draft measure: ***1)*** *AURA has a wholesale market share of around 47%. This market share has increased over the last years,* ***2)*** *AURA covers around 75% of the market with high capacity infrastructure and plans to cover all households in Skanderborg-Odder, including households that already have access to high capacity infrastructure,* ***3)*** *The level of parallel coverage (56%) is not sufficiently high for infrastructure-based competition alone to ensure the proper functioning of competition in the retail market and* ***4)*** *AURA is a vertically integrated company and has no external sales."*
In paragraphs 24 and 25 in the document in question, it is stated that the DBA assessment that despite the fact that AURA planned to open its network for wholesale, this was not enough to ensure active competition on the

criteria in significant market power assessment, such as control of infrastructure that is difficult to replicate, access barriers and barriers to growth, potential countervailing buying power, potential competition, size and strength of parties and vertical integration.

867. As an example of significant market power assessment on one of these 21 geographic markets one can mention Grindsted, which is a small geographic market with something over 4,000 households and a very high level of parallel deployment of networks - about 96% deployment of two networks and 10% deployment of a third network. At retail level, Altibox - that provides retail service on the GEV Fibernet system, which is a local fibre network operator in the area - had 60% market share. TDC had 38.5% market share on its own cable system and others had 1.5% share. HHI index was over 5000. The above provides indications that active competition did not prevail on the retail market and for this reason, this geographic market was examined more closely at wholesale level. At wholesale level GEV Fibernet had 60% market share, TDC 38.5% and others had 1.5%. Despite high market share (60%) and GEV high coverage proportion (97%), DBA considered that the company did not have significant market power in the area in question and deemed therefore that active competition prevailed at wholesale level. As GEV only sold in wholesale to Altibox, the latter company had very substantial countervailing buying power vis-à-vis GEV. It was furthermore taken into account that TDC had extensive deployment in the area (99%) and a relatively high market share (38.5%), which imposed competitive pressure on GEV. GEV was furthermore a wholesale-only company. GEV could thus not operate without taking into account competitors, customers or consumers.[227]

retail market and that the company could thus continue to operate without needing to take into account competitors, customers and consumers. The Commission raised serious doubts about the designation of 5 undertakings as having significant market power, including AURA. DBA subsequently revoked the designation of four of these undertakings with significant market power, but not vis-à-vis AURA. In its opinion, BEREC supported the DBA conclusion and was thus not in agreement with the serious doubts raised by the Commission with respect to this designation. BEREC noted that AURA had by far the most deployment and was a vertically integrated company. In its final decision from 1 February 2022, the Commission waived its serious doubts regarding DBA designation of AURA as having significant market power. The arguments for the changed position were among others that the company's deployment had increased from 75% to about 90% and tended towards full deployment in a short space of time; the company's market share at retail and wholesale levels had increased steadily and were likely to exceed soon the 50% mark, and in addition to this the company had not opened its network. As AURA had however taken the first steps towards opening the network, the Commission urged DBA nevertheless to monitor this market well and possibly to take it for review before the end of the planned lifetime of the analysis, if there were significant changes in price on the market, for example with the opening of the AURA network.

[227] Examples of geographic analysis where DBA came initially to the conclusion in its analysis that there was a case of significant market power are on the one hand Holstebros Omegn and on the other hand Ikast.
In Holstebros Omegn, Jysk Energi (a wholesale-only company) had about 79% market share and Altibox, which is the only purchaser on the Jysk network, had the same share at retail level. Parallel coverage was only 9%.
In the case of Ikast, Energy Ikast Fibernet had about 67% market share and 91% coverage proportion. The company is a wholesale-only company and despite this, only Altibox purchased wholesale access from that company. Parallel coverage was about 58%. After the serious doubts raised by the EU Commission, which will be further explained here below, DBA on the other hand, decided not to designate Energy Ikast as having significant market power, which means that there is then considered to be active competition in the area in question at wholesale level.

868. Instead of imposing obligations on 4 parties that were designated as having significant market power, DBA required them to offer binding commitments.[228] DBA then planned in its draft to impose obligations on 10 electronic communications undertakings, of which 7 were wholesale-only companies. The obligations that it was planned to impose on the wholesale-only companies were access obligations (M3b access on 5 of them and M3a access on 2 of them),[229] obligation for non-discrimination and obligation for fair and reasonable price.[230] On the 3 vertically integrated companies, i.e. AURA, BornFiber and Nef Fiber, obligations were imposed for access, non-discrimination, transparency and price control.[231] AURA was to provide M3b access, BornFiber mainly M3b access and to some extent M3a, for example in areas enjoying state aid, and Nef Fiber was required to provide M3a access.

869. As previously stated, the Commission raised serious doubts about the draft in December 2021. The doubts concerned five geographic markets that DBA had defined and concerned the designation of undertakings with significant market power and the three-criteria test.[232] The main content of the Commission notes on DBA significant market power assessment in this area can be summarised in the following points:

i. In all five markets, the proportion of parallel network coverage was over 40% and in three of them it was almost or even over 60%.[233] In addition to this, many of the companies had ambitious plans for deployment, and they all aimed to finally connect to all dwellings in their areas. These were all utility companies that deploy fibre.

ii. The Commission did not agree with the DBA position that the offer of the wholesale companies in question on commercial terms (they were all wholesale-only companies, except one i.e. AURA), was contrary to commercially sustainable

[228] The companies involved were EWII, Fibia, Norlys and TDC. In the case of TDC these were more specifically binding commitments on 4 geographic markets, including in the Copenhagen area. The commitments were made binding for 5 years, except in the case of EWII, where they were in force for 3 years. This means that traditional obligations pursuant to market analysis are not in force on the largest geographic markets in Denmark, but rather binding commitments.

[229] Energi Ikast and Jysk are the companies that shall provide M3a access, and this is the access that they have provided and in the opinion of DBA it would not have been consistent with proportionality to oblige them to provide M3b access.

[230] In sub-paragraph 14 in the Commission opinion from 1 February 2022, there is a description of what DBA said about fair and reasonable price: *"In order for prices to be classified as fair and reasonable, the SMP has to be able to document upon request from DBA that the prices are based on cost recovery with fair return on investment."*

[231] AURA was to calculate its prices in accordance with the maximum average price from a LRAIC model. BornFiber and Nef Fiber were to use the maximum average price in accordance with the fair price's principle. In sub-paragraph 18 in the Commission opinion, the following are said about this matter: *"For BornFiber and Nef Fiber, DBA considers that though LRAIC would in theory be relevant, it would be disproportionate to impose it on these operators due to their small size and to the excessive burden it would represent for them. Therefore, DBA will set maximum prices to be respected by these operators on the basis of one or more comparable prices in comparable markets in Denmark or abroad."*

[232] This concerned a geographic market where DBA planned to designate AURA, EWII, Energi Ikast, MES Fiber and Nord Energi as having significant market power.

[233] In all instances, the other infrastructure options were cable systems, as parallel deployment of fibre networks is very limited in Denmark.

access and for this reason it had been necessary to designate the undertakings as having significant market power and to impose obligations on them.[234]

iii. With regards to the designation of the 5 undertakings as having significant market power, the Commission said that when one considered certain factors, it had not been demonstrated that these companies could behave without taking into account competitors, customers or consumers. These factors were in the first case, significant and growing deployment of parallel coverage networks, secondly competitive restraint at retail and wholesale levels resulting from cable systems (particularly where cable networks are open at wholesale level), thirdly the positive competitive impact of open offer of fibre in wholesale and finally potential countervailing buying power.[235]

870. The EU Commission also commented on the DBA implementation of the three-criteria test in the five geographic markets in question. With regards to the first condition (substantial and non-transitory access barriers), the Commission noted that in at least some of the geographic markets, competitors of the party where the DBA planned to designate as having significant market power could compete in a successful manner at retail level (and even at wholesale level) without obligations on the parties in question. The DBA grounds for there being substantial and non-transitory access barriers being in place on some geographic markets, is not argued adequately. With regards to the second condition (the market type does not tend towards active competition), the Commission noted that development towards active competition did not necessarily require further deployments by those parties already operating or deployment by a new party. Competitors of the party that DBA planned to designate as having significant market power had been able to achieve significant market share and thus created a competitive dynamic on the markets in question.

871. The Commission finally noted in its discussion on the three-criteria test, which also relates to significant market power assessment, that the simple fact that market share of these parties at wholesale level was high, was not on its own an indication that competition

[234] In paragraph 34 in the Commission opinion, the following is said about this matter: *"The Commission also noted the importance of wholesale opening of many fibre networks. In that regard, the Commission recalled that the Code puts a strong emphasis on the importance of NRAs to appropriately take into account and encourage the development of cooperative arrangements and agreements. As highlighted in Recital 170 of the Code and in the Explanatory Note to the 2020 Recommendation on Relevant Markets, such arrangements and agreements are likely to become more common in the near future and should be taken into account by NRAs when assessing the competitive dynamics of a particular wholesale market.* ***If such agreements have been entered into on a lasting basis, are sustainable and improve competitive dynamics, they can contribute to the conclusion that a particular wholesale market does not warrant ex ante regulation.****"* (ECOI emphasis edit)

[235] In paragraph 36 in the Commission opinion, the following is said about this matter: *"In particular, the Commission considered that DBA did not demonstrate, based on the analysis of the wholesale offers proposed by the different operators, why the proposed terms and conditions would not be fair and reasonable, or sustainable. Moreover, the Commission took note that TDC will continue to provide access to its fibre and cable networks covering the non-significant market power part of its footprint. As a result, the Commission observed that in some geographic markets,* ***there will be a significant part of households that will be covered by <u>two networks that are open at wholesale level</u>.*** *This is the case in particular in the market in which Energi Ikast would be designated as significant market power, where* ***49%*** *of households have access to both fibre-network (with one service provider), as well as a cable network that is open for external wholesale."* (ECOI emphasis edit)

did not prevail at retail level and that competitors of these parties could not create a competitively positive result.

872. On 1 February 2022, the Commission withdrew its serious doubts about the DBA draft after a detailed investigation. This withdrawal was however, on the one hand the result of DBA having withdrawn the designation of 4 of the 5 parties with significant market power and the imposition of obligations that had been planned in the DBA draft. On the other hand, the Commission accepted the arguments and additional information from DBA and the BEREC opinion in the case of AURA and withdrew its serious doubts with respect to implementation of the three-criteria test and significant market power assessment on the company.

873. DBA came to the conclusion on the basis of a phase II investigation by the Commission, that parallel network coverage was an important variable for deciding whether to designate undertakings with significant market power and that this variable could have an impact on other variables in the significant market power assessment.

874. The Commission discussion indicates two recent criteria in this connection, i.e. the 40% distribution of parallel network coverage indicated that deployment is significant, and 60% deployment indicates that deployment is very significant. DBA nevertheless notes that one must respect the power of decision of NRAs and that an independent assessment must be made in each instance of whether parallel network coverage sufficiently changes competitive conditions or not, for example by investigating service migration between electronic communications networks at retail level. One needed furthermore to take into account free commercial wholesale offers when conducting the three-criteria test, in order to verify whether there are in reality systemic access barriers that can only be surmounted with wholesale obligations.[236]

5.1.10.8 Czech Republic 2023

875. On 1 June 2023, the Czech Republic NRA (CTÚ) notified a draft market analysis of markets 1/2020 (market 3a in the ESA Recommendation from 2016) and 3b to the EU Commission.[237]

876. In May 2022 CTÚ had notified the EU Commission of a draft market analysis of the wholesale markets in question.[238] CTÚ geographic analysis at that time led to 6396 geographic

[236] This is further discussed on page 17 in the BEREC Report on competition between multiple competitors in next generation access networks in the same geographic area from June 2023: *"Data is essential for both aspects and in order to even prove the presence of differentiated competitive conditions. DBA had to revise its entire approach to data and the quality of its data. DBA now has a system with data on coverage, wholesale and retail data at the household level that allows DBA to flexibly aggregate data and to test various hypothetical scenarios. DBA also conducts retail price data gathering every month for every service provider across all networks and on every geographic sub market, allowing DBA to closely monitor the conditions."*

[237] See EU Commission Decision dated 30 June 2023 in case CZ/2023/2443, C(2023) 4594 final. The last CTÚ market analysis of the markets in question was from 2017, see cases: CZ/2017/1985 and CZ/2017/1986. Then the CTÚ came to the conclusion that the geographic markets were the country as a whole in both instances. The Commission did not raise serious doubts about those analyses but encouraged CTÚ to conduct detailed geographic analysis in the next review in order to assess whether increased heterogeneous variation in competitive conditions at retail level would justify segmented geographic markets or varying obligations by area.

[238] See cases CZ/2022/2372 and CZ/2022/2373.

units being identified at retail level, where administrative units were the reference. Geographic units were divided into two categories. Segment A comprised 5859 geographic units. CTÚ considered that conditions in the units within the category resulted in active competition and no undertaking was designated as having significant market power. In this category were at least two parallel networks with at least 50% deployment, and in addition to this there was no company with a higher share than 50% at retail level. Segment B contained 510 geographic units where active competition was considered not to prevail. In most of them the same company was operating that historically had had significant market power. In market 1, the CTÚ planned to designate CETIN[239] and 7 local electronic communications undertakings with significant market power on specific geographic markets. CTÚ then planned to come to the conclusion that the three-criteria test was not fulfilled on market 3b and therefore intended to deregulate that market.

877. In June 2022, the EU Commission raised serious doubts about the draft decision as the Commission felt that data was lacking that supported delineation of geographic units and designation of undertakings with significant market power. The Commission's grounds were as follows:

i. **With respect to definition of geographic markets:** The Commission criticised the differentiation of categories A and B, as the party that historically had significant market power had operations on almost all of the markets identified and maintained the same pricing at retail level in all its operational territories and no price difference had been identified between categories A and B. The Commission said that it was normal that if the other companies did experience competitive pressure, they would apply lower pricing where active competition was considered to prevail. The Commission, furthermore, criticised the small size of geographic units as CTÚ had not provided proof for stability of the markets in the draft decision, as loopholes in deployment conditions could result in a local network operator or a party new to the market being quickly deemed as having significant market power.

ii. **With respect to designation of undertakings with significant market power:** The Commission considered that smaller network operators in the Czech Republic that served only small areas, even if they did not have significant market power, could operate to a large extent without regard to their customers. The Commission also stated that stable market share within geographic units was an indication of successful competition, and in addition to this, a new party could surmount access barriers within a specific time frame. The smaller the units that were defined geographically, the less stable would designation of undertakings with significant market power become. One could thus view obligations on companies that did not have a historical position of being a party with market dominance, as punishment for successful commercial methods, which had a limited impact on active competition.

[239] CETIN is the former Czech Republic incumbent. In 2015, CETIN conducted structural separation on its own initiative, where CETIN is the wholesale unit and O2 the retail unit of the group.

iii. **With respect to the three-criteria test on market 3b:** The Commission considered that CTÚ had not provided adequate proof that the three-criteria test on market 3b had been fulfilled.

878. Subsequent to the serious doubts expressed by the EU Commission, CTÚ withdrew its above specified plans from 2022. As stated above, CTÚ notified a new market analysis to the Commission on 1 June 2023.

879. In the new draft, CTÚ segmented at retail level 347 geographic units in segment A, where active competition was deemed to prevail,[240] and 42 units in segment B where active competition was considered not to be in place. The same was then applied at wholesale level.

880. In order to segment the competition area (segment A) CTÚ used as a first step two criteria, where one of them need to be fulfilled for at least 3 years. On the one hand that the CETIN market share was not higher than 25%, and on the other hand that the combined deployment of alternative electronic communications networks (copper, fibre, cable systems, fixed wireless access network or specified 4G/5G mobile network service) was more than 75% and that CETIN market share was no higher than 50%. In the opinion of CTÚ, it is not possible to allow for competitive problems in such areas.

881. CTÚ justified its geographic definitions by pointing out that the Czech Republic market was characterised by a large number of electronic communications companies that operated their own access networks. This led to very substantial deployment of varying technical solutions, and many of them served only small areas with their own access network.[241]

882. For further analysis in geographic markets at wholesale level, the 42 units grouped under segment B at retail level were examined in more detail. CTÚ then identified homogeneity in competitive conditions in all 42 units, with respect to various factors, such as deployment of the various networks, based on a variety of technical solutions, deployment of CETIN networks and of the competitors, market share of CETIN and competitors, overlap of

[240] In footnote 12 in the EU Commission opinion from 30 June 2023 it states: *"In the answer to the RFI, CTÚ provides a simulation and the ultimate list of those geographic units which would fulfil the criteria of segment A relative to market share of CETIN and combined coverage of OLOs with including into the criteria of coverage by OLOs only coverage by those OLOs who provide WLL coverage with download speed which is equal or faster than 30 Mbps. Such simulation provides a view mirroring the speed which is relevant under the definition of a high-speed electronic communications network (30 Mbps) pursuant to Article 2(3) of Directive 2014/61/EU … on measures to reduce the cost of deploying high-speed electronic communication networks … CTÚ concludes that if the speed of 30 Mbps was taken as a basis for calculation of coverage by OLOs, then from the group of 347 units belonging to segment A, only 12 units would have to be requalified as belonging to non-competitive segments B."*

[241] On pages 5-6 in the EU Commission opinion from 30 June 2023 it states further on this: *"Given the CTÚ´s observation that competition on the Czech retail broadband market is mainly based on infrastructure competition stemming from regional but mostly local alternative operators operating different technologies or networks, CTÚ chose administrative geographic unit of Type II as most suitable for its analysis representing areas of 389 geographic units, rather than geographic unit based on the footprint of incumbent´s network, given the very limited use of LLU in the Czech Republic. CTÚ considers that definition of geographic markets with less granularity means more stable market conditions if compared to municipality level notified previously. CTÚ observes that especially FTTH/B and CATV networks are available in bigger cities or towns and not in smaller towns or villages."*

networks of CETIN and competitors and the number of operators with their own electronic communications networks.

883. No undertaking was designated on market 1 (market 3a) as having significant market power in the 347 geographic units belonging to segment A.[242] Of the 43 geographic units belonging to segment B, CETIN was designated as having significant market power in 33 of them, on the relevant wholesale market. No electronic communications undertaking was designated as having significant market power in 9 geographic units that were examined at wholesale level. Among the influencing factors were the presence of a strong competitor and parallel network coverage. In addition to this, CTÚ assessed market share of CETIN and competitors, control of infrastructure that was difficult to replicate, technical dominance, potential competition, size and strength of companies, access to capital, price and profitability and vertical integration.

884. CTÚ came to the conclusion that the three-criteria test was not fulfilled on market 3b and therefore did not designate any undertaking as having market power on that market.

885. In the 33 geographic units in question on market 1 (market 3a), CTÚ imposed all possible obligations on CETIN, i.e. access obligation, non-discrimination obligation, transparency obligation, obligation for separation of accountancy, operation for price control and an ERT test. It was also prescribed that prior obligations should apply for 12 months in those areas that were being deregulated, so that access seekers had sufficient latitude to renegotiate on commercial terms or go elsewhere.

886. On 30 June 2023, the Commission issued a Decision in the case. It was stated there with respect to analysis of geographic markets that in future review of geographic analysis, CTÚ should consider even more precise analysis in large cities in order to assess whether competitive conditions were sufficiently homogeneous within larger units to be able to be deemed a geographic unit. In the light of this, the Commission urged CTÚ to closely monitor the market development.

5.1.10.9 Croatia 2023

887. With its opinion dated 14 July 2023, the EU Commission discussed the draft market analysis of the Croatian NRA (HAKOM) on markets 1 (market 3a in the ESA Recommendation in force) and 3b.[243]

888. It was stated that since the last analysis, important developments had taken place on the retail market for broadband service in Croatia. Investments in very high-capacity networks (VHCNs) had commenced, and in July 2021, such high-capacity networks reached 51% of households. These were both new fibre networks and upgrades of cable systems. The

[242] For this reason, 89% geographic units where 95% of Czech Republic inhabitants lived, were deemed to be areas with active competition.

[243] See case no. HR/2023/2450 and HR/2023/2451, C(2023) 4918 final. The last HAKOM market analysis of the markets in question was from year 2019, see cases: No. HR/2019/2164 og HR/2019/ 2165, C(2019) 4452 final. In that analysis, the geographic market was considered to be the whole country and nor were obligations variously burdensome by area. HT group was designated as an undertaking with significant market power and obligations were imposed on that company.

deployment of such high-capacity networks varied however very significantly between urban and rural areas.

889. HAKOM came to the conclusion that the service market for broadband service at retail level should be segmented into two markets, i.e. on the one hand for small capacity (copper, mobile networks and FWA, and on the other hand, for very high-capacity networks (fibre and cable systems). Apart from the variation in speed, the networks on these two markets provided, reference was made, among other things to retail prices which varied considerably between these two categories. This differentiation between service markets was also decided on the wholesale markets in question. On market 1, access through mobile network and FWA were however not considered to belong to that wholesale market, only service over copper. On market 3b access through FWA was not on the other hand considered to belong to that wholesale market.

890. The market for low capacity on the wholesale market in question was considered to be the whole country.

891. HAKOM however, segmented the market for very high-capacity networks on the retail markets in question, into two parts, i.e. on the one hand, a competitive market and on the other hand a market where competition did not prevail. This conclusion was based on a detailed geographic analysis.

892. HAKOM initially divided Croatia into 572 geographic units that reflected municipal boundaries[244] and cities,[245] except for Zagreb which was divided into 17 districts. To be deemed a competitive market, a geographic unit had to fulfil all of the following conditions:

1. There must be at least one HT competitor that operates its own high-capacity network.

2. The competitor's network needs to reach at least 33% of households.

3. HT market share in retail is under 50%.

893. 72 geographic units fulfilled the above specified conditions and were therefore grouped together as being competitive markets, while 500 geographic units did not fulfil the conditions and were then deemed to belong to the market where competition did not prevail. HAKOM will update this sorting into two categories two years after a final decision has been reached and it will be based on the same conditions as described above.

894. On the market for low-capacity on market 3b, HAKOM conducted a three-criteria test and deemed that its conditions were fulfilled, and therefore considered it necessary for obligations to apply in that part of the market. The same applied to the part of the market in question for very high-capacity networks, where little competition was considered to prevail. HAKOM on the other hand considered that the test was not fulfilled in the part of this market where competition was deemed to prevail. HAKOM designated HT as having significant

[244] There are 428 municipalities in Croatia, which have significant autonomy, and were said to be normal, economic and social units in that country.

[245] In Croatia, cities are defined such that there need to be at least 10,000 inhabitants and they must have considerable autonomy and are also considered to reflect normal, economic and social units in the same manner as municipalities in that country. There are 127 such cities in Croatia.

market power on market 1 and market 3a on markets for low capacity, and also on those parts of the wholesale market in question for very high-capacity networks where little competition was considered to prevail, and it imposed appropriate obligations on the company.

895. The EU Commission raised no objections to the HAKOM market analysis in other respects than to the HAKOM plan to review those areas that were grouped under each individual geographic category two years subsequent to making a final decision, did not need to be submitted to national consultation and to consultation with the Commission and with other NRAs within the EU. The Commission therefore urged HAKOM to change this plan and to initiate consultation on this update.

5.1.10.10 Norway 2023

896. On 14 June 2023, the Norwegian NRA (NKOM) initiated national consultation on a new market analysis of markets 3a and 3b, which was to be open until 15 September 2023.[246]

897. NKOM plans to merge markets 3a og 3b to a single market that only covers connections with very high-capacity networks (fibre, cable systems and specific mobile network solutions over 4G/5G). As connections over copper systems have decreased significantly and as Telenor has been phasing out that system, to be finally completed at the latest in September 2025,[247] connections over copper systems were not considered to belong to the relevant market, nor to related retail markets. For the above reasons, NKOM did not consider there to be a need to specially analyse a market for connections over copper.

898. The Administration conducted a three-criteria test, despite the fact that the ESA Recommendation in force on the relevant markets from 2016 does not allow for this. The conclusion of the test was that the conditions were fulfilled.

899. NKOM now plans to segment 22 geographic markets,[248] where the Administration considers that active competition does not prevail in 12 of them while there is active competition in 10. Of these 12 geographic markets, NKOM plans to designate 9 undertakings as having significant market power and to impose appropriate obligations on them.

900. This means that it is expected that the NKOM conclusion will be that Norway is no longer one geographic market on the wholesale markets in question and that it is therefore necessary to conduct geographic analysis of homogeneity and variation in competitive conditions between counties, between varying areas within counties and between

[246] The NKOM market analyses in force on the relevant markets are from 2018. The markets in question there were considered to cover the whole country and no geographic measures were taken.

[247] In the beginning of 2019, Telenor notified quick phasing out of the copper system in Norway and initially planned to complete this project at the end of 2022. At the end of 2022, the proportion of copper connections on the household market had fallen below 1% of the total number of broadband connections on the Norwegian retail market. Since the final Decision regarding this market analysis is not expected until the summer or the autumn of 2024, it is clear that there will only be about one year from that time until the copper system in question will finally be decommissioned in Norway.

[248] As there is a total of 356 municipalities in Norway, there was an average of more than 16 municipalities grouped together in each geographic market, i.e., from 5 municipalities in the least populous geographic markets to 44 in the most densely populated.

municipalities, in order to define the final geographic boundaries of the market in question. The Administration applies a staged procedure in this differentiation process. NKOM assessed which unit should be the starting point (base unit) for definition of competitive conditions by area. The Administration next identified competitive conditions in the geographic units in question. NKOM finally grouped geographic units together on the basis of analysis of competitive conditions.

901. NKOM used municipalities as starting point (base units) for the geographic analysis, and there are 356 of them in Norway.[249] In the light of this large number of municipalities, assessment of competitive conditions in the municipalities was conducted within a frameworks of regions, of which there are 11 in Norway and which increased to 15 at the beginning of 2024.[250] At the regional level, NKOM maps access networks that were in place in each municipality, their deployment with the various technical solutions and how market share was divided between them in the municipalities. In an Appendix to the analysis, a description is then given of development in network deployment and market share in recent years, along with discussion on changes that have taken place in connection with the parties that offer services.

902. It was also stated that assessment of competitive conditions in municipalities provided a basis for grouping municipalities together into one geographic market where sufficiently homogeneous competitive conditions are considered to prevail that vary from competitive conditions in adjacent or nearby municipalities. Despite the fact that this assessment is conducted at a county level, there were however a number of instances where municipalities in different counties formed the same geographic market if competitive conditions were sufficiently homogeneous to justify this.

903. NKOM mapped the electronic communications networks of companies that operate access networks on the markets in question in all municipalities in Norway with the above

[249] NKOM considered that despite the fact that geographic analysis of competitive conditions using municipalities as a starting point, required many staff and was time-consuming, it considered that it could be done. Municipality boundaries were clear and reasonably stable. Despite the fact that there could be some difference in competitive conditions within the municipalities, NKOM considered that this should not prevent them being used as the starting point for geographic analysis. In a special pre-consultation on methodology for geographic analysis in the year 2022, NKOM proposed to use geographic units that were larger than municipalities, yet smaller than counties. When conducting geographic analysis, it proved however difficult to delineate such areas and this was discontinued.

[250] When assessing and selecting units to provide a basis for geographic analysis, NKOM also assessed regions (5 in total), counties (11, but become 15 at the beginning of 2024), postcodes (over 6,000), telephone exchange areas (19) and distribution territories of energy utilities. In the opinion of NKOM, it was clear that it would not be possible to use the 5 regions in question as a basis for geographic analysis. There was no clear difference between them in competitive conditions or market structure. With respect to the 11 counties (or 15 after the turn of the year 2023/2024), NKOM considered them not to be suitable despite it being possible to identify some difference in competitive conditions between them, as NKOM analysis showed greater variance in competitive conditions within these areas than between municipalities. The same could be said about telephone exchange areas, which were to a large extent based on county boundaries. With respect to postcode areas, it came to light that because of the enormous number of postcodes, it would not have harmonised with proportionality to base the starting point for geographic analysis on them, as such analysis would have been enormously expensive in staff time. With respect to distribution areas of energy utilities, NKOM considered it not to be an option to use them as a starting point, as was done in Denmark, among other things because these areas varied greatly in size, structure varied greatly, energy utilities differed greatly by area and had very varied business models. For this reason, it was considered that competitive conditions differed very significantly between many of these areas.

specified three technical solutions, and also their deployment and market shares. In addition to this, NKOM examined development of deployment of networks and market share in recent years, along with behaviour of parties to the market and the changes that had taken place with network operators. These factors were used as a basis for assessment of stability of markets and of market conditions, both in individual municipalities, in neighbouring municipalities and in the country as a whole, in a forward-looking manner.

904. The purpose of conducting such analysis of competitive conditions at municipality level, within geographic analysis at county level, was said to be to form as good a basis as possible for grouping municipalities - where sufficiently homogeneous competitive conditions prevailed - into a separate geographic market which differed from those competitive conditions that prevailed in other geographic markets.

905. NKOM said that when analysing competitive conditions, it had used the criteria stated on page 19 in the working document to the EU Commission Recommendation on relevant markets from 2020, i.e.:

- Number of competing networks.
- Distribution of market share.
- Behaviour of parties to the market and potential supply-side substitutability.

906. NKOM states that in addition to the above specified three criteria there is also a mention in the working document about price difference being a potential indicator that can be used when grouping geographic base units in geographic markets. The Commission had however made certain reservations on using this criterion. For this reason, NKOM had chosen not to use the criterion as an indicator in this categorisation.

907. In accordance with the above, the NKOM analysis of competitive conditions was based on the number of competitive networks at the municipality level and in neighbouring municipalities. In addition to this, network deployment by network operators had been analysed and an assessment made of the level of clear and stable boundaries in the development of fibre networks or local/regional network operators or of fibre networks of parties that operated at various locations across Norway in varying areas in each county. In addition to this, NKOM had mapped market share of network operators and assessed distribution of market share at municipality level when analysing each individual county.

908. NKOM also noted, with respect to behaviour of parties to the market and potential supply-side substitutability, that continuing fibre deployment and competition that this brought, could in the coming years result in supply-side substitutability across municipality boundaries and the varying areas within counties and between counties. The competitive status in Norway is now characterised by about 100 local, regional network operators of fibre networks or network operators that operate fibre networks here and there across Norway and that often did not operate within clear and stable areas. On page 21 in the above specified Commission working document, it was stated that geographic analysis had normally led to geographic markets being variously divided into a geographic market where competition prevailed or a geographic market where competition did not prevail. In the opinion of NKOM,

it was not possible to draw such a clear line with geographic definition of the Norwegian market.

909. The possibility of supply-side substitutability could vary between areas. As a mixture of fibre networks operated by local/regional parties, and fibre network parties who operate here and there across Norway, and a mixture of parties that operate cable systems and/or the above specified mobile network solutions, exist in various locations in Norway, there are more parties who could increase their deployment during the planned lifetime of the analysis such that they would enter areas that up to this point in time had had little or no such deployment. NKOM also refers to discussion in the above specified Commission working document, where it was stated that analysis of supply-side substitutability between areas would probably become an even more important factor in the methodology applied by the NRAs in geographic analysis and would support it becoming more important from the point of view of a forward-looking approach. NRAs should therefore take potential deployment of high-capacity networks into the calculation by observing a variety of indicators.[251]

910. It was stated by NKOM that the existence of local/regional network operators, and of operators that operated here and there across Norway, meant that during the last 10-15 years, competitive conditions in most of the country's municipalities were characterised by the fact that small and medium fibre network operators had increased their market share by offering consumers that had previously used the Telenor copper network, access to their fibre networks. These fibre operators had deployed their fibre networks, step-by-step in accordance with demands. The development of fibre roll-out had thus been based on a sell first, build afterwards methodology. Operations will not be commenced in a new area before a certain percentage of households had made an agreement with the network operator in question on purchasing access to the fibre network in question. Many of these fibre networks had been owned by local/regional energy utilities and by one or more municipality. These networks were therefore for some considerable time deployed within the operational territories of these parties. In recent years, many of these networks have expanded into neighbouring municipalities and outside the operational territory of the energy utility in question or beyond the boundaries of the municipality in question that owned and operated the relevant network.

911. The Telenor decision at the beginning of 2019 to phase out the copper system fairly rapidly, or prior to the end of 2022,[252] had led to acceleration of Telenor fibre roll-out and that of other fibre operators in Norway. During the period 2019-2022, all the customers on the Telenor copper network had received an offer from Telenor or from other network operators for access to fibre network, cable system or the mobile network solution in

[251] On page 21 of the working document in question it states: *"Analysis of supply-side substitutability, however, is likely to be an important factor in NRAs´ approach and contributes to make it more robust from a forward-looking perspective. It refers to the ability of alternative suppliers to enter the geographic market in question to a price increase. NRAs should therefore take into account the potential for deployment, using a range of cumulative indicators. These can include the presence of an alternative network in a neighbouring area or of an alternative network in the area considered that does not yet reach end-users´ premises. They can also include indicators of a favourable business case, such as a high population density or a low market share of the potential significant market power operator. NRAs may combine these indicators with roll-out plans from network operators, especially if such roll-out is already underway."*

[252] Which has now been extended until September 2025 at the latest.

question, as a replacement for access to the copper network. The Telenor electronic communications network thus no longer had national coverage, as had been the case before. The Telenor network (fibre, cable system or mobile network solution in question), covers however most Norwegian municipalities today.

912. Both small and large fibre operators in Norway still had plans to expand and NKOM had no information to the effect that any of them had notified the contrary. This particularly applied to the enlargement in areas where no fibre network was previously in place. Decisions of these parties to commence roll-out in areas where a fibre network was already in place were however dependent on detailed commercial and operational assessments. During recent years, there were thus some examples of parallel fibre network coverage being developed.

913. In the autumn of 2022, the American investment fund KKR[253] and a large Norwegian pension fund purchased holdings in the Telenor fibre network. NKOM considers that this investment is important for Telenor to finance the company's continued fibre roll-out. There are also recent examples of mergers of local/regional fibre networks in Norway and/or external investments in such networks. There were also some municipalities and/or energy utilities that had plans to sell their fibre networks. This could indicate that concentration on the market would continue and that the competitive dynamics would continue to be significant.

914. With the above in mind, NKOM considered that potential supply-side substitutability at municipality level, with a forward-looking methodology, should be part of the process that constituted the grouping of municipalities in the relevant geographic markets.

915. When grouping municipalities into the relevant geographic markets, NKOM considered there to be reason to separate areas where the presence and strength of parties to the market varied depending on whether they were a small local network, medium-sized area network or large network that covered a large part of Norway. Competitive conditions in areas where small or medium-sized network operators that operated locally or regionally and that had paved the way in fibre roll-out, without much competition from Telenor or other network operators that operated in the largest part of Norway, were often different from competitive conditions in urban areas which were characterised rather by competition between a number of network operators. In practice, it had proved difficult to draw clear and stable boundaries between municipalities or areas in the countryside where competition was characterised by the former market conditions and market conditions that increasingly were characterised by competition between these local or regional small or medium-sized parties on the one hand, and on the other hand, of large parties that operated in a large part of Norway. Despite this, NKOM felt it was important to keep this in mind when grouping areas into geographic markets, which was based on analysing homogeneity of competitive conditions between varying municipalities or areas of the country.

916. In short, NKOM considered that it would be possible to group municipalities on the Norwegian market into 6 categories by competitive conditions:

[253] KKR is one of the world's largest infrastructure investment funds.

1. **Competitive conditions are characterised by a number of large access providers** that operate at various locations across Norway, where the largest competitors of the party with the highest market share are one or more of the group of these large access providers. The composition of these parties is the same across municipalities within these geographic markets, though the division of market share can vary between them (41 municipalities where 37% of Norway's inhabitants live).[254]

2. **Competitive conditions are characterised by one large access provider** that operates widely across Norway or by one medium to large regional access provider, where the largest competitors are one or more of the group of large access providers that operate at various locations across Norway. The composition of these parties is the same across municipality boundaries within these geographic markets, though the division of market share can vary between them (45% of Norway's inhabitants).[255]

3. **Competitive conditions are characterised by several medium to large regional access providers**, where the largest competitors are one or more of the group of large access providers that operate at various locations across Norway. The composition of these parties is the same across municipality boundaries within these geographic markets, though the division of market share can vary between them (5% of Norway's inhabitants).[256]

4. **Competitive conditions are characterised by one medium to large regional access provider**, where the largest competitors are one or more of the group of large access providers that operate at various locations across Norway. The composition of these parties is the same across municipality boundaries within these geographic markets, though the division of market share can vary between them (3% of Norway's inhabitants).[257]

5. **Competitive conditions are characterised by many small local access providers**, where the largest competitors are one or more of the group of large access providers that operate at various locations across Norway. The composition of these parties is the same across municipality boundaries within these geographic markets and it is

[254] This applies to the geographic markets Oslo area, Akerhus- and Östfold area and Trondheim area. Active competition is considered to prevail in the 3 geographic markets in question, and they include 41 municipalities. There are therefore no plans to designate any undertaking as having significant market power in these geographic markets.

[255] This applies for example to Bergen area, Stavanger area and Kristiansand area, along with 7 other geographic markets, where there is a total of 161 municipalities. In all of these 10 municipalities it is considered that active competition is lacking, and it is therefore planned to designate an undertaking as having significant market power in all of them.

[256] This applies to the geographic market Möre and Romsdal, where there are 25 municipalities. Active competition is considered to prevail on the market in question and there are thus no plans to designate an undertaking as having significant market power.

[257] This applies to 2 geographic markets, where there are 29 municipalities. On this geographic market it is considered that active competition does not prevail, so the intention is to designate an undertaking with significant market power in both of them.

difficult to draw clear and stable boundaries between municipalities in the county in question (6% of Norway's inhabitants).[258]

6. **Competitive conditions are characterised by many varied access providers,** where the largest competitors are one or more of the group of large access providers that operate at various locations across Norway. The composition of these parties is the same across municipality boundaries within these geographic markets and it is difficult to draw clear and stable boundaries between municipalities in the county in question (4% of Norway's inhabitants).[259]

917. On the basis of the above specified geographic definition of markets, NKOM performed significant market power assessment on all 22 geographic markets. Market share was the starting point for significant market power assessment, where a high and stable market share over a period of time could be a strong indication of significant market power status. The Administration also took account of the following factors:

- Network deployment, parallel coverage and control of facilities that are difficult to duplicate.
- Size and strength of companies.
- Vertical and horizontal integration.
- Potential competition.
- Countervailing buying power.

918. The planned NKOM conclusion is that an SMP operator will be designated in 12 of these 22 geographic markets. The SMP operators will then be 9 in total, which means that there will be some examples of the undertaking party being designated in more than one market, should the plans be realised. On 10 geographic markets it is therefore considered that active competition prevails and thus no intention to designate an undertaking as having significant market power on those markets, and it is thus expected that they will be deregulated.[260]

5.1.10.11 Summary

919. Taking into account the above descriptions of recent market analyses in 9 EEA states that were conducted in the years 2019-2023 after the Code came into force, it is clear that

[258] This applies to 5 geographic markets where there are 68 municipalities. Active competition is considered to prevail on the market in question and there are thus no plans to designate an undertaking with significant market power.

[259] This applies to one geographic market where there are 31 municipalities. Active competition is considered to prevail on the market in question and there are thus no plans to designate an undertaking as having significant market power.

[260] It is worthy of note that two of these markets, i.e. on the one hand, in the geographic market Indre Vestfold and Telemark on the other hand, in Möre and Romsdal, no significant market power assessment was made at wholesale level as NKOM considered that competition was active at retail level, having taken into account market share and the HHI index. This conclusion does not however appear in the section on retail or in the geographic analysis section, but rather in the section that deals with significant market power assessment in wholesale.

greatly increased emphasis is placed on detailed geographic analyses. An increasing number of countries are coming to the conclusion that it is appropriate to segment markets geographically, and those states that have not done so, have received serious objections from the EU Commission.

920. The policy from the Commission has also been changing in very recent years, particularly after the coming into force of the Code in 2018 and new Recommendation on the relevant markets from December 2020, and the Commission believes to an increasing degree that NRAs apply excessively stringent criteria to determine whether units are classified as belonging to areas where active competition prevails. It was previously the case that one generally needed more than two alternative networks to justify such deregulation, whereas is now generally two, for example, the Danish case from 2021-2022, Croatia from 2023 and the plans of both Norway and Italy from 2023, particularly if at least one of the network operators was wholesale-only operator, and that the network was open.

921. It furthermore seems that more emphasis is now placed on issues that relate to market structure in geographic analysis at the cost of issues that relate to behaviour of parties to the market, such as pricing.

922. It is also clear from the above specified descriptions that municipalities are most often considered to be the base units that are most appropriate for further geographic analysis, and there are very few examples of postcodes being used and no example of the distribution territory of the electronic communications network of a former incumbent and/or his competitors being chosen as such a base unit.

5.2 Arguments for need for more detailed geographic analysis

923. It is clear from the above discussion that the importance of geographic analysis has increased considerably in recent months and years, and an ever-increasing number of NRAs have applied geographic measures to the markets in question. This development is first and foremost a result of an increased number of next generation networks deployed by companies who are competitors of the former electronic communications incumbent in the states in question. As deployment of such networks takes place step-by-step within states, generally first in the most densely populated and profitable areas, the situation can arise that competition varies between areas within states.

924. In the light of the increased importance of geographic analysis of the relevant markets in Europe in recent years; of the increased deployment of fibre networks by Mila and the company's competitors in the Capital City Area and widely in the country; of the increased market share of Mila competitors on the relevant wholesale markets in recent years and the varying Siminn market share on the related retail market by area; ECOI considers that the time has come to make a detailed geographic analysis of the markets in question. One could add to this that Mila now plans to phase out its copper network in the coming years, which will mean that no electronic communications undertaking will be likely to have an electronic communications network with national coverage at the end of the planned lifetime of the analysis. From the review of precedents from ECOI sister Administrations in Europe it is clear that the emphases of many of ECOI sister Administrations and of the EU Commission and ESA

have recently tended towards more detailed geographic analysis than was previously practised, and towards geographic differentiation of markets.

925. With the enshrining in law of the Electronic Communications Act no. 70/2022, which is based on the Code, more emphasis is also placed on detailed geographic definition of electronic communications markets. In paragraph 2 of Article 43 of the Act it states among other things, that when defining markets, ECOI shall take utmost account of ESA Recommendations and Guidelines, keeping in mind national circumstances, particularly with reference to the geographic market, where the nature of competition in infrastructure in specific areas are taken into account in accordance with the provisions of competition law. The ESA Recommendation in force on the relevant markets from 2016 and ESA Guidelines on market analysis from 2022, and also the new Recommendation from the EU Commission from December 2020, also place more emphasis than before on detailed geographic analysis.

5.3 Choice of geographic base units that form the starting point for the geographic analysis

5.3.1 General

926. When choosing a geographic base unit, that forms the starting point for the geographic analysis and eventually for the geographic definition of relevant wholesale markets, the Administration will look to Article 43 of the Electronic Communications Act no. 70/2022, to Article 13 of Regulation no. 556/2023 on market analysis in the field of electronic communications, to the ESA Recommendation on relevant markets that are susceptible to *ex ante* regulation from 11 May 2016 and ESA Guidelines on market analysis and evaluation of significant market power of electronic communications undertakings (SMP Guidelines) from 16 November 2022. ECOI also takes into account considerations on definition of geographic markets that are presented in the EU Commission Recommendation that is currently in force since December 2020, on the relevant markets that are susceptible to *ex ante* regulation, though ESA has not yet revised its Recommendation from 2016 accordingly. ECOI takes furthermore into account the above specified BEREC Common Position on geographic aspects of market analysis (definition of geographic markets and remedies) from 5 June 2014, having taken into account the BEREC Report on experience from the Common Position in question from 6 December 2018 and the BEREC Report on competition between multiple operators of next generation access networks in the same geographic area from 8 June 2023, in this connection. ECOI will, as appropriate, have in mind recent practice in other EEA states, and also the opinions of the EU Commission in recent cases.

927. In paragraph 5 of Article 13 of the Regulation on market analysis in the field of electronic communications, it states that when selecting geographic units, from which ECOI is generally required to commence its assessment, ECOI shall take the following into account:

a. The unit shall be of an appropriate size, i.e. sufficiently small to avoid significant variations in competitive conditions within the unit in question, but sufficiently large to avoid an excessive burden in ECOI requests for gathering data, and an excessive burden on ECOI with the analysis and processing of data received.

b. The unit shall reflect the network systems of all relevant operators.[261]

c. Boundaries of the geographic areas shall be clear and stable over time.

928. The same views on choice of geographic base units are to be found in the above specified ESA Guidelines on market analysis and assessment of significant market power in 2022, and also in the EU Commission Recommendation on the relevant markets from 2020. It then says in the Commission Recommendation in question that when conducting geographic analysis, NRAs should begin by choosing criteria for geographic units as a starting point for assessing competitive conditions. Such criteria can follow network topology or the boundaries of administrative units, as appropriate in each individual country. In the working document that accompanies the Recommendation there is further discussion on choice of criteria for geographic units. It is stated there among other things that making such choice of criteria should be the starting point for geographic analysis, i.e. to define the geographic base unit that forms the starting point for the geographic analysis and on the basis of which NRAs conduct their preliminary assessment of competitive conditions.[262]

929. There is also a discussion on the choice of the relevant base units in the BEREC Common Position from 2014 where they must fulfil the conditions below:

- To be smaller than the country as a whole and to be mutually exclusive with respect to prevailing competitive conditions on these markets.
- It must be possible to map the networks of all network operators and service provided through these networks in the area in question.
- The boundaries of the areas should be clear and stable, such that parties to the market can easily understand them.
- To be sufficiently small to ensure that competitive conditions would be unlikely to change significantly within these areas and they should be sufficiently large to prevent an excessive burden on electronic communications companies from replying to queries and

[261] In the working document accompanying the EU Commission Recommendation on the relevant markets it states that NRAs can among other things rely on the geographic survey of network deployment, see Article 22 of the Code, if that survey was adequately implemented. NRAs can among other things define geographic units in accordance with deployment of electronic communications networks (e.g., areas that serve specific telephone exchanges or connection points). This methodology can, however, prove complex in its implementation, particularly with the advent of multiple parallel networks which do not necessarily follow the same technical topology as the former incumbent. NRAs could therefore also rely instead on administrative units such as municipalities and postcodes or telephone exchange areas. NRAs must make a decision on choice of geographic base units, according to what is most suitable in the relevant state on the basis of circumstances that prevail there.

[262] It is then stated in the working document in question that the next step will be to group together those geographic units where competitive conditions are sufficiently homogeneous. Subsequent to geographic analysis, NRAs are obliged to conduct assessment of significant market power on each geographic market and to impose obligations on undertakings with such status on those geographic markets where active competition does not prevail.

reacting to requests for data from NRAs and on the NRAs from analysing the data received.[263]

930. In the above specified BEREC document, it also states that the pros and cons should be investigated of the methods that might be used when dividing into areas and that the method should be chosen that is the best fit with the above specified four criteria.

931. In this document it is also stated, in discussion on selection of base units, that a large majority of NRAs used administrative units, e.g. municipalities or postcodes, rather than the network topology of the former incumbent monopolist and as appropriate of their competitors as well. The reasons why administrative units were chosen were among other things, that they were considered to be clearly delineated and stable and that such units were generally small enough to ensure adequate homogeneity within each area and were sufficiently large for it to be possible to analyse competitive conditions in an effective manner without imposing an excessive burden on market players from replying to requests for data from an NRA or imposing an excessive burden on such institutions in their geographic analysis of the relevant market. Excessive analysis could be extremely time-consuming and unwarranted unless there was major uncertainty about the result. The number of units analysed by European NRAs varied greatly, and to a certain extent depended on the size of the state in question. This was normally from several hundred to several thousand units on which the NRAs had gathered information and analysed.[264]

932. In the BEREC Report on competition between multiple operators of next generation access networks in the same geographic area from 8 June 2023, it was stated that of the 10 states that had then applied geographic measures on market 3a, 4 of them used municipality boundaries, 2 used settlements, 1 used statistical categories, 1 used the 5 largest cities in the country, 1 used postcodes and 1 used distribution territories of energy utilities. There was however no state that used the deployment territory of the former incumbent, or the deployment territory of their competitors. After the report was published, 2 states were added that prescribed geographically segmented markets, i.e., Croatia, that used municipalities and cities and Czech Republic that used administrative geographic unit of type 2. It is thus clear that most states use municipality boundaries for base unit analysis, with the second most frequent being other administrative boundaries.

933. It was furthermore stated in the BEREC Common Position that after having analysed the geographic base units, the next step was normally to group those units where similar competitive conditions prevailed. The units were then generally grouped into areas where there was significant or some competition on the one hand on the other hand, areas where there was less or even no competition. Varying criteria could be used for such grouping. On market 3a the most common criteria used were on the one hand that a specific number of competitors of the potential SMP operator had begun to deploy their own infrastructure above a specific level and on the other hand that the market share of the potential SMP operator had fallen below a specific limit at retail level. In the states, the coverage condition

[263] The BEREC document also states that it is often possible to use as an indicator that the area is large enough to be the object of investment decisions of network operators.

[264] In the BEREC Report on competition between multiple operators of next generation access networks in the same geographic area from 8 June 2023, it is stated that this ranges from less than 100 units up to nearly 20,000.

ranged generally from 50-75% and the condition for market share of the SMP operator variously 40% or 50%.

934. In the above specified BEREC Common Position from 2014[265] it was among other things stated that the main elements of geographic analysis are delineation of appropriate geographic areas and assessment of competitive conditions. NRAs were generally faced with two scenarios in such a task.

- **Scenario 1:** Access that is based on wholesale obligations (local loop lease or bitstream access) is an important source of competition on the retail market, as appropriate with the addition of the existence of electronic communications networks operated by competitors of the potential SMP operator in specific areas (e.g. fibre network, cable system, mobile network or Wi-Fi system). These networks then needed to be capable of providing comparable service to the traditional copper network.

- **Scenario 2:** The above specified access obligations were not an important source of competition on the retail market, but rather first and foremost the existence of electronic communications networks operated by competitors of the potential SMP operator (first and foremost where coverage of competitor infrastructure was substantial).

935. This differentiation belongs, however, rather to the definition of service markets than to geographic analysis. It could nevertheless have an impact on the selection of relevant units for the geographic analysis. What characterised both scenarios were that only the potential SMP operator had the possibility of providing reliable, regulated wholesale access across the whole country. This fact on its own, should not however exclude the possibility that there could be varying competitive conditions by geographic area. The more important the wholesale access was for competition, the more important were telephone exchanges or main distribution frames (MDF) of the potential SMP operator in the geographic analysis. When local loop lease had been the main source of competition at retail level, upgrading of copper networks (for example with vectoring) could create challenges to the sustainability of the competition that had been identified, as the possible phasing out of telephone exchanges could significantly limit the possibilities of local loop lease. In a geographic analysis that should take a forward-looking approach, it was essential to keep this aspect in mind.

936. Finally, it was stated in the BEREC document that most NRAs had included expected future development in the equation when elaborating geographic measures. Expected development of market share and expected development of deployment of next generation networks, including fibre networks, had been taken into account.

937. Given the above, one must therefore find sensible and usable criteria for the selection of base units that will be examined before it becomes possible to assess whether the areas are segmentable with respect to potentially significant variations in competitive conditions between them.

938. As previously stated, when grouping areas, it is not necessary that competitive conditions are precisely the same between the areas. One should group areas where

[265] See pages 20 and 21 in the above specified BEREC Common Position.

sufficiently comparable competitive conditions exist, and separate areas where there are significant differences in competitive conditions. Grouping of this nature and separation can then possibly have an impact on either the designation of an undertaking with significant market power or on identified competition problems and the elaboration of obligations. There are examples in Europe where the fact that an area has been separated into more than one group for more detailed analysis has had no effect on designation of an undertaking with significant market power and/or on the elaboration of obligations.[266]

939. In the case of a large number of small areas, it is likely that there are various parallels or continuity with respect to competitive conditions between these areas, or at least part of them. In such instances it can be difficult to draw a clear line between areas where more or less competition exists. One method was to assess competitive conditions in each of such areas separately and subsequently group the areas. This could however create a heavy workload on NRAs. A more useful and more appropriate method would be to define clear criteria on how the areas are to be grouped. A mixture of these methods is also an option. It would then be proper to have in mind the purpose of market analyses which are not in themselves a goal, but rather a device to analyse competitive conditions for the purpose of deciding whether and then on what party, obligations should be imposed to resolve competition problems for the benefit of consumers.

940. In order to better ensure that areas where sufficiently comparable competitive conditions exist are grouped together and separated from areas where significantly varying competitive conditions exist, it is appropriate to base differentiation between areas on more than one criterion. The criteria that are most appropriate for use in each instance are decided by the relevant NRA, having taken into account competitive conditions in the state in question. All selected criteria must be fulfilled such that the difference in competitive conditions between selected areas is significant, but rather small within an area.

941. A related question is whether the nature of competitors to the potential SMP operator a significant factor in the grouping of areas. If, for example, a potential SMP operator who operates first and foremost on xDSL systems, competes with a fibre network operator in area A and with another in area B, the question is whether it is possible to group the areas in question together. In the opinion of BEREC, it was the homogeneity of competitive conditions that should be the deciding factor, and not that these were two separate competitors in different areas. This meant that if analysis of competitive conditions indicated that they were sufficiently comparable, then areas A and B should be grouped together. If the competitors in question behaved, on the other hand differently, this should come to light in the analysis and should result in the areas in question forming each their own geographic market, as competitive conditions were not sufficiently homogeneous.[267]

942. The definition of geographic markets is dependent on issues that can vary over time, e.g. with respect to the number of competitors in individual areas and deployment of their electronic communications networks, market share and nature of demand. For this reason, the conclusion on grouping areas can change in time with a later analysis. Broadly speaking,

[266] See for example discussion on the UK case from 2019 regarding the market for physical infrastructure and the Germany case regarding market 3a from 2019.

[267] See, e.g., paragraph 132, page 30 in the above specified BEREC Common Position from 2014.

this is not dissimilar from analysis of service markets, which can change between analyses. One of the tasks of NRAs when defining service markets and geographic markets, is to endeavour to predict expected development. In the case of geographic analysis of markets, this can involve collecting information on deployment plans of the potential SMP operator and of his main competitors and endeavouring to predict development of market share based on available data or observable market conditions.

943. When forward-looking market analysis has been conducted, it is normal on the basis of legal security and predictability considerations, to make no alterations to the analysis until the next review, even though the development has proven somewhat different from the prediction. In the case of significant discrepancy, it is likely that a new market analysis needs to be conducted earlier than planned. New electronic communications legislation, based on the Code, place increased emphasis on such foreseeability of obligations.

944. The greater the difference between network topology and coverage of the electronic communications network of the potential SMP operator and the network or networks of his competitors, the more complex a task the geographic analysis and selection of areas becomes for the NRA in question, including in choosing base units as a starting point for the analysis, and categorisation of the geographic markets. Previously, when the former incumbents operated the copper networks without competition, it was considered normal to base possible geographic areas on the telephone exchange area of these parties, which were generally the whole country. By far the most common scenario was that the geographic market was the whole country. In such a scenario, varying levels of competition between areas were first and foremost decided by the existence of operators that used wholesale access to the systems of the former incumbent. In the last years, with the phasing out of the copper network, these former incumbents widely no longer have electronic communications networks with national coverage. This applies for example, to Mila today.

945. If on the other hand, a competitor or competitors of the potential SMP operator had deployed their own electronic communications network which had achieved significant coverage, it becomes more complex to decide which geographic base units are most appropriate, as the relationship between competitive conditions and the telephone exchange areas of the former incumbent become less clear. In such instances, it can be more appropriate to use administrative units such as municipalities or postcodes as base units, as network topology or coverage of the electrical communications networks of the potential SMP operator are no longer the most important criteria. Decisions on deployment of networks operated by competitors of the potential SMP operator are assessed from a totally different perspective than the telephone exchanges of the former incumbent.

946. One can furthermore say that the advice in the ESA Guidelines on market analysis and assessment of significant market power from 2004 which was in force when the last ECOI market analysis of the relevant markets was completed in 2021, with respect to geographic definition, to the effect that the appropriate geographic area for a market depends generally on the coverage of the electronic communications network of the former monopolist and/or the jurisdiction of the electronic communications legislation (which is the whole country) could in many instances have become obsolete for the purpose of analysing varying competitive conditions by area. Such criteria could lead to excessively large-scale geographic units. It could also be more appropriate to use administrative units, particularly if the NRA

can demonstrate that competitive conditions within such an area or set of such areas are sufficiently homogeneous and sufficiently different from competitive conditions in other areas or set of areas. As stated in the discussion of cases involving ECOI sister Institutions in Europe in Section 5.1.10 here above, it has become more and more common in recent months and years to use administrative units for geographic analysis base units, not least municipalities. The underlying reason is often that the main cause of varying competitive conditions is rather the existence of electronic communications networks of competitors of the former incumbent, than wholesale access to the network of the latter party. The method of using the coverage of electronic communications network of the former incumbent (telephone exchange areas), as appropriate having taken into account coverage of competitor networks, seems to be on a rapid decline trajectory and no state has used such base units in the past years.

947. Just as with geographic base units that use the telephone exchange areas of the potential SMP operator, there can also be disadvantages with geographic base units that are based on administrative boundaries. The size of municipalities or postcode areas can for example vary greatly, as can the number of inhabitants and the distribution of inhabitants within them. Without additional criteria, it can be difficult to ensure homogeneity within larger municipalities, postcodes etc., as the coverage of networks of competitors of the former incumbent can vary greatly within them.

948. With the above in mind, the selection of the most appropriate geographic base units that form the starting point for geographic analysis, is decided by a complex interaction of factors that relate to characteristics and topology of electronic communications networks and other characteristics of the market being processed in each instance.

5.3.2 Conclusion on the choice of geographic base units that form the starting point for the geographic analysis

949. In the opinion of ECOI, municipalities are the most appropriate base units to form a starting point for the geographic analysis and on which to implement geographic analysis, given the circumstances in this country. The deployment of Mila local loop network covers most municipalities, and the company operates in all municipalities in this country, but no longer has an electronic communications network with national coverage. Where Mila does not own the local loop network, it does however provide bitstream service. From former times, the company system is divided into telephone exchange areas which were mostly based on urban areas and service with their neighbouring rural areas.

950. Other networks have not been deployed in line with the Mila telephone exchanges. Initially, Ljósleiðarinn first and foremost deployed its network in line with the operating territory of Orkuveita Reykjavíkur, which is owned by the municipalities of City of Reykjavík, Akranes and Borgarnes. In recent years, Ljósleiðarinn has extended its network to more locations in municipalities in the south-west corner of the country. Ljósleiðarinn has now also gained access to two threads in the NATO cable and has bought the Sýn trunk line network which reaches many parts of the country. One can therefore expect that the Ljósleiðarinn fibre local loop network could extend to even more municipalities in the country in the next few years. Tengir for many years deployed its network in Eyjafjörður and widely in North Iceland, also on the basis of municipalities. The local networks that have received funding

from Iceland Digital Connected have been deployed within the municipalities although they do not achieve total covering of a whole municipality. A number of municipalities have also funded networks for their inhabitants, with or without the participation of inhabitants, without governmental funding. Boundaries based on coverage and network topology of the potential SMP operator, sometimes also taking into consideration the competitors' networks, are also very much on the wane in Europe. Mila has extended its fibre network widely, both in the Capital City Area, widely in Southwest Iceland in other regions at various locations in the country, and the company has also been purchasing local countryside networks or leased them long-term. Given Mila's vigorous deployment plans for the coming years, it is clear that the Mila fibre network will significantly increase its density at a national level at the same time as the company will gradually decommission its copper network.

951. In the last market analysis of markets 3a and 3b from 2021, ECOI considered whether postcodes could be suitable base unit for geographic analysis. On 30 April and 30 October 2020, drafts of the decision were published for consultation and comments from parties where collated in Appendix B with ECOI Decision no. 5/2021. With respect to the choice of areas, Mila and Siminn submitted comments on the choice of base units for geographic analysis, which were further described in Section 6.3 in the Appendix in question. Mila considered that the ECOI approach was wrong (i.e. to use municipalities as the basis) and asserted that postcodes would be a better reference when assessing homogeneity within each area in this country. In the opinion of Mila, conditions within each postcode were much more homogeneous than in entire municipalities. The main rule was that there was a separate postcode for each urban location while the rural area had another postcode. Circumstances in rural areas in the countryside were quite different from circumstances in urban areas in the countryside. Siminn considered that postcodes or urban nuclei were the best measure, as connections were categorised by postcode and not necessarily by municipality number. Then postcodes adjacent to each other and to which the electronic communications company in question had deployed fibre were to be grouped together thus areas that were adjacent and that had comparable competitive conditions should be grouped together. When this was done, one contiguous area would be achieved where Ljósleiðarinn had gained more than 50% coverage, and one contagious area where Tengir had achieved 50% coverage.

952. ECOI stated in its replies to these comments that the Administration did not agree with either Mila or Siminn that postcodes were a more appropriate base unit than municipality boundaries when assessing homogeneity or variety of competitive conditions by area in this country. Reference was made to the Mila opinion to the effect that conditions within each postcode were significantly more homogeneous than in complete municipalities. ECOI could not see that there was any main rule in the country's municipalities that they were generally urban areas with 2/3 of the inhabitants and rural areas within the municipality in question with 1/3 of the inhabitants, as maintained by Mila. It was stated that in a news item on the Statistics Iceland website on 22 July 2020, that 5.9% of the country's population lived in rural areas, while 94.1% lived in urban areas, as of 1 January 2020.

953. Mila also considered that market conditions in Iceland varied greatly, and the difference fitted directly with postcodes. Market failure and the support of the Icelandic state in fibre roll-out fitted directly with segmentation by postcode. Competitive conditions were at many locations homogeneous within postcodes, but not within municipalities. In a great number of municipalities, there was one party to the market involved in development in rural

areas and another in urban areas. Postcodes encompassed both development by municipalities with state aid and the development of other parties to the market. Municipality boundaries, on the other hand did not do this and would create a distorted picture of differing market conditions.

954. ECOI pointed out that state aid from the Telecommunications Fund for fibre roll-out was provided to specific municipalities for fibre roll-out in sparsely populated areas within that municipality. In such instances, this was not related to postcodes. Nor was it possible to agree that such grants fitted directly with segmentation by postcode. There were many permutations of how postcodes were divided within municipalities or between them.

955. ECOI reiterated that the "main rule" that Mila said applied to municipalities in Iceland, i.e. that they were structured such that 2/3 of the inhabitants generally lived in urban areas/urban nuclei within the municipality while 1/3 live the sparsely populated areas within them, only applied to about 20% of municipalities in Iceland, when one has deducted the municipalities where Mila has purchased countryside networks or ensured long-time control of such networks. When one has deducted the 4 municipalities that already fulfil ECOI criteria for lighter obligations, this figure is only 14.5% of municipalities.

956. With the above in mind, ECOI rejected that municipality boundaries drew a distorted picture of differing market conditions in this country. It would be perfectly feasible to design criteria by municipality boundaries that group together in one group those municipalities where comparable competitive conditions prevailed.

957. ESA raised no objections to ECOI choice of municipalities as the most appropriate base units for geographic definition of the markets, and nor did the Appellate Committee for Electronic Communications and Postal Affairs in its ruling from 29 December 2022. The same can be said about other parties to the market.

958. ECOI still considers that municipalities are more appropriate base units as a starting point for the geographic analysis than postcodes, among other things because a very large number of local fibre networks that have enjoyed state aid through the Iceland Digital Connected project, have been deployed within the municipalities in question, though in many cases they do not achieve coverage of the municipality as a whole, up to this point in time. Fibre deployment has however achieved full or almost full coverage within many municipalities, and this development will continue. In addition to this, some postcodes cover very extensive areas while others cover very small areas. There is also the fact that some postcodes in the countryside cover more than one municipality while in other municipalities there are many postcodes. According to the Act on Postal Service no. 98/2019, the sole purpose of postcodes is for geographic demarcation, in order to locate the recipient and thus facilitate distribution of post. The purpose of postcodes is therefore only to support efficient distribution of post. It is it not required that postcodes and their geographic coverage follow the boundaries of individual regions, municipalities or counties. Many smaller municipalities do not have their own postcode, but rather share a postcode with another or other municipalities.

959. Postcodes that delineate geographic areas are now about 175 (after deducting post box numbers, and there are 193 when one includes post-box numbers), while municipalities

are 64. Postcodes are thus three times more than municipalities in the country. According to Article 15 of Act no. 98/2019 on Postal Services, it states that the Institute of Regional Development, should decide the boundaries of postcodes and should issue a postcode register and geographic coverage of the postcodes. Changes to the postcode registry shall not be made without consultation with the Registry of Iceland. Postcodes have been rather on the increase throughout the years, while municipalities have been decreasing. In the opinion of ECOI, postcode boundaries are not as stable as municipality boundaries, but both can be subject to change. The population of Iceland is about 387,758.[268] The average number of inhabitants by municipality is about 6,059 against 2,216 in the case of postcodes.

960. It is clear that it would call for much more work for all parties were postcodes to be used, rather than municipalities, and in the opinion of ECOI this does not harmonise with proportionality and is not according to item a of paragraph 5 of Article 13 of Regulation no. 556/2023 on market analysis in the field of electronic communications. There it is stated that a unit shall be of appropriate size, i.e. sufficiently small to avoid significant exceptions in competitive conditions within the unit in question, but sufficiently large to avoid an excessive burden in ECOI requests for gathering data, and an excessive burden on ECOI with the analysis on processing of data received.

961. The Local Authorities Act no. 138/2011 deals with municipalities. In Article 1 it states that the country is divided into municipalities which are responsible for governing their own affairs. The administration of municipalities is managed by the local authorities who are democratically elected. Each person shall be deemed a resident in the municipality in which they are legally domiciled. Municipalities are legal entities. In Article 3 it is stated that the Act forms a general foundation for the operation and public administration of the municipalities. It is stated in Article 4 that municipalities have certain boundaries that are dependent on the outer limits of their real estate, including public lands that lie within them. Municipality boundaries may not be altered except by law. Despite this, the relevant Minister can change municipal boundaries in connection with merging. When two or more municipalities become a new municipality, it will have the same outer geographic delineation as the merged municipalities had vis-à-vis other municipalities.[269]

962. Although merging of municipalities can be realised to some degree during the lifetime of the analysis, it is the opinion of ECOI that such changes do not constitute unstable

[268] The population of Iceland on 1 January 2023 was 387,758, according to a Statistics Iceland news item from 9 March 2023, <https://hagstofa.is/utgafur/frettasafn/mannfjoldi/mannfjoldinn-1-januar-2023/>.

[269] Act no. 96/2021 added to the legislation a provision for a minimum number of inhabitants in municipalities. In Article 4 of legislation on municipalities it states that the aim shall be to have a minimum of 1,000 inhabitants in municipalities in order to increase sustainability of municipalities and to better ensure their ability to perform statutory tasks. If the number of inhabitants of a municipality is less than 1,000 in the general local government elections, its council shall within one year from the local government elections, endeavour to reach this objective by either commencing formal negotiations with another or other municipalities on merging, or prepare an opinion about the status of the municipality, its ability to fulfil its statutory duties and about the possible options for merging the municipality with another or other municipalities. If the council decides not to commence negotiations, a minimum of 10% of those with voting rights in the municipality can request a public vote on the council decision, if such a vote has not already taken place. In the opinion of ECOI, it is unclear whether this legislation has the impact of lessening the number of municipalities in this country during the lifetime of the analysis, and then to what extent, and as stated above this is not a direct obligation to merge but rather a general policy.

boundaries, as in such merging a geographic area does not move from one defined area to another area, but rather areas merge while the external borders of the merged municipality remain unchanged, vis-à-vis other municipalities. It is also generally very sparsely populated municipalities in the countryside that could merge. There have been some examples of merging of municipalities in recent years and the objective is for more mergers. Today, there are 64 municipalities. It is much more common in Europe, to use municipality boundaries than postcodes as base units in geographic analysis, even though municipality boundaries are subject to changes there, as in this country.

963. In paragraph 5 of Article 13 of the Regulation on market analysis in the field of electronic communications, it states that when selecting geographic units, from which ECOI is generally required to commence its assessment, ECOI shall among other things, endeavour to have the boundaries of geographic areas clear and stable over time. The same considerations on choice of geographic areas occur in the above specified ESA Recommendation on market analysis and assessment of significant market power from 2022, and also in the BEREC Common Position on geographic analysis from 2014, where in that document it is among other things, said to be important so that parties to the market find it easier to perceive these boundaries.

964. ECOI considers that both parties to the market, consumers and other stakeholders find it easier to understand boundaries of municipalities than the large number of postcodes, which in the opinion of ECOI are not very transparent and are numerous for a country with as small a population as Iceland. It is therefore the assessment of the ECOI that there is greater transparency and proportionality in applying municipality boundaries than postcodes in connection with this market analysis, and in addition to this it is more appropriate on the basis of prevalent competitive conditions on the relevant market. ECOI thus considers that investment decisions of electronic communications infrastructure companies are made rather on the basis of municipal boundaries than postcodes, as they often come to an agreement with the relevant municipalities on fibre roll-out in the relevant municipality, with or without state aid from the Telecommunications Fund. This is precisely one of the issues that is considered to be of importance in the above specified BEREC Common Position.

965. Furthermore, the above discussion in Section 5.3.1 here above, where among other things, reference is made to the BEREC documents, supports these ECOI intentions. Having taken all of the above into account, ECOI plans to use municipality boundaries when selecting areas for geographic analysis.

966. In the event of a merger of municipalities that do not form the same geographic market during the lifetime of the analysis, ECOI is not obliged to redefine the geographic market of the municipalities in question during the lifetime of the analysis, nor to conduct new SMP assessment on new geographic markets and elaborate obligations, during the lifetime of the analysis. ECOI considers that the boundaries of municipalities prior to potential merging are clear and easily understandable. This is in accordance with views presented in the Code and in the new electronic communications legislation and it is important that market analyses of obligations are foreseeable and apply for a considerable period of time. Should a potential merger on the other hand, lead to significant changes in the areas in question, ECOI nevertheless reserves the right to conduct a new analysis of these areas. This would then be done without conducting a new overall market analysis, among other things with reference

to considerations presented in paragraph 7 of Article 46 of the Electronic Communications Act and in Articles 32 and 49 of the Regulation on market analysis in the field of electronic communications.

5.4 Geographic analysis on related retail markets by municipality

5.4.1 General

967. In paragraph 1 of Article 6 of Regulation no. 556/2023 on market analysis in the field of electronic communications it is stated that the objectives and substance of market definition are to delineate and define competition boundaries between companies and are the first measures taken by ECOI in the process of assessing whether there is need to apply obligations on an electronic communications undertaking with significant market power. In this way the markets that should be examined were defined and delineated both with respect to types of product or service belonging to the market and geographically.

968. In Article 8 of the above specified Regulation, it states that the starting point for all analyses is assessment of the relevant retail market or retail markets, having taken into account demand-side and supply-side substitutability from a consumer point of view during the expected lifetime of the analysis, based on prevailing market conditions and their probable development during the period of validity of the analysis in question. Should ECOI so believe, subsequent to analysis of the relevant retail market or retail markets, that without obligations at wholesale level there is a risk that consumers will suffer damage because of lack of competition at retail level, then ECOI shall define and analyse the relevant wholesale market or wholesale markets.

969. In Article 13 of the Regulation there is specific discussion on definition of geographic market. It states there among other things that when assessing competitive conditions on a market, geographic boundaries of the relevant product or service market shall be delineated. ECOI shall identify whether active competition prevails in a specific geographic area on the relevant product and service market, whether this is the whole country or part of it, as appropriate.

970. In paragraph 7 of Article 44 of the Electronic Communications Act no. 70/2022 it states that when conducting market analysis at wholesale level, one shall assess the competitive position on related retail markets. In Article 15 of the above specified Regulation, it states that the starting point for market analysis shall be assessment of a related retail market. If it is deemed that there is active competition on the relevant retail market, without wholesale obligations being needed on a related wholesale market or markets (the Modified Greenfield Approach), it is not required to impose obligations on the relevant wholesale markets. In paragraph 3 of Article 2 of the Regulation it also states that if competition is considered to be active on the relevant retail market and/or a specific geographic part of that market, without obligations on a related wholesale market, obligations shall not be imposed on undertakings on that retail market, nor on related wholesale markets and nor should obligations that have already been imposed be maintained. According to paragraph 4 of the Article, one shall, on the other hand, designate an undertaking, one or more, as having significant market power on the relevant wholesale market or on part of it if active competition does not prevail on the

relevant retail market and/or on a specific part of it, nor on the relevant wholesale market and or specific part of it.

971. In the ESA Recommendation in force on the relevant markets from 2016, it states that the starting point for NRAs when analysing wholesale markets, is to identify a corresponding retail market or retail markets. Analysis of retail markets should be conducted by taking into account demand-side and supply-side substitutability from a forward-looking perspective over a given time horizon.

972. In the new EU Commission Recommendation from 2020 it is stated that NRAs should begin by assessing whether competitive conditions vary between areas at retail level, given that wholesale obligations were not in place (the Modified Greenfield Approach). There could particularly be exceptions related to the number of infrastructure companies that provided wholesale access and to the scope of parallel electronic communications network coverage, market share in retail or wholesale, price and potential price difference and behavioural pattern of consumers and parties to the market. If varying competitive conditions were identified at retail level, a detailed geographic analysis should be made at wholesale level.

973. With respect to possible exceptions *because of the number and scope of alternative networks* by area, it is stated in the new Recommendation that this consideration should be an important item in geographic analysis, as the Code prescribes, among other things that an NRA shall among other things define geographic markets having taken into account the extent to which infrastructure competition exists within the geographic area. The existence of wholesale-only companies can also have a significant impact on competitive behaviour.

974. With respect to possible deviations in *market share* at retail and wholesale levels, it is stated in the above specified Recommendation that it can be useful to assess the level of competition that the competitor in question is faced with, on the basis of market share statistics. Market share at retail level often provides a good insight into network deployment with respect to analysis of wide-reaching market power at retail level. On the other hand, where it is necessary to apply the Modified Greenfield Approach, market share on the retail market could only in part be an appropriate indication if it reflects the impact of older or existing obligations on a related wholesale market. For this reason, NRAs should also take into account market share at wholesale level.

975. With respect to potential *price difference* by area, it is stated in the above specified Recommendation that a survey of pricing can be important when assessing whether competitive conditions vary between geographic areas. A higher price in a specific area could for example reflect higher costs resulting from special circumstances in the area and could possibly indicate that access barriers were greater in that area than elsewhere. NRAs need nevertheless to be careful not to use only prices as grounds for assessing varying competitive conditions, as the fact alone that prices were harmonised between geographic areas did not necessarily lead to the conclusion that this was a case of a single harmonised market. Varying level of prices, on its own, does not either necessarily lead to a case of separate markets.

976. With respect to behavioural pattern, it is stated in the above specified Recommendation that it can involve both the supply-side, e.g., local marketing, and the demand-side, e.g., the proportion of customers that switch service provider (the churn ratio)

and variation in demand by geographic area with respect to network service speed and bundles.

977. In geographic analysis, one could examine demand-side substitutability in the context of whether customers could switch service provider outside the perceived geographic market, were the price for service to increase. This would however be unlikely to have a significant impact on analysis of the wholesale market in question, as stated in the above specified Recommendation, as customers could only purchase service through those networks that were connected to their residences or places of work.

978. In the Recommendation it is however stated that analysis of supply-side substitutability would however be considered likely to be an important factor in the approach of NRAs, as it encouraged taking into account future development on the market. Supply-side substitutability referred to the ability of competitors to enter the relevant market as a response to price increase. For this reason, NRAs should, among other things take into account possible deployment of electronic communications networks, including the deployment plans of parties to the market.

979. In the above specified BEREC Common Position from 2014, certain issues are mentioned that could be useful to examine in order to assess whether there is a need for a detailed geographic analysis. These are issues such as deployment of electronic communications networks, competitive pressure, electronic communications networks of competitors of the former incumbent on the retail market, the number of electronic communications companies in each area, pricing, and product offer. It is necessary for example, to examine whether pricing and/or service offer vary between areas at retail level. Particularly with respect to the service offer, it is possible to examine service categories or product bundles and whether they differ between areas.

980. It is furthermore stated in the BEREC document in question that as the main purpose of the imposition of obligations at wholesale level is to ensure active competition at retail level for the benefit of consumers, the starting point for geographic analysis should generally be a survey of competitive conditions on related retail markets if obligations were not in place on the wholesale market being examined (the Modified Greenfield Approach).

981. It is also stated there that should a draft conclusion of an NRA show a need for detailed geographic analysis of the relevant wholesale market, then there is among other things a need to analyse competitive conditions in a detailed manner on related retail markets, before geographic analysis is conducted on the relevant wholesale market. When assessing whether competitive conditions are homogeneous or differ between areas, it is also necessary to examine the various factors. These are factors such as access barriers, deployment of electronic communications networks, number of operating electronic communications companies, market share, price, quality, marketing and nature of demand.

982. It is finally stated in the BEREC Common Position that NRAs need to take account of the possibility of specific errors in their market analyses and in the imposition of obligations, among other things in specific geographic areas. Type 1 error (false-positive) constitutes untimely withdrawal or relaxing of obligations not justified by market conditions. This can, among other things, lead to entry of new operators becoming more difficult, among other

things in specific areas, which can lead to a decrease in competitive pressure at retail level. Type 2 error (false-negative) constitutes on the other hand the maintaining of obligations or insufficient relaxation of obligations, in areas where significant or even active competition prevails. This could lessen the incentive for the potential SMP operator to introduce innovation that could provide benefits for consumers. There are examples where deregulation, particularly on market 3b, has led to innovations in the form of product bundles, increased speed of connections and lower price for broadband service at retail level.

983. In the BEREC Report on competition between multiple operators of next generation access networks in the same geographic area from June 2023, there was specific discussion about the extent to which parallel network coverage existed in the same geographic area within EEA states, and the extent to which price and product offer in retail varied by geographic area, when there was parallel network coverage, and there was also an analysis of the impact that this had on market 1 (market 3a in the ESA Recommendation in force), both with respect to separate geographic markets and to varying obligations by area.

984. It is stated there that difference in retail price between geographic areas had been investigated in 18 states, but only 3 of them had identified such a difference. This price difference was variously explained by competition between network operators, varying wholesale prices, or technical factors.

985. In the Report it is emphasised that geographically harmonised retail prices did not necessarily justify that markets are not geographically segmented (or varying obligations applied), and reference was made to the BEREC Common Position from 2014 in this connection. It was furthermore stated that pricing was an important criterion when conducting geographic analysis and pricing of operators should be researched and interpreted with care. If analysis showed that a price between competitors at retail level was the same across the whole country, this could indicate that adequate conditions for geographic segmentation were not present. Such harmonised pricing did not however, always tell the whole story, so NRAs always had to examine the underlying factors, among other things, equilibrium between profit and costs of electronic communications companies in deviating from geographically harmonised price. It was thus clear that there was a need for more detailed analysis of the available information when conducting geographic analysis.

986. It is then stated in the Report that of the 10 states that had then applied geographic measures on market 1 (market 3a), 7 of them had named varying market share of competitors by area on retail markets as one of the reasons, one fewer than those who named a difference in deployment of parallel network coverage between areas. Then there were 4 who mentioned varying market share at wholesale level, 3 named population density (economy of scale), 3 mentioned geographic difference of wholesale prices and only in Denmark was geographic difference in retail prices mentioned. In Denmark this was one of the main arguments for geographic analysis of combined markets 1 and 3b, and this price difference between areas at retail level has historical explanations and has long prevailed in that country. Then there were 7 states that did not investigate potential difference in retail prices or product offer between areas, among other things because such an investigation would not have had an impact on the conclusions of the analysis, the countries were small or said that it was because of difficulties with gathering data.

987. From the above it is clear that the starting point of market analysis at wholesale level, including geographic analysis, is to investigate competitive conditions on related retail markets and how they would be without wholesale obligations and, given that they are illustrative for analysis of the relevant wholesale market. The main purpose of obligations at wholesale level is to remove or minimise the damage that consumers may suffer as a result of lack of active competition at retail level. This means that if no competition problems are identified on the relevant retail market where wholesale obligations are not in place, or in a specific geographic part of the market, it is not an option to impose obligations on the relevant wholesale markets or on specific geographic parts of the markets. There are often strong connections between competitive levels at retail and wholesale level by area, such that strong competition in a specific area at retail level can be explained by vigorous infrastructure competition on the relevant wholesale markets, in the same manner that little competition at retail level is often explained by a shortage of infrastructure competition at wholesale level.

988. With the above in mind, ECOI does not need to conduct a full definition of geographic delineation of the relevant retail market, as the task of this market analysis is not to designate an undertaking with significant market power and thus impose obligations at retail level. If ECOI were to conduct a full geographic definition of the relevant retail market, it is also likely that it would at least not be analogous to geographic definition on market 3a, as the above-mentioned mobile network solutions are not part of that wholesale market, as is the case with the relevant retail market and market 3b.

989. ECOI will on the other hand, carefully investigate competitive conditions by municipality in this country, as this is informative and in fact important for the main subject of this Section 5, i.e. to define and delineate geographic markets in the relevant wholesale markets. Elements related to competitive conditions on retail market, for example market share and number of competitors in each area, will, along with competitive conditions related directly to the relevant wholesale markets, among other things be used as grounds in delineation of geographic markets on the relevant wholesale markets.

990. As previously stated, one must be as forward-looking as possible when conducting geographic analysis, which constitutes among other things that the Administration is required as appropriate to endeavour to foresee development of the various elements for the duration of the lifetime of the analysis. Indicators that shall be based on such projections shall be as objective as possible and shall be based among other things on previous development in the relevant market and on assessment of additional information, for example on deployment plans of parties to the market and on likely development of market share. During such forward-looking geographic analysis, it could come to light that intra-platform competition on market 3a is inadequate, among other things in areas where there is only one network operator, or where competitors only have a small deployment. This particularly applies if barriers to entry are also significant. The incentive for damaging behaviour becomes greater as network operators are fewer, particularly if there is only one such network operator. Under such circumstances, a lack of wholesale obligations could lead to a lack of active competition on corresponding retail markets to the detriment of consumers.

991. NRAs should also take into account those investments that could take place in the lifetime of the relevant analysis. In the light of steadily increasing roll-out of high-capacity networks (fibre and mobile networks) in certain areas, where roll-out of high-capacity

networks from a competitor/competitors of the potential SMP operator has not taken place when the analysis is made, could become profitable in the future. For this reason, it could be necessary during geographic analysis to have such areas, particularly in mind, as a competitor/competitors of the potential SMP operator could make an entry there during the lifetime of the analysis.

5.4.2 Assessment of status on retail markets with respect to geographic analysis

5.4.2.1 Introduction

992. As stated here above in Section 3.2.5, it was the ECOI conclusion that the retail market for broadband access comprised broadband connections provided over copper network with the VDSL technology, fibre and cable systems, and also connections over 4G/4.5G and 5G which are provided through an electricity mains connected router (and also through future mobile telephone generations). This covers both household connections and the corporate connections that are analogous to normal household connections, but not to high-quality corporate connections that are tailor made for larger companies and have greater bandwidth and/or higher service level.

993. In Section 3.2.6 here above, ECOI assessed whether there was active competition on the retail markets in question in this country. The ECOI conclusion was that this was not the case, except possibly in specific areas, despite the fact that wholesale obligations had rested on Mila on the relevant wholesale markets for many years. The status on the retail markets in question would without doubt have been different, even in areas where more competition prevailed, if it had not been for the above specified wholesale obligations. For this reason, ECOI considered it important to continue analysing the situation on the relevant wholesale markets.

994. The above indicated emphatically that if it were not for wholesale obligations, network operators in specific areas, where competition was inadequate on retail markets, could possibly have the economic strength to hinder active competition and to a significant degree operate without taking into consideration competitors, customers or consumers and maintain access barriers to infrastructure, systems and service, see Article 17 of the Regulation on market analysis in the field of electronic communications. ECOI therefore considered it necessary to conduct detailed geographic analysis of the retail and wholesale markets in question and to then conduct detailed analysis of competitive conditions on the relevant wholesale markets in those areas where it is considered that competition was not active at retail and/or wholesale level and as appropriate, designate an electronic communications undertaking, one or more, as having significant market power and impose appropriate obligations on that/those companies.

995. As those wholesale markets being analysed in this instance, are related in the same value chain, there is an obligation to react to current or potential competition problems on the retail market in question, on that wholesale market that is lowest in the value chain, i.e. on market 3a. It may be that obligations on that market do not suffice on their own to resolve the competition problems on the retail market in question, and then measures must also be taken on these problems on the wholesale market that is higher in the value chain, i.e. market 3b. It is not until it is finally clear that obligations on the relevant wholesale markets do not

suffice that the option is considered of reacting with obligations at retail level to the competition problems identified, see Article 61 of the Electronic Communications Act.

996. In Section 3.2.6. it is stated that Siminn has long been the largest and most powerful company on the retail market in question in this country and still is, and in addition to this has very strong position when one considers the sale of bundles with Internet service. The company´s market share has been fairly stable for many years and has not decreased much between the years. The company's market share at national level was something over 46% at the end of 2020, if one only looks at Internet connections over fixed line network. At the end of 2022, the Siminn market share at national level had reached just under 42% when one takes into account the above specified mobile network solutions, but Siminn had a small share of those solutions, at least for the time being. At the same time Sýn had 24.2% market share, Nova had 23.4%, Hringdu had 8.7% and others had 2.2%. Market share of retail operators varied significantly between areas. The Siminn position was for example extremely strong at many locations in the countryside, even between 70-80%, but weaker in the Capital City Area where there was more competition. It was stated in section 5.4 that the status on the retail markets in question would be broken down by municipality, and that this status could have an impact on the conclusions of geographical definition of the relevant wholesale markets.

997. It is also stated in the same Section that in July 2020 Siminn had made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn fibre network and that Siminn had begun providing its service over the Ljósleiðarinn network on 25 August 2021. In the light of the Siminn service agreement with Mila after Mila was sold to Ardian, it was unclear what emphasis Siminn would place on providing service over the Ljósleiðarinn network, but because of the agreement with Ljósleiðarinn, and all things being equal, ECOI considered that Siminn had an opportunity to grow on the Ljósleiðarinn network, and also in providing the above specified mobile network solutions. Those Siminn competitors that had improved their market share on the retail market, had in recent years apparently not been gaining many customers from Siminn. For example, Nova seemed first and foremost to have encroached on Sýn market share during the past years.

998. It is furthermore stated in the above specified Section 3.2.6 that ECOI considers that there are still significant access barriers to the wholesale markets for local and central access in certain areas. Internet service will not be marketed at retail level unless the service provider in question has access to wholesale inputs on markets 3a and/or 3b. One could therefore only come to the conclusion that if there were no access obligations at wholesale level, there would be significant access barriers on the retail market in the areas in question, though these access barriers have doubtless diminished somewhat after Siminn sold Mila. Even if obligations were in place, one could identify access barriers to the retail market in question in specific areas.

999. With the CA Decision no. 24/2023, dated 3 July 2023, CA came to the conclusion that there were only reasons at this stage to rescind a number of provisions of the 2015 Settlement between CA and Siminn, in addition to those that were rescinded according to the Settlement that CA had made with Míla and Ardian on the occasion of Siminn selling Mila, see CA Decision no. 16/2023, dated 22 May 2023. With respect to further rescinding of provisions in the Settlement in question, CA considered it important to gather further experience of the

changes that had occurred on electronic communications markets with the Siminn sale of Mila and to resolve existing complaints and investigations that related to Siminn.

1000. In the above specified CA Decision no. 24/2023 it was stated that in the case, more specifically these were markets for mobile phone service, voice telephony service, Internet service and Internet connections, TV service (subscription TV), purchase of TV content (English football) and possible market for electronic communications bundles.[270] On most of the above specified markets, Siminn's position was strong in the sense that its share was generally high compared with other competitors. Where the company did not have the highest share, it had the next highest, which actually only applied in the case of subscription TV, and the company share in the mobile phone market was similar to the Nova share. In other areas, i.e. in voice telephony, Internet connections (40-45% market share),[271] in parts of TV markets, bundles markets and in the sale of English football, Siminn share was the highest and, in most instances, twice or three times that of the nearest competitor.

1001. CA also stated that one of the objectives of the Settlement from 2015 had been to ensure Mila independence from Siminn. Separation between the companies, had among other things been prescribed there to a significant degree. For that reason, the change that had occurred to the market structure and to the relationship between Siminn and Mila, subsequent to the Siminn sale of Míla to Ardian had been less than otherwise would have been the case. For this reason, the material changes that the sale would have constituted was limited in this respect. One also had to particularly take into account that those matters that CA was processing, and was still processing, and related to potential breaches of the provisions of the Settlement, had all concerned, in one way or another, conduct on retail markets for electronic communications service where Siminn operated and not Míla. It indicated, in the opinion of CA, that it was important to maintain conditions of the Settlement that related to Siminn, at least until those matters were resolved that were still being investigated by the competition authorities. It then states that despite the sale of Mila and that the direct ownership relationship between the two companies had been severed, a wide-reaching wholesale agreement was still in force between Siminn and Mila. In the opinion of CA, this agreement constituted strong common interests between the companies that could manifest themselves in various ways. It was therefore at a minimum, not timely to assert that the impact of the vertical integration no longer existed.

1002. It was the CA conclusion that the above did not provide reason to rescind all provisions of the Settlement that related to Siminn. It was actually important that they remained in force while experience was gained of the changes that had occurred to the structure of the market with the sale of Mila and there was also the matter that outstanding cases that related to

[270] It was stated there that it was the CA assessment that Siminn enjoyed significant dominance on the potential market for bundles of electronic communications and TV service (particularly triple play). There was clearly oligopoly in this field and the Siminn share had been about twofold or threefold compared to other competitors during the years 2016-2022.

[271] It was also stated that in presentations from the Siminn adviser for the sale of Mila (and also for Ardian at a later stage) the assessment had been expressed that Siminn was in the vanguard on this market, despite growth by Nova and Hringdu. CA considered that this information that Siminn and Ardian used as grounds in connection with the sale of Mila, were both in accordance with information held by ECOI on information that had been collected for CA in the merger case. CA considered that Siminn share, whether this was based on revenue or number, was sufficiently high for it to provide strong indications on a position of market dominance and then, particularly because it was in the range of two or threefold that of nearest competitors.

alleged breaches by Siminn of the conditions had not been resolved. It had not been demonstrated that such significant changes had occurred to electronic communications markets in this country that would provide reasons to rescind important material conditions that bound Siminn pursuant the Settlement from 2015. When making this assessment, CA paid particular attention to:

- The Siminn position on important markets on which the company operated was still strong.

- The wholesale agreement between Siminn and Mila and other connections between the companies constitute continued strong common interests, which have at least in part the characteristics of vertical integration and that could have an impact on the markets on which Siminn operates.

1003. With CA Decision no. 30/2023 dated 28 July 2023, the Authority made a provisional decision related to a probable breach by Siminn of competition law, by denying Nova the wholesale and distribution of Siminn Sport which included broadcasts from English Premier League Football. Siminn was instructed to desist from such behaviour against Nova and to immediately make an agreement with the company on wholesale and distribution of Siminn Sport with English football. CA considered it particularly important that the Competition Authority is intervened and stopped this behaviour without delay. The provisional Decision was to apply until 31 January 2024.

1004. CA considered that Siminn's behaviour constituted denial of sale by a company that controlled an important and popular product for resale, and that it would constitute a damaging impact for competition on the electronic communications and television markets in this country if Nova could no longer offer its customers English football. CA also considered that it constituted discrimination against competitors as Sýn was still able to offer its customers English football, but not Nova. CA considered that Siminn had market dominance on the market for wholesale access of English football, and that this behaviour was in breach of the provisions of competition legislation, which banned abuse of a dominant market position. CA considered that the behaviour in question was neither based on reasonable or objective grounds. The Siminn behaviour was conducive to damaging competition and that competitors that would have been three were now reduced to two.

1005. Siminn provides retail service for broadband services virtually nationwide, as the former monopolist incumbent in electronic communications in this country. The company does this first and foremost by offering high-capacity connections over fibre and copper (mainly VDSL) networks. At occasional locations, the company only offers upgraded ADSL connections, but they are quickly decreasing and are rapidly on their way out, and they were just over 1% of the total number of bitstream connections and 7% of the total number of copper connections at the end of 2022. The company enjoys what is called ubiquity on the market in question. In addition to this, Siminn has the highest market share on the retail market in question at national level, and thus has a considerable advantage over the nearest party.

1006. Here in the following text, emphasis will be placed on discussing possible differences in competitive conditions that may exist at retail level by area. In Sections 5.4.2.2-5.4.2.8, a

detailed assessment will be made of the status on the relevant retail market, with respect to the difference in competitive conditions by municipality or set of municipalities. The following aspects will be discussed:

1. Deployment of electronic communications networks by municipality.

2. Access barriers on the wholesale market by municipality.

3. Number of electronic communications companies on the retail market and on the relevant wholesale markets in individual municipalities.

4. Market share on the retail market by municipality.

5. Concentration on retail market by municipality (HHI-index).

6. Pricing on the retail market by municipality.

7. Other aspects, including marketing behaviour, marketing policy, service offer, quality, characteristics and functionality/usefulness of connections and nature of demand by area.

1007. In Section 5.4.3 one can then find the ECOI conclusion on geographic analysis of the status on retail markets. As stated in Section 5.3 here above, it is the ECOI conclusion that municipalities are the most appropriate base unit as a starting point for the geographic analysis on which to base geographic analysis, given the circumstances in this country. This applies both to the retail and wholesale levels in the opinion of ECOI. In Section 5.5. one can find geographic analysis of markets 3a and in Section 5.6 of market 3b.

5.4.2.2 Deployment of electronic communications networks by municipality and a prediction on its development

1008. In Section 3, the status at a national level on the retail market for broadband connections and service at a fixed location was covered in detail, regardless of whether this was in the case of a fixed line network (copper network with VDSL equipment, cable system and fibre) or electricity mains connected mobile network routers over 4G/4.5G and 5G.

1009. In Section 3.1.1 there is detailed discussion on access to the above specified electronic communications networks, their deployment and on use of these networks. As stated there, the deployment of cable systems in Iceland is extremely small and is in fact limited to only one district in one of the country's municipalities, i.e. Reykjanesbær. It is also stated there that access to dedicated Internet service over a fixed line network is at a very high level in Iceland, where Iceland is that country in Europe which has the highest proportion of active Internet connections, that is to say about 77%. The proportion of active copper connections has decreased rapidly during recent years, although there is still about 20% of fixed line connections in this country over such a technical solution, first and foremost with VDSL. At end of year 2022, the fibre network reached about 89% of the country's households and companies, of which there is 93% of households and 72% of companies. Parallel coverage by two fibre networks had then reached 57% at a national level. The is no example in this country of parallel network coverage of more than two fibre networks, and it is not expected that

there will be such examples. 4G/4.5G mobile networks are also widely deployed in this country, and furthermore substantial and rapid 5G roll-out is underway and will continue during the coming years, as all of the three mobile phone companies have ambitious plans in this respect. Performance and data transfer capacity of such high-capacity mobile networks have changed radically during recent years with deployment of these mobile network generations.

1010. As has been stated, ECOI considers substitutability has become a reality on the retail market between Internet service over the above specified fixed line network solutions and Internet service through mains connected routers that use such mobile network solutions. In Section 4 it is then stated that such substitutability also exists on market 3b but not on market 3a. In Section 3.1.5. there was then discussion on the offer of varying access technology on a national level on the retail market in question. Reference is made to that Section.

1011. In this Section, and particularly in Section 5.5.2.2 here below on the market 3a, there will be more detailed discussion on deployment of these electronic communications networks and the projection on the development by municipality in the country.

1012. In Europe, competition problems on the retail market or retail markets related to wholesale markets 3a and 3b, are generally caused by inadequate infrastructure competition (parallel electronic communications network coverage) and/or by a lack of effective wholesale access. These issues can vary between areas and there is the fact that grounds for active competition may be minimal in very sparsely populated and rural areas. This has also been the situation in this country, where competition on the retail market has gradually grown at many locations during the past 20 years or so, first because of wholesale access to Mila electronic communications networks and later because of deployment of fibre networks of the various network operators that have provided Mila with competition. Options of retail companies have therefore increased from what they were before. This however varies considerably between areas in this country and in general one can say that competition in retail is greater in the Capital City Area than in the countryside, even though there is also strong competition at many locations in the countryside, see table in Section 5.5.2.2 here below.

1013. As there is a strong correlation between deployment of electronic communications networks that provide competition with Mila electronic communications network and the situation on the relevant retail market, ECOI considers it appropriate to discuss here the deployment of such electronic communications networks by municipality in this country. Mila previously had a fixed line network with national coverage, but no longer, although it is the electronic communications company that operates the most extensive fixed line networks in the country (copper and fibre),[272] which together reach about 91% of the country's households and companies. If Mila does not own the underlying electronic communications network, then the company does however operate in most instances bitstream service on the networks in question and in this manner, Mila bitstream service reaches in one way or another almost all inhabited parts of the country.

[272] Although Mila has decommissioned part of the copper network, it still reaches about 85% of households and companies in the country, but the company intends to complete the commissioning of the system by the end of 2028, as most effort will be directed at the decommissioning during the last two years.

1014. With respect to detailed discussion on deployment of electronic communications networks by municipality in the country and predictions about their development, references are made to the above specified Section 5.5.2.2 here below.

5.4.2.3 Access barriers on retail markets by area

1015. Generally speaking, varying levels of competition between areas is a consequence of variance in the degree of entry barriers, as new competitors normally make their first entry into areas with fewer entry barriers and where economy of scale is greater. On electronic communications markets, barriers to entry are normally related to economy of scale and sunk costs. Such entry barriers can furthermore result from legal factors such as granting of licences. This means that it is an option to examine economy of scale and sunk cost by geographic area with the intention of drawing conclusions on varying competitive conditions. Economy of scale is more likely be realised, the greater the demand for the service in question. Aspects related to demand are, e.g., total turnover, population density and density of companies. Though such a study could provide indications, it is unlikely that these aspects on their own or jointly, could fully explain access barriers, as they are often explained by many interacting factors, which are often not clear.[273]

1016. In Section 5.5.2.3 here below, in discussion on access barriers by area on market 3a, there is discussion on this issue, but according to the nature of the matter such access barriers are more numerous on that wholesale market than on market 3b, and particularly on the retail market in question. Reference is made to that discussion.

5.4.2.4 Number of electronic communications undertakings in individual municipalities at retail level

1017. A simple and often more effective method, which can also reflect entry barriers by area, is the number of competitors of the potential significant market power operator that provide or can provide service in the relevant area or areas. This applies both to retail and wholesale level. It is easier to show this than to conduct the assessment mentioned here above in Section 5.4.2.3 with respect to entry barriers, and this method furthermore shows how entry barriers really work in practice.

1018. The analysis that needs to be conducted to show the number of competitors that provide or can provide service in a specific area can vary according to the service market being examined in each instance. It is important to have in mind that competitive conditions can also vary by area as a result of the size of such competitors, no less than as a result of their number.

1019. Access barriers are generally less on the retail market in question than on the relevant wholesale markets, particularly on market 3a, and the number of retail companies with more than 5% market share in the relevant municipality is normally more than on market 3a in the country's municipalities, and not dissimilar on market 3b. Retail companies can among other things get bitstream access through Access Option 3 with Mila and thus connect to most households and companies in the country. If it had not been for obligations on Mila for many

[273] See pages 25-26 in the above specified BEREC Common Position from 2014.

years, it is not certain that this possibility would have been available to electronic communications companies. On the relevant retail market, there is also variation in how many retail companies with more than 5% market share provide this service in this country in each municipality. The number ranges from 5 (Reykjanesbær) where it is highest, down to 2 (Skagabyggð) where it is lowest. In general, one can say that the number is 3-4 in the majority of municipalities in this country.

1020. In Section 5.5.2.4, one can find a table showing the number of electronic communications companies operating in all of the country's 64 municipalities on the relevant retail market, and on the relevant wholesale markets here being analysed. Reference is made to this.

5.4.2.5 Market share on the retail market by municipality, and the prediction of development

1021. According to paragraph 2 of Article 18 of the Regulation on market analysis in the field of electronic communications it is stated that it is important when assessing market power of an electronic communications undertaking to take into account the market share of the company that may have SMP on the relevant market, and the competitors of this company, and furthermore to take into account the competitive pressure that potential competitors can provide in the mid-term. As has previously been stated, it is not the task of this market analysis to designate an undertaking as having significant market power on the relevant retail market, or on specific geographic parts of the market. On the other hand, market share on the retail market is informative and important in the geographic delineation of the relevant wholesale markets and is one of the factors used to support this delineation. Market share on the retail market, and other elements that provide a picture of competitive conditions on the relevant retail market or on specific geographic parts of market at retail level, can be of importance in assessing significant market power on the relevant wholesale markets or on individual geographic parts of those markets.

1022. According to paragraph 3 of the same Article, market share gives the first indication on market structure and on the proportional importance of the various electronic communications companies operating on the relevant market. One should interpret market share with the relevant market circumstances in mind, particularly taking account of the activity or dynamics of the competition in place on the relevant market and the extent to which products or service are differentiated.

1023. In paragraph 4 of the same Article, it states that significantly high market share of one company over a significant period of time, or greater than 50%, is considered to be a strong indication of significant market power, except in exceptional circumstances. Market share could on the other hand only act as an indication of the above if competitors cannot increase their offer sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5, it is important to keep in mind that under certain circumstances, a company with a high market share cannot operate to a significant degree without concern for customers with a strong bargaining position, for example if the countervailing buying power is substantial.

1024. It states in paragraph 6 that one should also take into account that a company may have significant market power despite having a lower share than 50% of the relevant market. It matters for example whether the relevant company is generally powerful with respect to capital, technology, infrastructure and offer of goods or service. The conclusion on significant market power is based on overall assessment where both market share and factors related to market structure are meaningful. It is not likely that significant market power exists if market share is less than 40% on the relevant market. There can however be exceptional instances where competitors are not in a position to react to behaviour of an electronic communications company that is below this limit such that an electronic communications company can be considered to have significant market power although it has less than 40% market share.

1025. In paragraph 7 it states that if market share is high, but under 50%, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be conducted before an opinion is reached on the existence of significant market power. ECOI considers this also to apply if market share is over 50%, particularly in duopolies or oligopolies, as the 50% boundary does not automatically lead to a case of significant market power. It is for example clear that in duopolies, one of the companies could have a little over 50% and the other a little under 50%. It is quite another matter where one company has just over 50% and, for example, many other companies have low market share. This means that market share is only one of many criteria to take into account when assessing market power.[274]

1026. One method of including the size and strength of competitors by area when conducting geographic analysis, is, as stated above, to examine the market share of market players in specific areas. It would be ideal if not only market share at a given point of time was shown, but also its development over time in order to make it possible to identify potential trends in this connection. In this context, two points in time are often enough. Should indications emerge of significant changes in market share through points in time in certain areas and not in others, then this could be indicative of varying competitive conditions by area.

1027. In paragraph 3 of Article 44 of the Electronic Communications Act, it states that when conducting market analysis, ECOI shall in a forward-looking manner, assess how the development of the relevant market would be if obligations were not in place, pursuant to Chapter IX of the Act (Modified Greenfield Approach) and among other things take into account the following factors:

a) Market development that has an impact on the likelihood that the relevant market is tending towards effective competition;

b) all competitive restraint at relevant wholesale and retail levels;

[274] In Article 19 of the Regulation, examples are given of other factors that can affect assessment of market power, for example access barriers, barriers to growth, total size and proportionate size of a company, control of infrastructure that is difficult to duplicate, technical and/or commercial advantage or dominance, countervailing buying power, access to capital, product differentiation, economies of scale and scope, network effects, vertical integration, highly developed distribution and sales systems, long-term access agreements and potential competition.

c) other rules or measures that have an impact on the relevant market, or related retail market.

1028. In paragraph 5 of Article 2 of the above specified Regulation on market analysis, it states that markets shall be analysed with a view to likely developments in the near future, to the extent possible. This means that when ECOI conducts market analysis, the Authority shall assess likely development on the relevant retail market if no obligations applied at wholesale level, among other things, whether the relevant market or specific geographic parts of that market, tends towards active competition. As such analysis should be forward-looking, it is important that ECOI endeavours to assess future development of market share during the lifetime of the analysis, and whether the deviations that may have been identified from the current and historical market shares are likely to increase, decrease or remain relatively stable.

1029. In Article 8 of the Regulation, which discusses assessment of a related retail market, and which is in Chapter II of the Regulation which discusses the definition of product or service markets and geographic markets, it states that the starting point for all analysis is assessment of the relevant retail market or retail markets, having taken into account demand-side and supply-side substitutability from the perspective of consumers during the expected lifetime of the analysis, based on current market conditions and their likely development during the period of validity of the analysis.

1030. In paragraph 1 of Article 16 of the Regulation, where there is discussion on the conduct of market analysis, which is under Chapter III of the Regulation which discusses the conduct of market analysis and assessment of significant market power, it states that market analysis shall generally constitute analysis of whether it is likely that active competition will be realised on the relevant market during the lifetime of the analysis in question and thus whether a lack of active competition is permanent or long-term. In paragraph 2 of the Article, it states that when conducting market analysis, ECOI shall in a forward-looking manner, assess how development of the relevant market would be if there were no wholesale obligations in place and shall take into account the following elements:

a) Market development that has an impact on the likelihood that the relevant market is tending towards effective competition;

b) All competitive restraint at relevant wholesale and retail levels;

c) Other rules or measures that have an impact on the relevant market, or related retail market.

d) Obligations on other relevant markets.

1031. ECOI has therefore collected data on the retail and wholesale market in fixed line networks, where the data has been broken down by municipality at nine points in time, i.e. for mid-year 2018, end of year 2018, end of year 2019, mid-year 2020, end of year 2020, mid-year 2021 and end of year 2021, mid-year 2022 and end of year 2022.[275] Data has been gathered on, among other things, retail market share in Internet service, broken down by

[275] In Appendix C market share and deployment data for mid-year 2023 is shown for all geographical markets.

municipality. Since the last analysis was published in October 2021, the number of municipalities decreased on the other hand, from 69 to 64 in the years 2021 and 2022. ECOI only has, on the other hand, information on the number of mains connected network routers in April 2023 and adds them to the end of year figures for fixed line networks at the end of 2022. This means that the Authority does not have such information for all these periods of time, and the retail market share is calculated on the basis of these mobile network connections being added to the final figures for bitstream at the end of 2022. ECOI will continue to regularly collect such information, along with figures for fixed line networks.

1032. Conclusions of this part of data collection are displayed graphically in Table 5.4 here below, that is to say for the periods mid-year 2021, end of year 2021, mid-year 2022 and end of year 2022. The reason why ECOI does not show all the data in the table in question is among other things that the accuracy of the data was somewhat lacking from some parties to the market in the first data collection. ECOI can however consult data on market development further back in time in individual municipalities, if there is reason to specifically discuss the development of retail market share and projections on future development within these municipalities, in geographic definition of the relevant wholesale market and or/assessment of significant market power in specific areas.

Table 5.4 Highest and second highest retail market share in each municipality, broken down by municipality[276]

Capital area

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Reykjavíkurborg	Síminn 33% (31%)	Síminn 33% (30%)	Síminn 34% (29%)	Síminn 33% (28%)	Síminn 31% (28%)
Kópavogsbær	Síminn 41% (31%)	Síminn 41% (30%)	Síminn 42% (29%)	Síminn 41% (29%)	Síminn 39% (28%)
Seltjarnarnesbær	Sýn 45% (29%)	Sýn 43% (30%)	Sýn 42% (31%)	Sýn 40% (32%)	Sýn 39% (31%)
Garðabær	Síminn 47% (31%)	Síminn 46% (31%)	Síminn 46% (30%)	Síminn 46% (30%)	Síminn 44% (30%)
Hafnarfjarðarkaupstaður	Síminn 44% (26%)	Síminn 44% (25%)	Síminn 43% (25%)	Síminn 43% (26%)	Síminn 40% (25%)
Mosfellsbær	Síminn 44% (28%)	Síminn 44% (28%)	Síminn 44% (27%)	Síminn 43% (27%)	Síminn 41% (27%)
Kjósarhreppur	Síminn 45% (44%)	Síminn 46% (42%)	Síminn 47% (41%)	Síminn 45% (41%)	Síminn 38% (28%)

Suðurnes

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Reykjanesbær	Síminn 59% (18%)	Síminn 51% (16%)	Síminn 50% (16%)	Síminn 50% (17%)	Síminn 42% (27%)
Grindavíkurbær	Síminn 73% (16%)	Síminn 72% (16%)	Síminn 70% (17%)	Síminn 68% (18%)	Síminn 52% (21%)
Sveitarfélagið Vogar	Síminn 65% (17%)	Síminn 62% (18%)	Síminn 62% (18%)	Síminn 60% (18%)	Síminn 44% (23%)
Suðurnesjabær	Síminn 74% (17%)	Síminn 74% (16%)	Síminn 73% (16%)	Síminn 71% (18%)	Síminn 49% (27%)

[276] The name of the company that has the highest share in the relevant municipality is published by name and the market share of that company. The market share of the second highest party is in brackets. In Appendix C, one can also find information on market share for mid-2023.

West

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Akraneskaupstaður	Síminn 40% (37%)	Síminn 42% (35%)	Síminn 41% (34%)	Síminn 41% (34%)	Síminn 39% (35%)
Skorradalshreppur	Síminn 64% (27%)	Síminn 58% (29%)	Síminn 58% (29%)	Síminn 57% (30%)	Síminn 40% (29%)
Hvalfjarðarsveit	Síminn 64% (30%)	Síminn 65% (29%)	Síminn 64% (29%)	Síminn 63% (29%)	Síminn 53% (28%)
Borgarbyggð	Síminn 58% (20%)	Síminn 57% (21%)	Síminn 57% (21%)	Síminn 55% (22%)	Síminn 44% (27%)
Grundarfjarðarbær	Síminn 75% (10%)	Síminn 75% (9%)	Síminn 75% (10%)	Síminn 76% (10%)	Síminn 55% (21%)
Eyja- og Miklaholtshreppur	Síminn 74% (12%)	Síminn 76% (10%)	Síminn 76% (10%)	Síminn 76% (10%)	Síminn 75% (12%)
Snæfellsbær	Síminn 82% (7%)	Síminn 82% (7%)	Síminn 82% (8%)	Síminn 81% (8%)	Síminn 67% (14%)
Sveitarfélagið Stykkishólmur	Síminn 83% (8%)	Síminn 82% (10%)	Síminn 81% (10%)	Síminn 80% (11%)	Síminn 72% (14%)
Dalabyggð	Síminn 82% (12%)	Síminn 82% (11%)	Síminn 82% (11%)	Síminn 80% (13%)	Síminn 71% (15%)

Westfjords

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Bolungarvíkurkaupstaður	Síminn 64% (21%)	Síminn 58% (27%)	Síminn 53% (34%)	Síminn 48% (37%)	Síminn 43% (31%)
Ísafjarðarbær	Síminn 45% (45%)	Snerpa 46% (44%)	Snerpa 48% (42%)	Snerpa 49% (40%)	Snerpa 42% (37%)
Reykhólahreppur	Síminn 88% (7%)	Síminn 89% (7%)	Síminn 89% (7%)	Síminn 89% (8%)	Síminn 74% (15%)
Tálknafjarðarhreppur	Síminn 80% (8%)	Síminn 79% (10%)	Síminn 78% (11%)	Síminn 77% (13%)	Síminn 72% (11%)
Vesturbyggð	Síminn 82% (8%)	Síminn 80% (8%)	Síminn 80% (8%)	Síminn 80% (8%)	Síminn 68% (15%)
Súðavíkurhreppur	Síminn 62% (29%)	Síminn 65% (28%)	Síminn 61% (34%)	Síminn 59% (35%)	Síminn 55% (28%)
Árneshreppur				Sýn 100%	Síminn 48% (35%)
Kaldrananeshreppur	Síminn 96% (4%)	Síminn 96% (4%)	Síminn 95% (5%)	Síminn 95% (5%)	Síminn 94% (6%)
Strandabyggð	Síminn 76% (12%)	Síminn 74% (15%)	Síminn 74% (15%)	Síminn 74% (14%)	Síminn 68% (17%)

North-west

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Húnaþing vestra	Síminn 89% (7%)	Síminn 87% (8%)	Síminn 87% (8%)	Síminn 84% (10%)	Síminn 76% (13%)
Sveitarfélagið Skagaströnd	Síminn 90% (7%)	Síminn 90% (7%)	Síminn 91% (6%)	Síminn 91% (6%)	Síminn 86% (6%)
Skagabyggð	Síminn 100% (0%)	Síminn 97% (3%)	Síminn 97% (3%)	Síminn 97% (3%)	Síminn 84% (9%)
Húnabyggð	Síminn 83% (14%)	Síminn 82% (15%)	Síminn 81% (14%)	Síminn 81% (15%)	Síminn 74% (13%)
Skagafjörður	Síminn 79% (17%)	Síminn 79% (17%)	Síminn 77% (17%)	Síminn 74% (18%)	Síminn 73% (16%)

North-east

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Akureyrarbær	Síminn 71% (23%)	Síminn 71% (23%)	Síminn 68% (25%)	Síminn 68% (25%)	Síminn 62% (25%)
Norðurþing	Síminn 83% (14%)	Síminn 81% (14%)	Síminn 81% (13%)	Síminn 80% (14%)	Síminn 77% (15%)
Fjallabyggð	Síminn 81% (14%)	Síminn 82% (13%)	Síminn 81% (13%)	Síminn 81% (13%)	Síminn 64% (24%)
Dalvíkurbyggð	Síminn 82% (15%)	Síminn 82% (15%)	Síminn 81% (17%)	Síminn 81% (17%)	Síminn 73% (18%)
Eyjafjarðarsveit	Síminn 82% (14%)	Síminn 83% (14%)	Síminn 79% (17%)	Síminn 79% (17%)	Síminn 74% (17%)
Hörgársveit	Síminn 65% (32%)	Síminn 65% (32%)	Síminn 59% (35%)	Síminn 58% (37%)	Síminn 59% (35%)
Svalbarðsstrandarhreppur	Sýn 50% (45%)	Sýn 49% (46%)	Sýn 48% (46%)	Síminn 47% (46%)	Sýn 55% (38%)
Grýtubakkahreppur	Sýn 55% (44%)	Sýn 55% (44%)	Sýn 62% (36%)	Sýn 60% (37%)	Sýn 53% (36%)
Tjörneshreppur	Síminn 54% (38%)	Síminn 57% (36%)	Sýn 54% (42%)	Sýn 54% (42%)	Sýn 54% (42%)
Þingeyjarsveit	Síminn 65% (28%)	Síminn 65% (29%)	Síminn 63% (31%)	Síminn 63% (31%)	Síminn 64% (27%)
Langanesbyggð	Síminn 88% (7%)	Síminn 86% (9%)	Síminn 86% (8%)	Síminn 86% (9%)	Síminn 82% (8%)

East

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Fjarðabyggð	Síminn 80% (10%)	Síminn 80% (10%)	Síminn 79% (11%)	Síminn 78% (11%)	Síminn 65% (15%)
Múlaþing	Síminn 78% (15%)	Síminn 76% (17%)	Síminn 74% (16%)	Síminn 70% (16%)	Síminn 65% (18%)
Vopnafjarðarhreppur	Síminn 85% (9%)	Síminn 85% (8%)	Síminn 84% (10%)	Síminn 85% (10%)	Síminn 80% (11%)
Fljótsdalshreppur	Sýn 90% (10%)	Sýn 90% (10%)	Sýn 91% (9%)	Sýn 74% (14%)	Sýn 67% (19%)

South

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Vestmannaeyjabær	Síminn 76% (16%)	Síminn 75% (17%)	Síminn 75% (16%)	Síminn 75% (17%)	Síminn 60% (18%)
Sveitarfélagið Árborg	Síminn 61% (19%)	Síminn 60% (19%)	Síminn 59% (19%)	Síminn 58% (19%)	Síminn 51% (21%)
Sveitarfélagið Hornafjörður	Síminn 80% (14%)	Síminn 79% (14%)	Síminn 79% (13%)	Síminn 78% (14%)	Síminn 68% (16%)
Mýrdalshreppur	Síminn 51% (43%)	Síminn 50% (44%)	Síminn 50% (44%)	Síminn 51% (42%)	Sýn 46% (35%)
Skaftárhreppur	Síminn 86% (10%)	Síminn 87% (9%)	Síminn 85% (9%)	Síminn 84% (9%)	Síminn 63% (21%)
Ásahreppur	Sýn 54% (31%)	Sýn 54% (31%)	Sýn 54% (32%)	Sýn 48% (36%)	Sýn 50% (30%)
Rangárþing eystra	Síminn 60% (18%)	Síminn 61% (16%)	Síminn 62% (16%)	Síminn 62% (16%)	Síminn 48% (25%)
Rangárþing ytra	Síminn 50% (29%)	Síminn 50% (28%)	Síminn 49% (28%)	Síminn 48% (29%)	Síminn 36% (29%)
Hrunamannahreppur	Síminn 73% (18%)	Síminn 75% (15%)	Síminn 73% (16%)	Síminn 72% (16%)	Síminn 46% (30%)
Hveragerðisbær	Síminn 37% (32%)	Síminn 38% (29%)	Síminn 38% (29%)	Síminn 39% (28%)	Síminn 37% (28%)
Sveitarfélagið Ölfus	Sýn 33% (31%)	Sýn 33% (31%)	Sýn 32% (32%)	Síminn 32% (31%)	Sýn 31% (30%)
Grímsnes- og Grafningshreppur	Síminn 78% (11%)	Síminn 77% (11%)	Síminn 74% (13%)	Síminn 73% (12%)	Nova 43% (32%)
Skeiða- og Gnúpverjahreppur	Síminn 43% (43%)	Sýn 44% (42%)	Sýn 43% (42%)	Síminn 44% (42%)	Síminn 40% (38%)
Bláskógabyggð	Síminn 60% (20%)	Síminn 61% (19%)	Síminn 58% (20%)	Síminn 55% (22%)	Síminn 34% (33%)
Flóahreppur	Síminn 49% (35%)	Síminn 49% (35%)	Síminn 48% (35%)	Síminn 47% (36%)	Síminn 40% (36%)

The Capital City Area

1033. According to the above figures, one can see that Siminn generally has the highest market share in the Capital City Area, except in Seltjarnarnesbær, where Sýn has the highest share, 39% at the end of 2022, but that company had 45% share in mid-year 2021. Siminn is next with 31%.[277] The Siminn share in the Capital City Area was 31-44% at end of year 2022, and it generally decreased by about 2-3%[278] with these measurements where the mobile network solutions first came into play, and as has been previously stated, Siminn is the electronic communications company that has least market share in those mobile network solutions. The difference between market share of the largest and second largest party in the 7 municipalities in the Capital City Area is also rather small, i.e. from 3% in Reykjavik to 15% in Hafnarfjörður. The third largest party in the area also has a significant share, and the fourth party has quite a sizeable share. Market share of the largest party in the area is 44% in Garðabær and in the range of 31-40% in all the others.

1034. The Capital City Area, with the exception of Kjósarhreppur, is characterised by almost 100% Ljósleiðarinn fibre deployment, with in addition almost 100% deployment of Mila copper and/or fibre networks.[279] The situation on retail markets in the Capital City Area indicates that strong competition prevails there, although it is not possible to assert solely on the basis of figures for market share, that active competition is considered to prevail in some or all of the municipalities of that area.

[277] Seltjarnarnes is the municipality where Ljósleiðarinn has operated longest. It was there that most was done initially in connecting households, as Ljósleiðarinn connected in-house wiring and installed fibre endpoint equipment in all households in the municipality. This project was completed in 2007, which means that there is more than a 15-year history of full deployment of a fibre network in that town in competition with first Siminn and then Mila after it came into existence as a separate company, and which has now been sold by Siminn.

[278] Siminn share decreased on the other hand, from 45% in mid-year 2021 to 38% at end of year 2022 in Kjósarhreppur because of the impact of the mobile network solutions in question, but this is a small and sparsely populated municipality in the outskirts of the Capital City Area where the proportion of summerhouses is high and the impact of the mobile network solutions therefore greater than in other parts of the Capital City Area.

[279] At the end of 2022, Mila's average fibre deployment in the Capital City Area had reached over 70%, but it was for example only 30% in Seltjarnarnes.

1035. With respect to a prediction on likely development of market share in the Capital City Area at retail level, ECOI does not expect great changes, during the lifetime of the analysis. Developments in recent years have been characterised by slow changes in market share, where Siminn has retained its share rather well,[280] though the share did decrease somewhat when the mobile network solutions in question were taken into the equation at the end of 2022, and Sýn has gradually been losing market share, apparently, mainly to Nova. Nor is it expected that the mobile solutions in question will have much impact on the development of market share in the area, except perhaps in Kjósarhreppur. ECOI cannot see any factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis, nor the entry of a new and powerful electronic communications company on the retail market.

Suðurnes

1036. There are four municipalities in the Suðurnes area, i.e. Reykjanesbær, which is by far the most populous, Grindavíkurbær, Sveitarfélagið Vogar and Suðurnesjabær. Given the market share figures at retail level, the Siminn share which was the highest share in all of the municipalities, is rather similar, i.e. from 42% in Reykjanesbær and to 52% in Grindavíkurbær at end of year 2022. The market share of the second largest party ranges from 21-27%. Siminn market share, without the mobile solutions in question, ranged at the same time from 50-71%, such that the mobile solutions have made a stronger entry in this area, particularly in Suðurnesjabær and in Sveitarfélagið Vogar. This can probably be explained by less fibre deployment in the area than in the Capital City Area. Mila and Ljósleiðarinn are however completing joint fibre deployment in Reykjanesbær and have commenced such co-investment in Sveitarfélagið Vogar and there are also plans for this in Grindavíkurbær in the near future. It is not unlikely that Mila will deploy fibre to Suðurnesjabær during the lifetime of the analysis. The situation at retail level in the area, on the basis of market share figures, is thus generally considerably worse than in the Capital City Area, except that the Siminn market share in Reykjanesbær it is not dissimilar to the pattern in the Capital City Area, and this also applies to the share of the second largest party. A cable system is also operated in that municipality in part of the town, where its operator also sells at retail, such that the market share of parties other than Siminn has a significant spread.

1037. With respect to a prediction on likely development of market share in Suðurnes at retail level, ECOI does not expect great changes during the lifetime of the analysis. Powerful mobile networks have been in place for quite some time in Suðurnes, and one can see their impact in the above specified figures. ECOI considers that this impact has mostly already manifested itself, and in addition to this it is not inconceivable that connections through such networks might decrease as the current and planned fibre deployment progresses. ECOI cannot see any factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis.

[280] Part of the explanation is probably that in the autumn of 2021, Siminn began providing its service over the Ljósleiðarinn fibre network, and a significant and increased number of Siminn customers are therefore on that underlying network.

West Iceland

1038. There are nine municipalities in West Iceland. Síminn has most market share in all these municipalities, that is to say from 39% in Akraneskaupstaður to 75% í Eyja- og Miklaholtshreppur. The situation is somewhat diverse at retail level in these municipalities, though it is similar in some of them.

1039. There one can see that the market share pattern of the most populous municipality, Akraneskaupstaður, is similar to typical market share pattern to be seen in the Capital City Area, and that municipality is close to the Capital City where Ljósleiðarinn has rolled out fibre to almost all of the urban area. The second largest party there has about 35% market share. At that location there is also little impact from the above specified mobile network solution.

1040. Siminn market share is slightly higher in Skorradalshreppur, about 40% against a 29% share of the second largest party. This is a very small municipality with few inhabitants, characterised by a few farms and a large number of summerhouses. There is a significant impact from the mobile network solution in question, and the Siminn share would be 57% without it.

1041. In Borgarbyggð Siminn has 44% market share, while the next party has 27%. Borgarbyggð is an expansive and varied municipality. There one can find among other things a quite sizeable urban nucleus, Borgarnes, where Ljósleiðarinn has rolled out fibre to a significant degree, flourishing agricultural regions and a large number of summerhouses. Without the mobile solutions in question, Siminn would have 55% market share. This means there is a significant use of mobile network solutions in the municipality. In addition to this, fibre has been rolled out to most of the rural areas with state aid and access to those connections is open as in other state aid networks.

1042. The other 6 municipalities are quite similar where Siminn market share ranges from 53% (Hvalfjarðarsveit) and up to 75% (Eyja- og Miklaholtshreppur). The second largest party there has market share ranging from 12-28%. Eyja- og Miklaholtshreppur is a small agricultural area with few inhabitants where fibre was rolled out with state aid, and there is almost no impact from the mobile network solution in question. Hvalfjarðarsveit is a rather sparsely populated agricultural area, but there are also large industrial plants and some summer houses. The municipality rolled out fibre without state aid and still owns the network to which it provides open wholesale access (dark fibre). There is considerable impact from the mobile network solution in question, as the Siminn market share without this would be 63% as opposed to 53%.

1043. Snæfellsbær, Grundarfjarðarbær and Stykkishólmur are typical fishing towns on the northern coast of Snæfellsnes. There the Siminn market share ranges from 55-72% (76-81% without the mobile network solution), while the next party has from 14-21%. There has been little fibre deployment and there is a significant impact from the mobile network solution in question. Finally, there is Dalabyggð, an agricultural area with one urban nucleus, Búðardalur. There Siminn has 71% market share (80% without the mobile network solution), which means that there is significant impact from the mobile network solution in that area. The next party has 15% market share.

1044. With the above in mind, Siminn has a dominant position on the basis of market share in the 6 last mentioned municipalities, while the market share is more similar to that in the Capital City Area in the municipalities Akraneskaupstaður, Borgarbyggð and Skorradalshreppur.

1045. With respect to a prediction on likely development of market share in West Iceland at retail level, ECOI does not expect great changes during the lifetime of the analysis. Mobile networks have already had significant impact in many of these municipalities as fibre deployment is small and one can see their impact in the above specified statistics. ECOI considers that this impact has mostly already manifested itself, and in addition to this it is not inconceivable that connections through such networks might decrease as potential fibre roll-out in the area progresses, particularly in the fishing municipalities on the northern coast of Snæfellsnes. There, Mila is in the best position to deploy fibre with its trunk network with national coverage, whereas Ljósleiðarinn does not own or have access to a trunk network to that location, except by leasing it from Mila or Orkufjarskipti where it is uncertain that the terms offered by these parties would be feasible for Ljósleiðarinn. ECOI cannot see any factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis, at least not to the extent that the Siminn share would be significantly diminished.

West Fjords

1046. There are nine municipalities that belong to the West Fjords. In by far the most populated part of this sparsely populated region, Ísafjarðarkaupstaður, Snerpa has the highest market share, which is 42% against a Siminn share of 37%. In the next largest populated part of the region, Bolungarvíkurkaupstaður this is reversed, as Siminn has 43% there against a Snerpa share of 31%. The mobile network solution in question has some impact in these municipalities. Snerpa, which is a vertically integrated company, has in recent years deployed fibre to a large part of Ísafjörður and to a significant part of Bolungarvíkurkaupstaður. Mila also has an extensive copper network there and has also deployed some fibre in Ísafjörður. Competitive conditions on the retail market in these municipalities are therefore quite good on the basis of these criteria.

1047. Súðavíkurhreppur is in the same area as the above specified to municipalities but is much less populous. Mila has deployed fibre to a considerable extent there, as has Snerpa also. Siminn has 55% market share there while the next party has 28%. The mobile network solution in question has a rather small impact there.

1048. In 5 municipalities, i.e. Reykhólahreppur, Tálknafjarðarhreppur, Vesturbyggð, Kaldrananeshreppur and Strandabyggð, the Siminn position is very strong, with a market share, ranging from 68 to 94%. The next party has 6-17% market share. The impact of the mobile network solution in question is significant there, particularly in Reykhólahreppur, Vesturbyggð and Strandabyggð.

1049. In Árneshreppur, the least populated municipality in the country, Síminn has 48% against a 35% share of the next party. There are very special circumstances in this municipality, where most bitstream has been over mobile networks, but work is being done

on fibre roll-out there. It is not clear how retail will develop there, but this is a case of very few connections, i.e. a total of 40.

1050. With respect to a prediction on likely development of market share in West Fjords at retail level, ECOI does not expect great changes during the lifetime of the analysis. Mobile networks have already had significant impact in many of these municipalities as fibre deployment is small and one can see their impact in the above specified statistics. ECOI considers that the impact has already manifested itself, but the mobile network companies have been increasing 5G roll-out in the area, making it difficult to predict its impact. It is not clear whether the number of people using mobile networks will increase, but there is likely to be an increase in those who use 5G at the expense of 4G. Nor is it inconceivable that connections over mobile networks will decrease as the potential fibre roll-out in the area progresses. Mila is in the best position here to roll out fibre to the municipalities with less fibre coverage with its trunk network with national coverage, as Snerpa does not have advantageous access to a trunk network in those areas where fibre has not yet been rolled out. Now Ljósleiðarinn has gained access to two fibre threads on the NATO cable which, inter alia, runs through the municipalities of Reykhólahreppur, Vesturbyggð og Tálknafjarhreppur and into Ísafjarðarkaupstað, but the company lacks a ring connection through Ísafjarðardjúp, over Steingrímsfjarðarheiði and down along Strandir to Hrútafjörður, which Mila has. ECOI cannot see many factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis, at least not to the extent that the Siminn share would be significantly diminished.

Northwest Iceland

1051. There are five municipalities in Northwest Iceland, i.e. Húnabyggð, Húnaþing vestra, Sveitarfélagið Skagaströnd, Skagabyggð and Skagafjörður. Sveitarfélagið Skagaströnd is first and foremost one village, i.e. Skagaströnd. The other municipalities are primarily agricultural areas, but there is also a large urban nucleus at Sauðárkrókur (in Skagafjörður) og and a fairly large urban locality, by Icelandic standards at Blönduós (in Húnabyggð) and Hvammstangi (in Húnaþing vestra). Tengir operates a small fibre network in part of Húnaþing vestra and Mila fibre network reaches just under half of residences and workplaces in the municipality. Míla operates an extensive fibre network in Sveitarfélagið Skagaströnd, Skagabyggð and Skagafjörður, while in Húnabyggð the fibre networks in place are owned by Mila and Húnanet, where fibre deployment is just over 50%. In some municipalities in Northwest Iceland, VDSL still carries some weight, but one can expect the Mila fibre roll-out to continue, given Mila's plans to decommission the copper system. The spread of market share at retail level is similar in all these municipalities where Siminn has from 73% (Skagafjörður) up to 86% (Sveitarfélagið Skagaströnd) market share, and the second largest party has between 6-16% market share. The mobile solution in question has had some impact in these municipalities with the exception of Skagafjörður, particularly in Skagabyggð. The state of retail competition is thus not good in this area, with respect to market share.

1052. With respect to a prediction on likely development of market share in Northwest Iceland at retail level, ECOI does not expect great changes during the lifetime of the analysis. Mobile networks have already had significant impact in many of these municipalities as fibre deployment is not fully completed and one can see their impact in the above specified statistics. The Mila fixed line network is dominant in these regions and infrastructure

competition is not expected during the lifetime of the analysis in the opinion of ECOI, rather that Mila continues its fibre deployment throughout the lifetime. ECOI cannot see any factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis, at least not to the extent that the Siminn share would be significantly diminished.

Northeast Iceland

1053. There are eleven municipalities in Northeast Iceland. What characterises this region, with the exception of Tjörneshreppur, is the extensive fibre network of Tengir, local electronic communications infrastructure company which has deployed fibre in the area for about 20 years. Mila has also been deploying fibre in urban localities in the area, and in addition to this, fibre has been deployed to most of the rural area with state aid. Mila also has access to dark fibre on the Tengir fibre network and Mila is a larger bitstream provider on the Tengir fibre network than Tengir itself. Tjörneshreppur has its own fibre network, to which both Tengir and Mila provide bitstream access.

1054. Akureyrarbær, one of the largest towns in the country and the capital of North Iceland, is located there. This is an important agricultural area, which also contains Akureyri and a number of large urban localities with substantial fisheries operations, i.e. Fjallabyggð (Siglufjörður and Ólafsfjörður) and Dalvíkurbyggð. Húsavík is a large urban locality in Norðurþing. In addition to this there are a number of small fishing villages like Grenivík (in Grýtubakkahreppur), Kópasker and Raufarhöfn (in Norðurþing) and Þórshöfn (in Langanesbyggð). The impact of the mobile network solution in question is rather small there with the exception of in Fjallabyggð, Dalvíkurbyggð and in Akureyri, and these are all urban localities.

1055. In 8 of these 11 municipalities, Siminn is in a very strong position on the retail market with 59-82% market share and has for example 62% market share in Akureyri. Sýn has on the other hand, has most market share in 3 sparsely populated municipalities, i.e. Svalbarðsstrandarhreppur (485 inhabitants), Grýtubakkahreppur (379 inhabitants) and Tjörneshreppur (60 inhabitants) with 53-55% market share against Siminn 36-42% market share. It seems that Siminn has adopted the policy of generally not purchasing bitstream service from Tengir, and in areas where Tengir bitstream service has grown, it is mostly Sýn that purchases that service, which explains Sýn's growing market share in Tengir territory. In most locations in the area, retail competition is not healthy and Tengir does not offer an access option corresponding to Mila's Access Option 3 as the bitstream is delivered in Reykjavik where most Internet service providers operate.

1056. With respect to a prediction on likely development of market share in North Iceland at retail level, ECOI does not expect great changes during the lifetime of the analysis. Market share figures have not changed much since mid-2021, apart from insignificant changes that took place in the figures from the end of 2022 resulting from the mobile network solution. Mobile networks have already had some impact in many of these municipalities as fibre deployment is not fully completed and one can see their impact in the above specified statistics. The area is characterised by the Tengir extensive fibre network, and in addition to this Mila has at this location, an extensive copper network and a growing fibre network. It is likely that fibre deployment from both parties will continue throughout the lifetime of the

analysis, but ECOI cannot see this resulting in major changes in the division of market share at retail level. ECOI cannot therefore see many factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis. [...].

East Iceland

1057. There are only 4 municipalities in East Iceland, i.e. Múlaþing (about 5,200 inhabitants), Fjarðabyggð (just under 5,300 inhabitants), Vopnafjarðarhreppur (just under 700 inhabitants) and Fljótsdalshreppur (about 100 inhabitants).

1058. Múlaþing is a very expansive and varied municipality, with flourishing agricultural areas, and also with urban areas like Egilsstaðir and Fellabær in Hérað and the fishing villages Seyðisfjörður, Borgarfjörður eystri and Djúpivogur. Fibre deployment in the municipality is now over 50%, where Mila has most deployment in that municipality. At Egilsstaðir, Austurljós has deployed fibre to most of the town, as Mila has also. Fibre has been deployed to most of the rural areas, but there is little deployment in the fishing villages. The mobile network solution in question has little impact in this area.

1059. Fljótsdalshreppur is a very sparsely populated agricultural area near Múlaþing, with no urban localities. A fibre network has been deployed by Fljótsdalshreppur in the area, which reaches 88% of residences and companies. HEF utilities has also deployed fibre in the municipality, but to a very small degree. Fljótsdalshreppur fibre network is connected to the Austurljós system core where that company operates bitstream equipment for the network. Tengir had been operating bitstream equipment in that location but decommissioned those operations in 2023. The mobile network solution in question has considerable impact in this area.

1060. Vopnafjarðarhreppur in Northeast Iceland comprises an urban locality (Vopnafjörður), a fishing village and an agricultural region. Tengir has also recently deployed fibre there. The mobile network solution in question has little impact in this area.

1061. Fjarðabyggð on the country's east coast comprises first and foremost fishing village communities Neskaupsstaður, Eskifjörður, Reyðarfjörður, Fáskrúðsfjörður, Stöðvarfjörður and Breiðdalsvík. There is also some agriculture in the area and a large aluminium smelter at Reyðarfjörður. There is little fibre deployment there, but some by Mila. Therefore, copper connections are the most common type of fixed line connection at that location. One can expect Mila to gradually deploy fibre to these urban nuclei during the lifetime of the analysis. The mobile network solution in question has considerable impact in this area.

1062. A very high Siminn market share characterises Fjarðabyggð, Múlaþing and Vopnafjarðarhreppur, from 65% (Fjarðabyggð og Múlaþing) to 80% (Vopnafjarðarhreppur). The market share of the second largest party ranges from 11-18%. Sýn is however in a strong position in the sparsely populated Fljótsdalshreppur, that is to say 67%, but there are only 100 inhabitants and the number of connections only about 43 over fixed line network and mains connected mobile network routers.

1063. With respect to the prediction on likely development of market share in East Iceland at retail level, ECOI does not expect great changes during the lifetime of the analysis. Market share figures have not changed much since mid-2021, apart from insignificant changes that

took place in the figures from the end of 2022 resulting from the mobile network solution, except that the Siminn market share has declined somewhat in Múlaþing, but it is still quite high at 65%. Mobile networks have had some impact there, particularly in Fjarðabyggð and Fljótsdalshreppur. Mila has an extensive copper network there and a growing fibre network and fibre has been deployed to the rural area with state aid in addition to this, and Austurljós and HEF Utilities have deployed fibre to the area around Egilsstaðir, as has Mila also. It is likely that fibre deployment will continue throughout the lifetime of the analysis, particularly in urban parts of Múlaþing and Fjarðabyggð by Mila, but ECOI cannot see that this will cause major changes regarding the division of market share at retail level. ECOI cannot therefore see any factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis. The NATO fibre cable lies through a number of urban areas in this part of the country, which means that Ljósleiðarinn can offer trunk line connections into these areas during the lifetime of the analysis, which may possibly have an impact on the possibilities of smaller electronic communications companies to enter the area. ECOI does however not expect that Ljósleiðarinn will embark on fibre deployment in this area, at least not in the near future.

South Iceland

1064. South Iceland is the region with most municipalities, of which there are 15. This region covers a large area, reaching from the borders of the Capital City Area in the south-west part of the country to Höfn í Hornafirði in the south-east of the country, and also includes the inland part of South Iceland, which is an important agricultural region. There one can find flourishing fisheries communities in places like Westman Islands, Höfn í Hornafirði and Þorlákshöfn. This region is also a very popular tourism area. There are also a number of large and average urban nuclei in South Iceland, i.e. Árborg (Selfoss, Stokkseyri and Eyrarbakki), Westman Islands, Höfn í Hornafirði, Hveragerði, Þorlákshöfn, Hella and Hvolsvöllur, with the addition of smaller urban nuclei like Laugarvatn, Flúðir, Vík í Mýrdal and Kirkjubæjarklaustur.

1065. Division of market share in the area varies significantly and is quite different from other geographic areas outside the Capital City Area and Suðurnes. Síminn is in a strong position in Westman Islands, Sveitarfélagið Árborg, Sveitarfélagið Hornafjörður and Skaftárhreppur with 51% market share in (Sveitarfélagið Árborg) and up to 68% (Sveitarfélagið Hornafjörður). The second largest party there has market share, ranging from 16-21%. The mobile network solution in question has a significant impact here, where the Siminn share without it at these locations would be in the range of 58-84%. It is clear that the situation on the retail market and these municipalities is not good on the basis of this criterion.

1066. In a further 7 municipalities, Siminn has the largest market share, but less than 50% (Rangárþing eystra, Rangárþing ytra, Hrunamannahreppur, Hveragerðisbær, Gnúpverjahreppur, Bláskógabyggð and Flóahreppur), with a market share ranging from 34% (Bláskógabyggð) up to 48% (Rangárþing eystra). The market share of the second largest party ranges from 25-38%. The impact of the mobile network solution in question is significant here, except in Hveragerði and Gnúpverjahreppur. For example, the Siminn share drops from 72% to 46% in Hrunamannahreppur with the mobile network solution, an area that includes the Flúðir urban nucleus and where there is also considerable agriculture and many summer houses. The same can be said about Bláskógabyggð, where the Siminn market share drops from 55% to 34% as a result of the mobile network solution. There one can find the urban

localities Laugarvatn, Laugarás and Reykholt, and this is an important agricultural area, tourism area and there are many summer houses. In these municipalities, the situation on the retail market is therefore much better using this criterion than in the 4 first named municipalities.

1067. In 3 municipalities, Sýn has the highest share, Mýrdalshreppur (46%), Ásahreppur (50%) and in Sveitarfélagið Ölfus (31%). The Siminn share as the second-largest party in these areas follows closely behind, except in Mýrdalshreppur where the difference is 11%, but that is an area where the mobile solution in question has a very significant impact. At that location, Siminn share without the solution would be 51% and 35% with it. The mobile network solution has however little impact in Ásahreppur and in Ölfus municipality. One can thus say that the situation on the retail market is significantly better in these municipalities using this criterion than in the 4 first mentioned municipalities.

1068. In the last municipality, i.e. Grímsnes- og Grafningshreppur it is however Nova that has highest market share at 43% while Siminn comes next with 32% and Sýn with 22% and Hringdu with the rest. This is a sparsely populated municipality with just over 500 inhabitants, only two very small urban localities (Sólheimar and Borg), but the country's largest summerhouse area is in this municipality. This means an enormous impact in this area from the mobile network solution in question. Siminn would have 73% market share if the mobile network solution in question were not included. The situation on the retail market in this municipality is therefore much better than in the first-named 4 municipalities, first and foremost because of the above specified mobile network solution.

1069. With respect to the prediction on likely development of market share in South Iceland at retail level, ECOI does not expect great changes during the lifetime of the analysis. Market share figures have not changed much since mid-2021 in the 4 first-named municipalities where the situation is worst, apart from a few changes that took place in the figures from the end of 2022 resulting from the mobile network solution. In the Westman Islands, where Mila copper networks dominated, there is an electronic communications company called Eygló that is owned by the municipality, currently deploying a fibre network, which it plans to complete during the next 3 years. The company plans to provide open access to market 3a and therefore does not intend to operate its own bitstream equipment or to operate in retail.

1070. In Mýrdalshreppur, Ásahreppur, Rangárþing ytra, Hrunamannahreppur, Skeiða- og Gnúpverjahreppur, Bláskógabyggð and Flóahreppur, Sýn operated bitstream equipment, and also to a very small extent in Hornafjörður municipality and in Skaftárhreppur. After Ljósleiðarinn purchased Sýn equipment by the end of September 2023 was then able to provide service at more locations than before. This can increase access of more electronic communications companies to these markets and the retail competition will gradually approach the level that it is at in the Capital City Area.

1071. Mobile networks have had a major impact in a number of municipalities in this region and considerable impact on others, as stated above, and have had a particularly large impact in sparsely populated municipalities that have a high proportion of summerhouses. In that location, Mila has an extensive copper network and a growing fibre network, and the fibre has been deployed to the rural area with state aid. In addition to this, Ljósleiðarinn has deployed its fibre network to a greater or lesser degree in urban areas in municipalities

nearest to the Capital City Area, i.e. in Hveragerði, Ölfus municipality, Árborg municipality, Rangárþing ytra (Hella) and Rangárþing eystra (Hvolsvöllur). There was discussion here above on the Eygló fibre deployment in Westman Islands. In Hornafjörður municipality there has been little fibre deployment in the municipality's major urban locality, Höfn, but fibre has been deployed to the rural area with state aid. It is likely that fibre deployment will continue at least in urban areas throughout the lifetime of the analysis, but ECOI cannot see this resulting in major changes in the division of market share at retail level. ECOI cannot therefore see any factors that could cause rapid and significant changes to market share in the area throughout the expected lifetime of the analysis.

5.4.2.6 Assessment of concentration by municipality (HHI-index)

1072. The concept "concentration" originates from the theory of industrial economics and refers to how turnover on a specific market is divided between the companies operating on the market, i.e. what their market share is, each individually. Market share is generally calculated from company revenue, but the nature of some markets is such that it is more convenient to assess the share from other economic factors, such as sold units.

1073. In order to assess concentration on the market, a concentration index is calculated that provides a good indication on how active competition is on the relevant market. If there are a few companies or even one with high market share, concentration is high and there is a likelihood that competition is limited.

1074. Concentration is often assessed by calculating what is called the Herfindahl-Hirschman index (abbreviated to HHI-index). This is done by squaring the market share of each company on the market being examined and then summing these numbers to get the index value for the market in question: $HHI = MH_1^2 + MH_2^2 + MH_3^2 + MH_4^2 \ldots + MH_n^2$

1075. In the equation above MH_1^2 means the market share of the company that has the highest share (number 1) squared, MH_2^2 for the market share of company number 2 squared etc. If all the three companies working on a specific market have shares of 50%, 30% and 20% respectively, the value of the HHI-index is 3,800 (= (50 × 50) + (30 × 30) + (20 × 20)).

1076. The HHI-index can range from being close to zero where very many small companies operate on a market and up to 10,000, which is the value when one company has 100% share of the market (monopoly). Markets where the HHI-index is less than 1,000, are generally considered to be competitive markets. Markets with HHI-index in the range of 1,000 to 1,800 are considered to be moderately concentrated markets. Markets with a value in the range of 1,800 to 2,000 are close to being very concentrated markets.

1077. Markets which have an HHI-index over 2,000 are generally considered to be very concentrated markets. One can thus say that when a few large companies operate on a market, the concentration index is relatively high which reflects rather limited competition. On the other hand, the concentration index is low when there are only smaller companies operating on a specific market, and this indicates that competition on the market is active. Metrics for concentration on markets are frequently used by competition authorities to assess the impact of planned mergers on competitive activity on markets. It is appropriate to note that various other considerations are also taken into account when assessing the impact

of a merger on competition, such as financial strength, access barriers to markets and potential optimization resulting from the merger.

1078. On markets characterised by cross ownership or single ownership, i.e. when shareholders (owners) of a company also own shares in its competitors, the traditional HHI-index can underestimate concentration on the market. In those instances, it is possible to use what is called the Modified HHI.[281]

1079. HHI-index is considered to be the most reliable indication of how much concentration there is on a market and whether or when there is reason to monitor markets more closely and also further concentration subsequent to mergers.[282] In the Horizontal Merger Guidelines from the EU Commission from 2004[283] the impact of such mergers is among other things, assessed with the HHI-index. In the Guidelines it is considered unlikely that a merger will result in competition barriers when the HHI-index subsequent to merger is less than 1,000. The same applies if the value is between 1,000 and 2,000 and the impact of merger less than 250 points or if the value is over 2,000 and the impact of the merger is less than 150 points. This does however not apply in the following case:

- Merging with the company that is a potential or new competitor on the market.
- Merging with the company that has been a leader in innovation on the market, even though this has not brought increased market share.
- Substantial cross-ownership of parties to the market.
- Merger with "maverick" company. Indications that collusive measures have or are taking place.
- Merger with company that has at least 50% market share.

[281] More detailed discussion on this issue can be found in Annex 5 to the EU Commission Decision from 27 March 2017 in case no. M.7932 Dow/DuPont, *"Annex 5 to the Commission Decision – Assessment of the effects of common shareholding on market shares and concentration measures."*

[282] The HHI-index is used in implementing competition rules from the EU Commission and in many states, e.g. in the Faroe Islands and in the United States. In an item published 29 July 2015 on the web page of the competition department of the United States, Ministry of Justice, it is stated that the Federal Trade Commission (FTC) uses the HHI in merger cases: *"The term "HHI" means the Herfindahl–Hirschman Index, a commonly accepted measure of market concentration. The HHI is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of 30, 30, 20, and 20 percent, the HHI is 2,600 ($30^2 + 30^2 + 20^2 + 20^2 = 2,600$). The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. The agencies generally consider markets in which the HHI is between 1,500 and 2,500 points to be moderately concentrated and consider markets in which the HHI is in excess of 2,500 points to be highly concentrated. See U.S. Department of Justice & FTC,* ***Horizontal Merger Guidelines*** *§ 5.2 (2010). Transactions that increase the HHI by more than 200 points in highly concentrated markets are presumed likely to enhance market power under the Horizontal Merger Guidelines issued by the Department of Justice and the Federal Trade Commission."*

[283] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A52004XC0205%2802%29.

1080. ECOI has decided to evaluate the HHI-index when assessing concentration on the retail market in each municipality. HHI-indices will thus provide indications of the competitive conditions on the retail market in each individual municipality on the basis of the level of concentration in the relevant area. It is appropriate to point out that industries that have proportionately high fixed costs can by nature be oligopoly markets. One could say that infrastructure companies on the electronic communications market are to some extent in a comparable situation, as high investment and sunk costs reflect high fixed costs in their operations which naturally leads to there not being many companies on each market. This means that HHI-indices are quite high on such markets compared to other markets where start-up costs and tied capital are significantly less and where more companies operate and compete with each other.

1081. Here, however, HHI-indices are being calculated on retail market where the above considerations apply to a lesser extent than if one were calculating HHI-index e.g. for market 3a and even to some extent for market 3b. In the above specified DBA geographic analysis in Denmark in 2021, which was discussed in Section 5.1.10.7, the NRA used, among other things the HHI-index, along with market share on the retail market, to assess competition at retail level. For there to be active competition in a specific area at retail level, the market share of the largest party needed to be more than a specific percentage proportion and the HHI-index had to be under 1,500 points. No area was under these concentration levels, so DBA decided to examine all the areas more carefully at wholesale level. There is also the fact that in a consultation document on draft market analysis by the Norwegian NRA (NKOM) on markets 3a and 3b dated 14 June 2023, which is discussed in Section 5.1.10.10 here above, it was stated that concentration was acceptable on the relevant retail market if the HHI-index was 2,000 or lower. Because of Iceland's small size, ECOI has decided to also use 2,000 points, like Norway.

1082. In the Table below one can see the conclusions for these calculations by municipality in this country. In short, concentration is not less than 2,000 points at retail level in any municipality in this country, and the proportion was lowest at the end of 2022 in Reykjavik, where it stood at 2,663 points. The highest proportion was in Kaldrananeshreppur, at 8,937 points. It is common that at many locations in the countryside, the proportion is in the range of 4,000-7,000 points.

Table 5.5 HHI in each municipality by area[284]

Capital area

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Reykjavíkurborg	2,694	2,684	2,671	2,658	2,663
Kópavogsbær	3,042	3,021	3,025	3,008	2,930
Seltjarnarnesbær	3,154	3,096	3,056	2,999	2,965
Garðabær	3,428	3,367	3,328	3,345	3,243
Hafnarfjarðarkaupstaður	3,081	3,084	3,040	3,030	2,946
Mosfellsbær	3,114	3,120	3,096	3,076	2,967
Kjósarhreppur	4,025	3,920	3,927	3,826	3,033

Suðurnes

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Reykjanesbær	3,995	3,226	3,124	3,129	2,808
Grindavíkurbær	5,695	5,550	5,320	5,082	3,530
Sveitarfélagið Vogar	4,728	4,459	4,451	4,289	2,953
Suðurnesjabær	5,770	5,746	5,640	5,418	3,483

West

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Sveitarfélagið Stykkishólmur	7,021	6,855	6,743	6,535	5,461
Akraneskaupstaður	3,208	3,255	3,177	3,168	3,085
Skorradalshreppur	4,876	4,340	4,340	4,216	3,257
Hvalfjarðarsveit	5,069	5,098	4,944	4,857	3,748
Borgarbyggð	3,981	3,909	3,856	3,715	3,154
Grundarfjarðarbær	5,813	5,848	5,797	5,974	3,869
Eyja- og Miklaholtshreppur	5,773	5,937	6,019	5,937	5,862
Snæfellsbær	6,866	6,866	6,776	6,651	4,864
Dalabyggð	6,925	6,914	6,822	6,637	5,339

[284] ECOI does not have information on the number of mains connected network routers for this period and the HHI is calculated for retail market share on the basis that these connections are added to the final figures for bitstream over fixed line networks at the end of 2022.

Westfjords

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Bolungarvíkurkaupstaður	4,648	4,236	4,000	3,826	3,072
Ísafjarðarbær	4,105	4,098	4,087	4,030	3,313
Reykhólahreppur	7,817	8,027	8,048	7,924	5,824
Tálknafjarðarhreppur	6,556	6,463	6,229	6,098	5,368
Vesturbyggð	6,832	6,572	6,524	6,532	4,939
Súðavíkurhreppur	4,653	5,061	4,900	4,746	3,917
Árneshreppur				10,000	3,713
Kaldrananeshreppur	9,217	9,185	9,035	9,003	8,937
Strandabyggð	5,936	5,757	5,783	5,709	4,943 [285]

North-west

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Húnabyggð	7,047	6,903	6,796	6,723	5,782
Skagafjörður	6,600	6,535	6,297	5,782	5,556
Húnaþing vestra	8,024	7,718	7,658	7,223	5,949
Sveitarfélagið Skagaströnd	8,218	8,136	8,256	8,247	7,507
Skagabyggð	10,000	9,445	9,445	9,429	7,254

North-east

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Tjörneshreppur	4,438	4,592	4,704	4,704	4,704
Þingeyjarsveit	5,026	5,032	4,894	4,911	4,882
Langanesbyggð	7,814	7,548	7,499	7,500	6,912
Akureyrarbær	5,643	5,576	5,316	5,229	4,492
Norðurþing	7,021	6,794	6,725	6,683	6,168
Fjallabyggð	6,703	6,884	6,725	6,816	4,735
Dalvíkurbyggð	6,969	7,010	6,808	6,766	5,644
Eyjafjarðarsveit	6,987	7,109	6,488	6,473	5,820
Hörgársveit	5,158	5,280	4,748	4,724	4,746
Svalbarðsstrandarhreppur	4,543	4,476	4,444	4,328	4,501
Grýtubakkahreppur	4,952	4,972	5,104	4,973	4,224

[285] Árneshreppur has the unique position that there was no bitstream over fixed line network in that location until the municipality commenced fibre deployment. Árneshreppur was awarded a grant from the Telecommunications Fund, and it is expected that the fibre deployment will be completed in 2024.

East

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Fjarðabyggð	6,600	6,528	6,452	6,373	4,660
Múlaþing	6,398	6,157	5,730	5,191	4,584
Vopnafjarðarhreppur	7,325	7,328	7,141	7,320	6,584
Fljótsdalshreppur	8,252	8,252	8,301	5,853	5,035

South

Municipality	30.6.2021	31.12.2021	30.6.2022	31.12.2022	31.12.2022 incl. mobile network
Vestmannaeyjabær	6,104	5,897	5,977	5,929	4,189
Sveitarfélagið Árborg	4,231	4,148	4,046	3,988	3,522
Sveitarfélagið Hornafjörður	6,588	6,409	6,444	6,314	4,965
Mýrdalshreppur	4,431	4,470	4,452	4,430	3,605
Skaftárhreppur	7,531	7,604	7,355	7,113	4,588
Ásahreppur	4,059	3,996	3,981	3,722	3,601
Rangárþing eystra	4,085	4,206	4,253	4,281	3,329
Rangárþing ytra	3,574	3,516	3,481	3,400	2,981
Hrunamannahreppur	5,712	5,810	5,590	5,452	3,460
Hveragerðisbær	2,843	2,815	2,786	2,823	2,770
Sveitarfélagið Ölfus	2,711	2,710	2,707	2,693	2,762
Grímsnes- og Grafningshreppu	6,224	6,104	5,651	5,543	3,365
Skeiða- og Gnúpverjahreppur	3,767	3,756	3,739	3,748	3,339
Bláskógabyggð	4,155	4,185	3,985	3,722	3,084
Flóahreppur	3,837	3,755	3,719	3,692	3,275

5.4.2.7 Pricing on the retail market by municipality

1083. Another important criterion when identifying whether competitive conditions may be variable between areas is the possible price difference between them at both retail level and wholesale level. If pricing of the potential SMP operator and pricing of his competitors are the same or similar across the whole country, i.e. not significantly variable between areas within the companies in question, this could provide indications that competitive conditions are not sufficiently heterogeneous between areas to justify segmented geographic markets or varying obligations by geographic area. This on its own does not however, always have to be the reality, as from the point of view of consumers, there could be a significant difference between "competitive areas" and areas where limited or no competition exists, despite the fact that the prices of the potential SMP are the same across the country.[286]

1084. The reason could be that when the potential SMP operator sets the same price across the whole country, with the objective of maximising profit, he has to find a balance between pricing where he has a monopoly position (dominant position) and lower prices where he is in competition with other players on the market. The likely conclusion is a compromise between these two prices, as the price is lower as the "competitive area" is larger. If the

[286] See, pages 27-28 in the above specified BEREC Common Position from 2014.

"competitive area" is sufficiently large, the pricing of the potential SMP operator should be rather low, and in addition to this the price difference between him and his competitors should be small. Under such circumstances, it could be justifiable to conclude that the geographic market is the whole country because of common pricing constraint. In those instances where the "competitive area" is on the other hand, small, the "monopoly price" has more weighting in the pricing decision of the possible SMP operator and there can thus be a significant difference between his price and that of his competitors. This probably leads to a situation where the potential SMP operator has a low market share in "competitive areas". This means that consumers could perceive a significant price difference. While consumers can only purchase relatively expensive service from the potential SMP operator in areas where there is little or no competition, a relatively large number of them can purchase less expensive service from the competitors in the "competitive areas". In such instances, considerations about pricing constraint cannot be good arguments for having the country as one geographic market, despite the fact that the potential SMP operator maintains equal prices across the whole country.[287]

1085. Another aspect that NRAs must keep in mind when they examine pricing in geographic analysis, is that uniform pricing does not necessarily indicate that the country is one geographic market if the pricing is the consequence of obligations subsequent to the designation of an undertaking as having significant market power. The discussion here above applies first and foremost to instances where the potential SMP operator prices his product in the same manner across the country entirely and of his own free will or where he is obliged to do so in another manner than subject to such obligations. If the uniform price across the country is the conclusion of obligations that were imposed subsequent to market analysis on the market being examined, the NRA in question must predict what the position would be if the obligations were not in force (the Modified Greenfield Approach).

1086. If the potential SMP operator does not maintain uniform prices across the country, this could give strong indications that differing competitive conditions exist between areas. This gives an indication that competitive pressure is greater in those areas where prices are lower. Price difference can however also reflect varying underlying costs by area. The relevant NRA must therefore, under such circumstances, assess whether the price difference results first and foremost from differing underlying costs or differing competitive conditions by area, or both.[288]

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[287] See e.g. page 29 in document Cave, M., Stumpf, U., Valletti, T: A review of certain markets included in the Commission´s Recommendations on Relevant Markets subject to ex ante Regulation, from 2006, states among other things: *" … absent significant market power regulation, a firm with market power subject to a uniform pricing constraint chooses a profit-maximizing price based on its demand curve in the universal service area as a whole rather than the distinct demand curves where it faces different levels of competition. As a result, constraints on its behaviour in competitive areas are not extended to less competitive ones, but constraints across all areas are averaged or pooled. If the resulting price contains excess profits, because of a large weight of non-competitive customers, rivals in competitive areas will either force possibly localized price cuts by the incumbent – if they are allowed – or will enjoy considerable competitive advantage. In either case conditions of competition will differ."*

[288] In the above specified Decision by the EU Commission from 7 February 2020 in the case of Sweden, which was described in detail here above, it was stated that Telia collected the same price across the country for access through fibre to detached dwellings on market 3a. The company's fibre network however only reached 37% of

1087. Another aspect that needed to be examined is whether prices are comparable or variable between the potential SMP operator and his competitors.

1088. If prices are variable between areas, this does not necessarily mean, as previously stated, that the market should be automatically segmented in accordance with such price difference of the potential SMP operator. The problem with such an approach was that the potential SMP operator could then have a direct impact on geographic definition of the relevant market, including segmentation of areas, and/or price difference could change at any particular time in accordance with his pricing policy. It is therefore more appropriate to examine the reasons for variations in pricing, i.e. whether they result first and foremost from varying competitive pressure between areas or issues such as operational distribution costs, economy of scale and population density.

1089. It was stated in the above specified BEREC Common Position from 2014, that if possible, development of pricing and or price difference over time should be analysed. On specific markets, it could also be appropriate to examine pricing in connection with quality or characteristics/attributes of the service, but such aspects could also vary between areas.

1090. It is important to examine pricing and possible price differences, both at wholesale and retail level. In this Section, a potential price difference in retail will be examined while in Sections 5.5 and 5.6 a potential price difference on the relevant wholesale markets will be examined.

1091. At retail level, it is not possible to identify any price difference by area with Siminn. The same can be said about competitors of Siminn at retail level. Then there is no significant price difference between Siminn and the company's competitors in Internet service at national level as was covered in Section 3.1.2 here above. ECOI considers that these are certain indications that there is no need to segment geographic markets in this country in the retail market in question, as consumers here experience no difference in this respect.

1092. In Section 5.1.4.2 here above, where there is a discussion on Recommendation from the EU Commission on relevant markets from December 2020, it is stated among other things that an investigation of pricing can be important when assessing whether competitive conditions vary between geographic areas. There, the Commission urges NRAs to be careful to use not only prices as grounds for assessing varying competitive conditions, as the fact

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the population. On the other hand, the wholesale price for connections to apartment buildings varied by area. This difference seems, in the opinion of the PTS, to be based on population density and varying deployment costs. Local networks had a tendency to price wholesale access in accordance with costs and only to a limited extent according to pricing by Telia. The prices of local networks in instances of connections to apartment buildings were anything from under SEK 500 and up to over SEK 4,000, while to detached buildings they ranged from SEK 140 to SEK 220. The Commission had agreed with BEREC in that case that comparable prices across the whole country were not, in isolation, sufficient arguments for the geographic market being the country as a whole, particularly if such comparable prices only reached 37% of the wholesale market in question as was actually the case in Sweden. With regards to pricing criteria, it was also necessary to assess prices of parties other than Telia. PTS had not succeeded in demonstrating that prices of the local networks were comparable with those of Telia. On the contrary, PTS had identified a difference between wholesale prices of the various local networks. In the light of the above, the Commission issued an opinion to the effect that homogeneity in access prices on market 3a for fibre did not exist in Sweden. The PTS arguments to this extent were thus inadequate to come to the conclusion that the geographic market should be the country as a whole.

alone that prices are uniform between geographic areas does not necessarily lead to the conclusion that this was the case of a single uniform market. The Commission among other things referred to paragraph 113 in the BEREC Common Position from 2014 in this connection, and to the above specified Swedish case.

1093. Mila has however pointed out that in the Ljósleiðarinn operational territory, the set-up of Mila household connections for fibre local loops is without charge, but elsewhere it is at the expense of users. This appears to be the only price difference that users experience between areas. In the opinion of the ECOI, it is not a tipping point with respect to whether the wholesale market in question should be segmented geographically or not, that Mila on-site services are less expensive in the immediate environment of the company's operational sites.

1094. With the above in mind, the fact in isolation that prices of Siminn and the company's competitors do not vary between areas is not an indication that this is a case of separate geographic markets in this country at retail level. But as stated above, pricing is only one of many factors that should be examined in such an assessment. As the main task of this analysis is to define the competition on the relevant wholesale markets, where geographic delineation of those markets is an important issue, more attention shall be paid to potential price difference at wholesale level in Sections 5.5 and 5.6 here below.

5.4.2.8 Other aspects, including marketing behaviour, marketing policy, service offer, quality, characteristics and functionality/usefulness of connections and nature of demand by area

1095. Other criteria that NRAs can take into account for the purpose of revealing a possible difference in competitive conditions on the relevant retail markets between areas are for example:

- Potential difference by area of market behaviour of retail operators, among other things, marketing and market or sales policy.

- Possible difference by area in characteristics and attributes of service, e.g. quality, supply and functionality or usability.

- Nature of demand, which can be local, i.e. bound to one area or a number of areas without covering the whole country.

1096. With respect to the relationship between the above specified criteria, one may assume that the greater the variation in competitive conditions between areas, the greater the correlation should be between areas where each criterion is fulfilled. In other words, one could say that where there is a large difference in competitive conditions between areas, then this can be among other things explained by:

- Many market players that have or could possibly enter the market in the area or areas in question.

- A lower market share of the SMP operator in the area or areas in question.

- Lower prices of the SMP operator and/or of his competitors in the area or areas in question.

1097. With respect to service offer of retailers on the relevant retail markets, this is the same, or almost the same, in all areas where the relevant access technology is in fact being offered. This applies among other things to bundles, but there can be a small difference in them, depending on whether the connection is over a fixed line network or through the mobile network solution in question. IPTV is for example not offered over a mobile network but streamed over the public Internet.

1098. Mila stated in its comments on the market analysis that was completed with the ECOI Decision no. 5/2021 that there was a difference in service offered by area, as Mila offered 1 Gb/s speed in the competitive areas, but only 500 Mb/s outside them. It is no longer the case that the company only offers 1 Gb/s speed in those areas that Mila defined as competitive areas, but the company has been upgrading all its fibre connections to 1 Gb/s. It cannot be seen that this difference, that was formally in place with Mila, was manifested in Siminn marketing, nor with other service providers that have access to the Mila fibre network, neither with respect to service over fibre or VDSL on a copper network. One can however note that on 22 August 2023, Mila, announced its plans to adopt an XGS-PON solution which could technically offer up to 10 Gb/s symmetric performance and to open the service on 1 October 2023 in the Capital City Area, but such that 10 Gb/s was only on offer in the Múli telephone exchange area, and 2.5 Gb/s elsewhere in the area in the beginning. The whole Capital City Area would then be upgraded to 10 Gb/s performance by 1 April 2024. On 13 September 2023, Ljósleiðarinn announced its plans to offer an upgrade to 10 Gb/s service across its whole operational territory from and including 1 October 2023.

1099. With respect to quality, attributes, characteristics and functionality/usability of connections, there is detailed discussion on these issues in Section 3. There it was among other things stated that differentiation in characteristics of Internet access, such as performance and service quality, was small, if any, except possibly in the case of older generations of the mobile networks in question. One could say that a normal household Internet connection carried the traffic that consumers wanted, with quality that sufficed for their needs. This could be seen in the way that service providers presented their service on the retail market in question. With respect to these issues, it is however not possible to discern any significant difference by geographic area, where the relevant access technology is available. The quality of the relevant access technology, its attributes, characteristics and functionality/usability, is therefore comparable between areas. Other internal quality aspects in the operations of retailers, such as their core systems, capacity of their foreign connections and other aspects that can impact on consumer experience, also appear to be comparable between geographic areas.

1100. ECOI also refers to the ECOI user surveys from 2020 and 2022, where most respondents that had access through VDSL considered that their connections adequately met the needs of the household. Then one can mention that many other factors have an impact on consumer experience with respect to performance of network connections, not least capacity of wireless network connections within homes, which is dependent on very many variables, such as other wireless networks in the vicinity and the nature and thickness of partition walls in the premises.

1101. Marketing policy of retailers of Internet service must be considered homogeneous for the whole country, both with respect to fixed line network solutions and the mobile network solutions in question. When the marketing mix elements are examined, and they are product, price, promotion and distribution, this is clearly shown.

- The product is the same across the country, Internet service retailers do not have varying components included in the product depending on where it is sold. Technical quality attributes are also the same or so similar across the country that the general consumer perceives no difference. On fibre local loops the connection is either full quality or no connection. There can be a quality difference in connections between VDSL copper local loops, depending on the performance capacity that the copper line can carry, but such instances depend on specific copper lines and the length, and are not systematically different from one area of the country to another. Considerations similar to those described above apply to the mobile network solutions.

- The price of Internet service in retail is the same, wherever the purchaser lives in the country. No retailer in this country offers differing prices for his service on the basis of some kind of geographic division of the country.

- Advertisements on market operations are also comparable across the whole country. There is no evidence of any retailers conducting varying or separate marketing operations in particular areas of the country, such that they are different from those in other areas. It does however occur that retailers launch separate temporary marketing campaigns in specific areas, for example when new access technology is announced in the relevant area.

- Distribution of the product depends on where and how the product is sold. Electronic services are delivered through electronic communications connections, regardless of where they are located in the country. There can be a difference in how consumers commence the business relationship and receive installation of the necessary connections and delivery of equipment at their home, depending on where the consumer lives. But such a difference is rather about whether residence is in an urban area or rural and there is nothing that indicates a systematic difference in areas in the country such that one differentiates from the rest.

1102. When one considers consumer demand, there is nothing to indicate that it in any way differs by geographic area. Internet services are used to fulfil the same or similar needs and do not depend on where in the country the consumer or company is located. The same can be said about other service provided through broadband connections such as streamed TV or telephony service. Increased access to various kinds of TV material has for some time been one of the main drivers of consumer demand on the retail market in question. In addition to the IPTV systems of Siminn and Sýn, various OTT operators provided service through the public Internet access of their customers, to carry data to consumers. Such streamed TV is received with acceptable quality in the opinion of ECOI, in the mobile network solutions here in question. In the opinion of the ECOI, it is not possible to discern a difference in demand for the above specified broadband service on the basis of area, neither with respect to Siminn service or that of its competitors.

1103. With the above in mind, ECOI does not consider that issues such as market behaviour, market policy, service offer, quality, attributes, characteristics and functionality/usability of connections of electronic communications undertakings on the relevant retail market, nor the nature of demand, are so different between areas in this country that this provides an indication that the retail market in question should be segmented geographically. As the main task of this analysis is to define the competition on the relevant wholesale markets, where geographic delineation of those markets is an important issue, more attention shall be paid to potential difference in these factors at wholesale level in Sections 5.5 and 5.6 here below.

5.4.3 Conclusion on assessment of status on retail markets with respect to geographic analysis by area

1104. In paragraph 1 of Article 6 of the above specified Regulation on market analysis in the field of electronic communications it is stated that the objectives and substance of market analysis are to differentiate and define competition boundaries between companies and are the first measures taken by ECOI in the process of assessing whether there is need to apply obligations on an electronic communications undertaking with significant market power. In this way the markets that should be examined were defined and delineated both with respect to types of products or services belonging to the market and geographically. Article 13 of the Regulation states that when assessing competitive conditions on a market, geographic boundaries of the relevant product and service markets shall be delineated. In this analysis, it is the wholesale markets 3a and 3b that are being examined.

1105. In Article 8 of the Regulation and in paragraph 7 of Article 44 of the Electronic Communications Act, it states that the starting point for all analysis of wholesale level is to assess competitive conditions on the relevant retail market/retail markets, having taken into account demand-side and supply-side substitutability during the life of the analysis, based on current market conditions and its/their probable development during the period of validity of the analysis in question. Should ECOI so believe that without obligations at wholesale level there is a risk that consumers will suffer damage because of lack of competition at retail level, then ECOI shall define and analyse the relevant wholesale market or wholesale markets. In the EU Commission Recommendation from December 2020, it is stated that NRAs should begin by assessing whether competitive conditions vary between areas at retail level, given that wholesale obligations were not in place (the Modified Greenfield Approach). Furthermore, that if varying competitive conditions were identified at retail level a detailed geographic analysis should be made at wholesale level.

1106. It is clear from the above that the main task of this analysis, including the geographic analysis, is analysis of wholesale markets 3a and 3b. ECOI must here delineate and define the boundaries of the competition with a view to deciding whether there is a need for obligations on the relevant wholesale markets, and then whether this is overall or in specific geographic areas where ECOI considers to be a risk that consumers will suffer damage because of a lack of competition at retail level, without obligations at wholesale level. This will be done in Sections 5.5 (market 3a) and 5.6 (market 3b) here below.

1107. Before this is done, ECOI on the other hand needs, as previously stated, to assess the relevant retail markets, among other things, geographically. The task is then not to define geographic markets in a formal manner at retail level, nor to designate an undertaking as

having significant market power on the relevant retail market, or on specific geographic parts of the market, with a view to imposing obligations on such an undertaking on the retail market.

1108. In Section 5.4.2 and in the relevant sub-sections of that Section, ECOI has conducted such geographic assessment on the relevant retail markets in all 64 of the country's municipalities. There, ECOI assessed the situation by municipality on the basis of the elements specified below:

1. Distribution of electronic communications networks.
2. Entry barriers.
3. Number of electronic communications companies.
4. Market share.
5. Concentration (HHI-index).
6. Pricing.
7. Other aspects, including marketing behaviour, marketing policy, service offer, quality, characteristics and functionality/usability of connections and nature of demand.

1109. Without it having been the task to define geographic markets at retail level in a formal manner or to designate an undertaking with significant market power on the specific geographic market and impose appropriate obligations on an undertaking on the retail market in question, it is the case that, according to Article 15 of the above specified Regulation on market analysis, ECOI is not authorised to impose obligations on the relevant wholesale markets, or on specific geographic parts of these markets, if it is considered that active competition prevails on the relevant retail market, or on a specific part of that market, without wholesale obligations being in place. According to paragraph 4 of Article 2 of the Regulation, ECOI shall, on the other hand designate an undertaking, one or more, as having significant market power on the relevant wholesale market or on part of it if active competition does not prevail on the relevant retail market and/or on a specific part of it, nor on the relevant wholesale market and/or specific parts of it.

1110. As the conclusion of Section 3 was that active competition did not prevail on the relevant retail market, without obligations at wholesale level, if one considers the country as a whole, the task here is to assess whether there may be active competition in specific geographic parts of the market. An assessment will therefore be made of whether one can assert that active competition prevails in specific municipalities in this country, given that wholesale obligations are not in place (the Modified Greenfield Approach), such that it is not necessary to further assess competitive conditions in more detail in those areas at wholesale level and thus withdraw wholesale obligations on the areas in question without further assessment of competitive conditions at wholesale level. In the opinion of ECOI it is clear that those obligations that apply and that have applied for many years on the relevant wholesale markets on Mila, have increased competition on retail markets, and deployment of fibre networks by Mila competitors at many locations in the country have also done this.

1111. ECOI considers that one must tread carefully with the above specified assessment, as the situation on the relevant wholesale markets may be precarious and/or fragile despite the

fact that the situation on retail markets appears at first sight to indicate strong or even active competition. This should also diminish the risk of Type I error (false positive), about which there is a warning in the above specified BEREC Common Position from 2014, which constitutes untimely withdrawal or relaxing of obligations not justified by market conditions, with the attendant risk of decreasing competitive pressure at retail level. It can thus in the opinion of ECOI be risky to prematurely assert that strong competition in a specific municipality or set of municipalities at retail level leads automatically to the municipality in question or set of municipalities being not examined in more detail at wholesale level. ECOI then also points out if the Authority's task were to conduct a full geographic definition of the relevant retail market, it is also likely that it would at least not be analogous to geographic analysis on market 3a, as the above-mentioned mobile network solutions are not part of that wholesale market, as is the case with the relevant retail market and market 3b.

1112. In this assessment, particular attention is paid to behavioural factors, such as pricing and other factors like market behaviour, market policy, service offer, quality, attributes, characteristics and functionality/usability of connections and nature of demand at retail level did not give indications that geographic markets should be segmented at retail level, if that had been the formal task of this analysis. On the other hand, the structure of the retail market indicates that there is quite some difference between competitive conditions by municipality in this country, particularly when one considers the difference in market share that exists between municipalities, deployment of electronic communications networks and the number of wholesale and retail companies that are operating. It on the other hand was also stated in Section 5.4.2.6 here above that there is substantial concentration on retail markets in all of the municipalities in this country, but this however varies.

1113. In the above assessment, ECOI plans to require that two conditions need to be met for it to be able to assert at this stage that active competition prevails in the relevant municipality or set of municipalities, i.e. on the one hand that no electronic communications company has market share over 50% in the relevant municipality at retail level and on the other hand that the HHI-index is below 2,000 points in the relevant municipality. This is in accordance with what the DBA used in Denmark in its analysis of the relevant wholesale markets in 2021, although in that case, the reference had been that the HHI-index was below 1,500 points. The EU Commission raised no objection to this. This is then in accordance with what was proposed by NKOM in Norway in its market analysis of the relevant wholesale markets, that was submitted to national consultation on 14 June 2023, and where the HHI-index had to be lower than 2,000 points, as used by ECOI.

1114. Market share of the party that has the highest market share on the retail market in question is 50% or below in 27 municipalities of 64, and these are municipalities where the vast majority of inhabitants reside. On the other hand, market share is over 50% in 37 municipalities, which are all outside the Capital City Area.

1115. In short, however, there is no municipality on the retail market in question in this country where the HHI-index is under the 2,000 points in question, but it is lowest in Reykjavik at 2,663 points, which indicates significant concentration. Concentration is thus greater in the country's other municipalities.

1116. In the opinion of ECOI it is unlikely that the HHI-index will drop below 2,000 points during the lifetime of this analysis in any municipality. ECOI considers it unlikely that a new retail operator will join the flora at retail level during the lifetime of the analysis, that could overturn this prediction. Developments in recent years with respect to division of retail market share have been rather slow. Siminn has retained its market share rather well, though it decreased somewhat when the mobile solution in question was included in the equation at the end of 2022. Siminn has by far the lowest share in this solution of the three mobile network companies that operates their own mobile networks, as the company began to offer the solution in question much later than Nova in particular, and significantly later than Sýn. It can also mean that Siminn has the greatest possibilities among these companies to increase its share of this solution, which would strengthen the Siminn position on the retail market in question as a whole and in individual areas. Siminn also has popular TV content and has the greatest share in product bundles, particularly bundles where electronic communications service and TV service are bundled together. Nova, which has increased its share steadily over the past years, appears to have done this first and foremost at the cost of Sýn, as the share of that company has decreased steadily in recent years. Hringdu, the fourth largest party, has slightly increased its share year by year, but nevertheless has less than 10% share of the national level, when the mobile network solution in question is taken into account.

1117. Despite the fact that the conclusion is that it is not possible to assert that active competition prevails in any municipality in this country at retail level, according to the above, ECOI notes that account will be taken of competitive conditions in the municipalities in question at retail level, and used as grounds, as will the situation on the relevant wholesale markets, when delineating geographic markets at wholesale level, among other things, factors such as market share and number of companies operating. The situation on the retail market will also be taken into account, along with the situation on the relevant wholesale markets, when assessing competitive conditions (SMP assessment) in those municipalities or set of municipalities where ECOI may deem, having completed geographic definition of the wholesale markets in question, that active competition does not prevail.

5.5 Geographic definition on market 3a

5.5.1 General

1118. In Section 5.1 here above, one can find detailed discussion on the regulatory framework and Guidelines for geographic analysis of markets, foreign precedent in this field and the conclusion of the last ECOI market analysis, no. 5/2021 on the relevant wholesale markets, ESA comments on the analysis and Ruling of the Appellate Committee for Electronic Communications and Postal Affairs in connection with the analysis. From the review of precedents from ECOI sister Authorities in Europe it is clear that the emphases of many of ECOI sister Authorities and of the EU Commission and ESA have recently tended towards more detailed geographic analysis than was previously practised, and towards geographic differentiation of markets.

1119. In discussion of the regulatory framework, the ESA Recommendation on the relevant service markets from 2016 and the ESA Guidelines on market analysis and evaluation of significant market power from November 2022, were taken into consideration, having taken

account of national conditions as is prescribed in paragraph 2 of Article 43 of the Electronic Communications Act.

1120. There was discussion on the above specified revised ESA Guidelines on market analysis and assessment of significant market power on electronic communications markets, where it was among other things stated that one should take into account two main factors in geographic analysis on electronic communications markets, i.e. on the one hand, network deployment and on the other hand the existence of laws and regulations.

1121. Account was also taken of the ESA Recommendation on the relevant product and service markets on the electronic communications market from 11 May 2016. In this discussion, it was stated that when conducting geographic analysis, the geographic areas belonging to each geographic market shall be specified with reference to competitive conditions having been similar or sufficiently homogeneous and that they could be differentiated from other areas where significantly different competitive conditions prevailed. Particular attention should be directed at whether the behaviour of a company with significant market power is uniform in all geographic areas, or whether the company is faced with significantly differing competitive conditions in varying areas which constrain the company's behaviour.

1122. Then the Recommendation and EU Commission working document on the relevant product and service markets in the field of electronic communications from 18 December 2020 were examined. There one can find discussion to the effect that it was unlikely that competitive problems are the same at all locations in the jurisdiction of the state in question, both with respect to markets 3a and 3b. It is therefore important that the relevant markets be subjected to geographic analysis. With such analysis, particular attention should then be paid to whether the potential SMP operator behaves in a similar manner between areas where he operates electronic communications networks, or whether he is faced with varying competitive pressure between areas.

1123. It was explained that in the working document it was stated that when conducting geographic analysis, NRAs should begin by choosing basic criteria for geographic units as a starting point for assessing competitive conditions. Such criteria can follow network topology or the boundaries of administrative units, as appropriate in each individual country. It is clear from this discussion that the difference in competitive conditions between varying areas in the same country can lead to it being unavoidable to define separate geographic markets. This separation can eventually lead to varying designations of undertakings with significant market power and to varying imposition of obligations. When conducting such analysis one must take four factors into account according to the working document: (a) Number of competing networks, (b) division of market share at retail and wholesale levels, (c) preliminary analysis of pricing and price difference by area and (d) behavioural pattern of consumers and parties to the market. For this reason, these factors are taken into account in the following Sections for market 3a, but a more detailed description of deployment of parallel coverage networks can be found in Section 5.5.2.2. Market share of the electronic communications companies is also taken into account in Section 5.5.2.5 and pricing by area in Section 5.5.2.6. Other factors are finally taking into account, such as nature of demand in Section 5.5.2.7.

1124. With respect to the choice of criteria for geographic basic units, pursuant to the Recommendation and working document, the starting point for geographic analysis should be to define geographic base units on which to conduct preliminary assessment of competitive conditions. The next step will be to group together those geographic units where competitive conditions are sufficiently homogeneous. Subsequent to geographic analysis, NRAs are obliged to conduct assessment of significant market power on each geographic market and to impose obligations on undertakings with significant market power on those geographic markets where active competition does not prevail.

1125. Then the BEREC Common Position and Reports on geographic analysis are examined. Particular attention was paid to the BEREC Report on competition between multiple operators of next generation access networks in the same geographic area, dated 8 June 2023, where there is discussion on the impact that parallel network coverage had on the relevant markets and on geographic analysis. The BEREC research showed that there was correlation to some extent between the proportion of parallel next generation access networks, and whether the geographic market was segmented and/or varying obligations imposed, though other factors were also significant with respect to the decision on geographic definition. One can conclude from the above that it can prove important to take into account network deployment when conducting geographic analysis of the relevant markets.

1126. In Section 5.2, one can then find arguments for the need for detailed geographic analysis of the wholesale markets in question in this instance. The conclusion was reached that in the light of the increased importance of geographic analysis of the relevant markets in Europe in recent years; of the increased deployment of fibre networks by Mila and the company's competitors in the Capital City Area and widely in the country; of the increased market share of Mila competitors on the relevant wholesale markets in recent years and the varying Siminn market share on the related retail market by area, it was appropriate to make a detailed geographic analysis of the markets in question. Account was also taken of the Mila plans to phase out its copper network in the coming years, which will mean that no electronic communications company will be likely to have an electronic communications network with national coverage at the end of the planned lifetime of the analysis.

1127. In Section 5.3 one can find discussion and the ECOI conclusion with respect to the choice of geographic base units that form the starting point for geographic analysis. ECOI comes to the conclusion in this Section that municipalities are the most appropriate base units to form a starting point for the geographic analysis and on which to implement geographic analysis, given the circumstances in this country. In the opinion of ECOI, there is greater transparency and proportionality in applying municipality boundaries than postcodes in connection with this market analysis, and in addition to this it is more appropriate on the basis of prevalent competitive conditions on the relevant market.

1128. In Section 5.4 one can then find detailed geographic analysis of a related retail market, by municipality. In Article 8 of the Regulation on market analysis in the field of electronic communications, and in paragraph 7 of Article 44 of the Electronic Communications Act, it states that the starting point for all analysis at wholesale level is to make an assessment of the competitive conditions on the relevant retail market/retail markets. ECOI so believes that without obligations at wholesale level there is a risk that consumers will suffer damage

because of lack of competition at retail level. There was thus reason to assess competitive conditions on the relevant retail market by area for it to be possible to geographically define the market on the wholesale markets in question. The conclusion was that it was not possible to assert that active competition prevailed at retail level, at least not in all areas. Despite this, the competitive conditions at retail level in the relevant municipalities will be taken into account and used as grounds, as will competition conditions on the relevant wholesale markets, when delineating the geographic market at the wholesale level, among other things, factors such as market share and the number of companies operating. The conditions on retail markets will also be taken into account, along with conditions on the relevant wholesale markets, when assessing competitive conditions (SMP assessment) within geographic markets.

5.5.2 Geographic assessment of market 3a

5.5.2.1 General

1129. As stated in Section 4.2.9 here above it was the ECOI decision that the wholesale market 3a for local access with a fixed connection comprises access to physical connections in an access network in copper and fibre networks, along with the corresponding virtual network solutions that fulfil the criteria described in the Recommendation on the relevant market, i.e. 1) that access is local and not central; 2) that the lessee can choose the service he provides, and has guaranteed carrying capacity; 3) that the lessee has full control of the connection.

1130. In Section 3.2.6 here above, ECOI assessed whether there was active competition on the retail markets in question in this country. The ECOI conclusion was that this was not the case, except perhaps in specific areas, despite the fact that wholesale obligations had rested on Mila on the relevant wholesale markets for many years. The status on the retail markets in question would without doubt have been different, even in areas where more competition prevailed, if it had not been for the above specified wholesale obligations. For this reason, ECOI considered it important to continue analysing the situation on the relevant wholesale markets.

1131. The above indicated emphatically that if it were not for wholesale obligations, network operators in specific areas, where competition was inadequate on retail markets, could possibly have the economic strength to hinder active competition and to a significant degree operate without taking into consideration competitors, customers or consumers and maintain access barriers to infrastructure, systems and service, see Article 17 of the Regulation on market analysis in the field of electronic communications. ECOI therefore considered it necessary to conduct detailed geographic analysis of the retail and wholesale markets in question and to then conduct detailed analysis of competitive conditions on the relevant wholesale markets in those areas where it is considered that competition was not active at retail and/or wholesale level and as appropriate, designate an electronic communications undertaking, one or more, as having significant market power and impose appropriate obligations on that/those companies.

1132. As those wholesale markets being analysed in this instance, are related in the same value chain, there is an obligation to react to current or potential competition problems on

the retail market in question, on that wholesale market that is lowest in the value chain, i.e. on market 3a. It may be that obligations on that market do not suffice on their own to resolve the competition problems on the retail market in question, and then measures must also be taken on these problems on the wholesale market that is higher in the value chain, i.e. market 3b. It is not until it is finally clear that obligations on the relevant wholesale markets do not suffice that the option is considered of reacting with obligations at retail level to the competition problems identified, see Article 61 of the Electronic Communications Act.

1133. It is furthermore stated in the above specified Section 3.2.6 that ECOI considers that still there are significant access barriers to the wholesale markets for local and central access in certain areas. Internet service will not be marketed at retail level unless the service provider in question has access to wholesale services on markets 3a and/or 3b. One could therefore only come to the conclusion that if there were no access obligations at wholesale level, there would be significant access barriers on the retail market in the areas in question, though these access barriers have doubtless diminished somewhat after Siminn sold Mila. Even if obligations were in place, one could identify access barriers to the retail market in question in specific areas.

1134. With the CA Decision no. 24/2023, dated 3 July 2023, CA came to the conclusion that there were only reasons at this stage to rescind a number of provisions of the 2015 Settlement between CA and Siminn, in addition to those that were rescinded according to the Settlement that CA had made with Míla and Ardian on the occasion of Siminn selling Mila, see CA Decision no. 16/2023, dated 22 May 2023. With respect to further rescinding of provisions in the Settlement in question, CA considered it important to gather further experience of the changes that had occurred on electronic communications markets with the Siminn sale of Mila and to resolve existing complaints and investigations that related to Siminn.

1135. CA also stated that one of the objectives of the Settlement from 2015 had been to ensure Mila independence from Siminn. Separation between the companies, had among other things been prescribed there to a significant degree. For that reason, the change that had occurred to the market structure and to the relationship between Siminn and Mila, subsequent to the Siminn sale of Míla to Ardian had been less than otherwise would have been the case. For this reason, the material changes that the sale would have constituted was limited in this respect. It then states that despite the sale of Mila and that the direct ownership relationship between the two companies had been severed, a wide-reaching wholesale agreement was still in force between Siminn and Mila. In the opinion of CA, this agreement constituted strong common interests between the companies that could manifest themselves in various ways. It was therefore at a minimum, not timely to assert that the impact of the vertical integration no longer existed.

1136. It was the CA conclusion that the above did not provide reason to rescind all provisions of the Settlement that related to Siminn. It was actually important that they remained in force while experience was gained of the changes that had occurred to the structure of the market with the sale of Mila and there was also the matter that outstanding cases, that related to alleged breaches by Siminn of the conditions, had not been resolved. It had not been demonstrated that such significant changes had occurred to electronic communications markets in this country that would provide reasons to rescind important material conditions

that bound Siminn pursuant the Settlement from 2015. When making this assessment, CA paid particular attention to:

- The Siminn position on important markets on which the company operated was still strong.
- The wholesale agreement between Siminn and Mila and other connections between the companies constitute continued strong common interests, which among other things manifest the characteristics of vertical integration and can have an impact on markets on which Siminn operates.

1137. Here in the following text, emphasis will be placed on discussing possible differences in competitive conditions that may exist on this wholesale market by area. In Sections 5.5.2.2-5.5.2.7, a detailed assessment will be made of the status on the relevant wholesale market, with respect to the difference in competitive conditions by municipality or set of municipalities. The following aspects will be discussed:

- Deployment of electronic communications networks by municipality.
- Access barriers on the wholesale market by municipality.
- Number of electronic communications companies on the relevant wholesale markets in individual municipalities.
- Market share on the relevant wholesale market by municipality.
- Pricing on the relevant wholesale market by municipality.
- Other aspects, including marketing behaviour, marketing policy, service offer, quality, characteristics and functionality/usefulness of connections and nature of demand by area.

1138. In Section 5.5.2.8 one can find the ECOI conclusion on geographic analysis of competitive conditions by area on the relevant wholesale market. As stated in Section 5.3 here above, it is the ECOI conclusion that municipalities are the most appropriate base unit as a starting point for the geographic analysis on which to base geographic analysis, given the circumstances in this country. This applies both to the retail and wholesale levels in the opinion of ECOI. In Section 5.6. one can find geographic analysis of market 3b.

5.5.2.2 Deployment of copper networks, fibre networks and 4G, 4.5G and 5G mobile networks by municipality and the prediction of its development

1139. In Section 3, the status at a national level on the retail market for broadband connections and service at a fixed location was covered in detail, regardless of whether this was in the case of a fixed line network (copper network with VDSL equipment, cable system and fibre) or mains connected mobile network solutions over 4G/4.5G and 5G.

1140. In Section 3.1.1 there is detailed discussion on access to the above specified electronic communications networks, their deployment and on use of these networks. As stated there,

the deployment of cable systems in Iceland is extremely small and is in fact limited to only one district in one of the country's municipalities, i.e. Reykjanesbær. It is also stated there that access to dedicated Internet service over a fixed line network is at a very high level in Iceland, where Iceland is that country in Europe, which has the highest proportion of active fibre connections, that is to say about 77%. The proportion of active copper connections has decreased rapidly during recent years, although there still was about 20% of fixed line connections in this country over such a technical solution at end of 2022, first and foremost with VDSL. At end of year 2022, fibre networks reached about 89% of the country's households and companies, of which there was 93% of households and 72% of companies. Parallel coverage by two fibre networks had then reached 57% at a national level. There is no example in this country of parallel network coverage of more than two fibre networks, and it is not expected that there will be such examples. 4G/4.5G mobile networks are also widely deployed in this country, and furthermore substantial and rapid 5G roll-out is underway and will continue during the coming years, as all of the three mobile phone companies have ambitious plans in this respect. Performance and data transfer capacity of such high-capacity mobile networks have changed radically during recent years with deployment of these mobile network generations. Another factor considered is the number of competitors of the potential SMP company that provide or can provide service in the relevant area or areas, as this method can prove effective in reflecting access barriers by area.

1141. As has been stated, ECOI considers that substitutability has become a reality on the retail market between Internet service over the above specified fixed line network solutions and Internet service through mains connected routers that use such mobile network solutions. In Section 4 it is then stated that such substitutability also exists on market 3b but not on market 3a. In Section 3.1.5. there was then discussion on the offer of varying access technology on a national level on the retail market in question. Reference is made to that Section.

1142. In this Section will be further discussion on deployment of these electronic communications networks by municipality in the country.

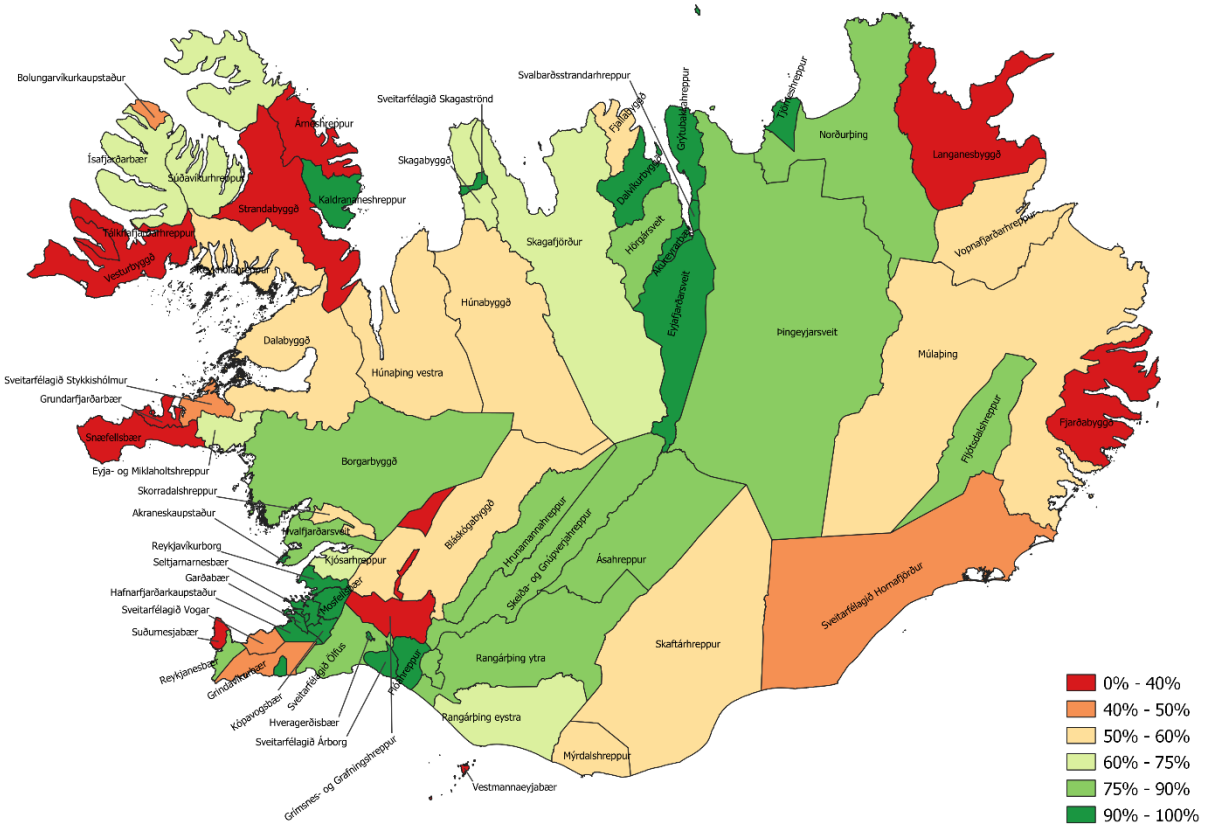
1143. In Europe, competition problems on the retail market or retail markets related to wholesale markets 3a and 3b, are generally caused by inadequate infrastructure competition (parallel electronic communications network coverage) and/or by a lack of effective wholesale access. These issues can vary between areas and there is the fact that grounds for active competition may be minimal in very sparsely populated and rural areas. This has also been the situation in this country, where competition on the retail market has gradually grown at many locations during the past 20 years or so, first because of wholesale access to Mila electronic communications networks and later because of deployment of fibre networks of the various network operators that have provided Mila with competition. Options of retail companies have therefore increased from what they were before. This however varies considerably between areas in this country and in general one can say that competition in retail is greater in the Capital City Area than in the countryside, even though there is also strong competition at many locations in the countryside, see Table 5.4 here above.

1144. As there is a strong correlation between deployment of electronic communications networks that provide competition for Mila electronic communications networks and conditions on the relevant retail market, ECOI considers it appropriate to discuss here the

deployment of such electronic communications networks by municipality in the country. Mila previously had a fixed line network with national coverage, but no longer, although it is the electronic communications company that operates the most extensive fixed line networks in the country (copper and fibre),[289] which together reach about 91% of the country's households and companies. If Mila does not own the underlying electronic communications network, then the company does however operate in most instances bitstream service on the networks in question and in this manner, Mila bitstream service reaches in one way or another almost all inhabited parts of the country.

1145. In the following figures one can see fibre deployment, deployment of parallel coverage fixed line networks and parallel coverage of fibre networks by municipality.

Figure 5.1 Fibre deployment in municipalities



1146. As can be seen in the Figure, progress in fibre roll-out is at various stages of progression between municipalities. In most of them, fibre has been rolled out to rural areas through the initiative "Iceland Digital Connected". Most residences and workplaces are however located in urban areas where grants were not awarded for fibre roll-out, which led to a low proportion of homes and residences being given access to fibre. It varies whether electronic communications companies have embarked on fibre roll-out in urban areas on commercial grounds, and in some instances, municipalities themselves have supported such projects.

[289] Although Mila has decommissioned part of the copper network, it still reaches about 85% of households and companies in the country, but the company intends to complete the commissioning of the system by the end of 2028, as most effort will be directed at the decommissioning during the last two years.

Figure 5.2 Deployment of parallel coverage fixed line networks (fibre and/or copper) in municipalities

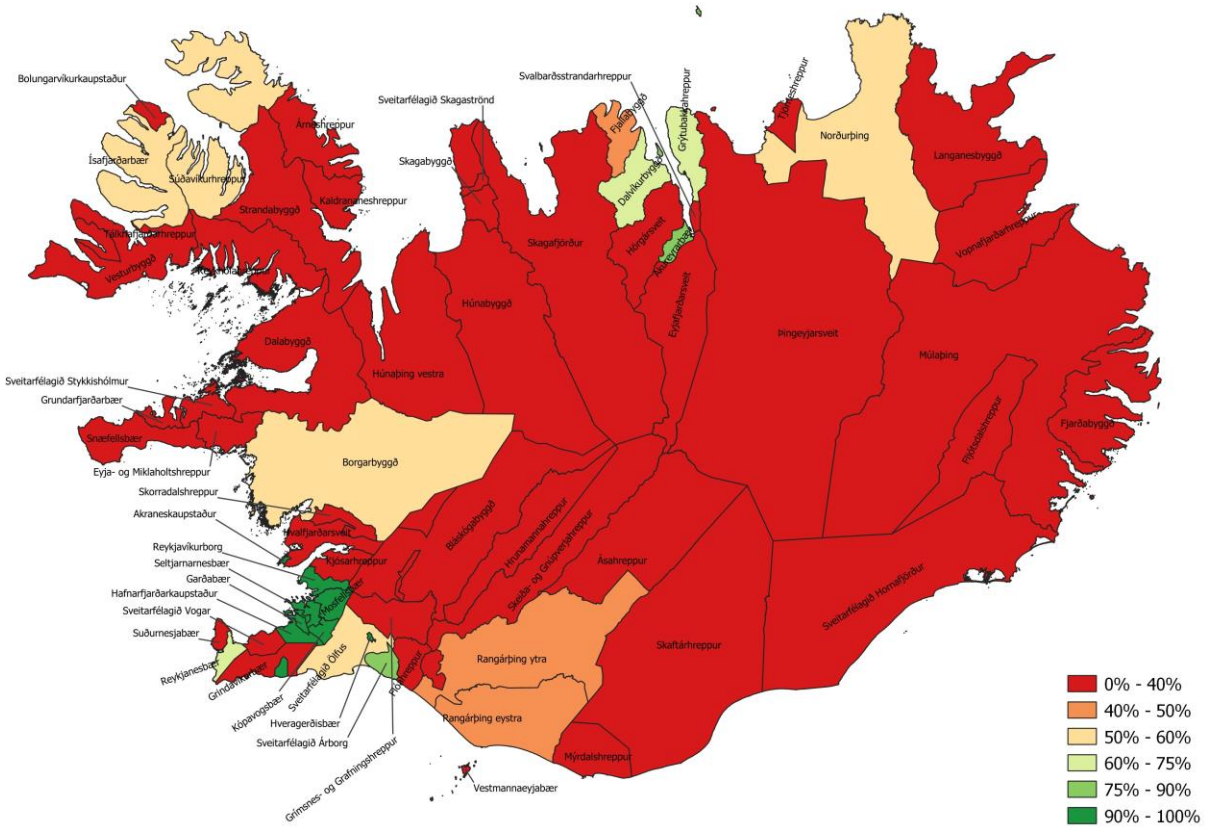
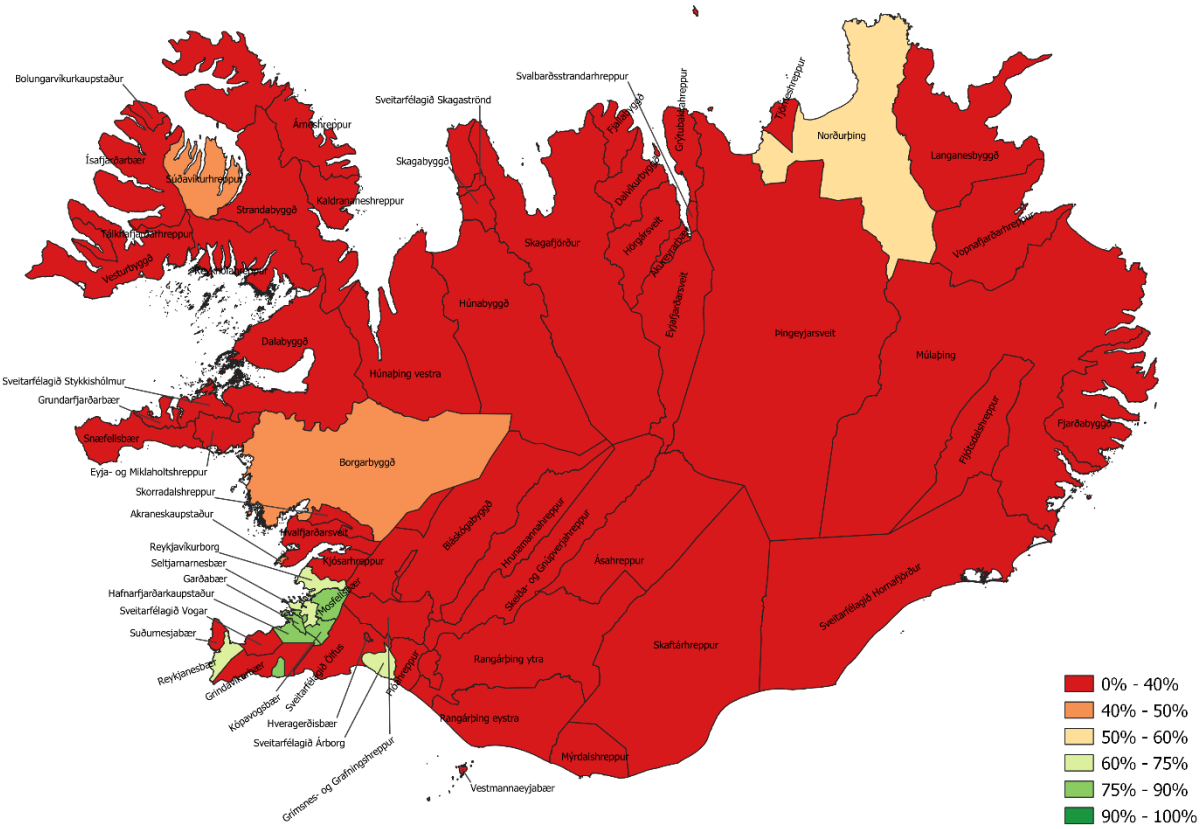


Figure 5.3 Deployment of two or more parallel coverage fibre networks in municipalities



1147. ECOI has therefore collected data on the relevant wholesale market in fixed line networks, where the data has been broken down by municipality at 9 points in time, i.e. for mid-year 2018, end of year 2018, end of year 2019, mid-year 2020, end of year 2020, mid-year 2021 and end of year 2021, mid-year 2022 and end of year 2022.[290] Data has among other things been collected on deployment of copper and fibre local loops and on the uptake of service on each network on market 3a by municipality. Since the last analysis was published in October 2021, the number of municipalities decreased on the other hand, from 69 to 64 in the years 2021 and 2022.

1148. In Table 5.6 below one can see the deployment proportion of parallel coverage electronic communications networks in this country by municipality,[291] categorised by region for convenience. Here it is assumed that not the same owners own the underlying networks. It is appropriate to note that when calculating coverage percentage, one takes into account deployment to addresses, according to data from the owners of fibre networks on the one hand, and on the other hand to data from Registers Iceland HMS on the number of residences and workplaces in the country's municipalities. It is possible that there is no residence or active operations at the addresses in question, so it could be that in fibre roll-out there is no request for a fibre connection at the address in question. There could also be errors in registration of residences and workplaces. In some municipalities, where fibre deployment is

[290] In Appendix C one can find data on deployment for mid-2023.

[291] The coverage proportion is a calculated size and has the reservation of the accuracy of data received by ECOI.

considered complete, calculated deployment is not 100% and one can expect the coverage proportion to be underestimated rather than overestimated.

1149. Parallel network coverage refers to copper and fibre networks, while parallel fibre coverage indicates the proportion of those residences and workplaces that can connect to fibre from two parties. When deciding whether a residence or workplace has access to a mobile network, this is on the basis that there is a good 4G, 4.5G or 5G mobile network signal indoors. In the case of parallel network coverage of one mobile network, and one or two fixed line network, this is on the basis that it is not the same owner of the relevant networks, i.e. where Mila is the owner of a fixed line network, then Siminn deployment is not included as it is based on the Mila mobile telephone distribution system (Radio Access Network: RAN) which the company purchased from Siminn at the beginning of 2021.

Table 5.6 Fibre deployment and deployment proportion of parallel coverage electronic communications networks by geographic area at the end of 2022[292]

Capital Area

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Reykjavíkurborg	99%	98%	74%	97%	99%
Kópavogsbær	100%	98%	76%	98%	100%
Seltjarnarnesbær	100%	96%	30%	96%	100%
Garðabær	99%	97%	86%	97%	99%
Hafnarfjarðarkaupstaður	98%	95%	77%	95%	98%
Mosfellsbær	97%	93%	79%	93%	99%
Kjósarhreppur	74%				29%

Suðurnes

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Reykjanesbær	89%	68%	65%	68%	92%
Grindavíkurbær	45%	15%	14%	15%	91%
Sveitarfélagið Vogar	40%				83%
Suðurnesjabær	35%				89%

[292] In Appendix C one can find data on deployment for mid-2023.

West

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Akraneskaupstaður	96%	92%	47%	92%	98%
Skorradalshreppur	54%				54%
Hvalfjarðarsveit	89%	7%	5%	5%	72%
Borgarbyggð	81%	54%	46%	53%	83%
Grundarfjarðarbær	36%				87%
Eyja- og Miklaholtshreppur	73%	1%	1%		41%
Snæfellsbær	34%	0%		0%	75%
Sveitarfélagið Stykkishólmur	43%	0%	0%	0%	90%
Dalabyggð	53%				65%

North-west

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Húnaþing vestra	54%	0%	0%		59%
Sveitarfélagið Skagaströnd	96%				92%
Skagabyggð	67%				5%
Húnabyggð	51%	0%	0%		78%
Skagafjörður	61%	0%	0%		71%

Westfjords

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Bolungarvíkurkaupstaður	44%	39%	1%	39%	89%
Ísafjarðarbær	63%	53%	21%	51%	88%
Reykhólahreppur	59%	1%		1%	39%
Tálknafjarðarhreppur	13%	3%		3%	85%
Vesturbyggð	21%	4%	4%	1%	79%
Súðavíkurhreppur	74%	59%	50%	59%	68%
Árneshreppur	20%				20%
Kaldrananeshreppur	97%				
Strandabyggð	18%				53%

North-east

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Akureyrarbær	93%	87%	33%	87%	98%
Norðurþing	85%	60%	53%	59%	89%
Fjallabyggð	51%	43%	3%	43%	93%
Dalvíkurbyggð	98%	67%	6%	66%	88%
Eyjafjarðarsveit	93%	23%	6%	22%	83%
Hörgársveit	87%	15%	15%	15%	62%
Svalbarðsstrandarhreppur	91%	36%	2%	36%	83%
Grýtubakkahreppur	97%	63%	3%	63%	86%
Tjörneshreppur	91%				48%
Þingeyjarsveit	83%	10%	0%	10%	61%
Langanesbyggð	35%	12%		1%	74%

East

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Fjarðabyggð	28%	1%	1%	0%	89%
Múlaþing	52%	15%	13%	14%	82%
Vopnafjarðarhreppur	50%	32%	0%	32%	80%
Fljótsdalshreppur	88%				38%

South

Municipality	Fibre deployment	Parallel fixed networks	Parallel fibre	1 mobile & 2 fixed	1 mobile & 1 fixed
Vestmannaeyjabær	26%	0%	0%	0%	96%
Sveitarfélagið Árborg	97%	76%	69%	76%	96%
Sveitarfélagið Hornafjörður	44%	3%	1%		77%
Mýrdalshreppur	58%	6%	1%	6%	79%
Skaftárhreppur	55%	1%		1%	47%
Ásahreppur	87%				27%
Rangárþing eystra	73%	40%	13%	40%	53%
Rangárþing ytra	78%	42%	9%	42%	62%
Hrunamannahreppur	79%	36%		36%	76%
Hveragerðisbær	97%	94%	40%	94%	98%
Sveitarfélagið Ölfus	76%	58%	20%	56%	78%
Grímsnes- og Grafningshreppur	35%	2%	2%	1%	38%
Skeiða- og Gnúpverjahreppur	82%	2%	2%	1%	37%
Bláskógabyggð	53%	0%	0%	0%	66%
Flóahreppur	92%	2%	0%	0%	49%

1150. From the above specified Table one can see that the Capital City Area, with the exception of Kjósarhreppur[293] is quite exceptional with regards to fibre deployment, as at the end of 2022 it was between 97% (Mosfellsbær) and 100% (Seltjarnarnes); parallel coverage by two fixed line networks (fibre and copper networks), was from 93% (Mosfellsbær) up to 98% (Kópavogsbær), while parallel coverage of two fibre networks was generally in the range of 74% (Reykjavíkurborg) to 86% (Garðabær), except in Seltjarnarnes where it was only 30%. In that area these proportions are much higher than is generally the case outside the Capital City Area (apart from Kjósarhreppur) and the parallel fibre deployment in Seltjarnarnes. There is for example no (almost none) parallel fixed network coverage in 14 of the country's municipalities, and in addition to this it is very small in many other municipalities in the countryside.

1151. In the Capital City Area, with the exception of Kjósarhreppur, Ljósleiðarinn has 95%-100% fibre deployment while Míla has from 30% (Seltjarnarnes) to 86% (Garðabær), including 74%-81% in Reykjavíkurborg, Kópavogsbær, Hafnarfjarðarkaupstaður and in Mosfellsbær. Míla is conducting major fibre roll-out in the area, especially in Reykjavík, Kópavogur and Hafnarfjörður and it is likely that this will continue strongly throughout the lifetime of the analysis, such that the difference in deployment between the Ljósleiðarinn fibre network and that of Mila will become insignificant in the area at the end of the lifetime of the analysis, with the possible exception of Seltjarnarnes, where the proportion of detached houses is particularly high.

1152. Kjósarhreppur, which is counted as part of the Capital City Area, is a sparsely populated municipality without an urban locality. It is characterised by farms and a large number of summerhouses. Fibre deployment is 74%, but there is no parallel fixed network coverage. The company Leiðarljós, which is in the ownership of the municipality, owns and operates the fibre network. It is not expected that parallel fibre network coverage will be developed in this sparsely populated area.

1153. In the Capital City Area neighbourhood in Sveitarfélagið Árborg, Akraneskaupstaður and Hveragerðisbær, in the Ljósleiðarinn territory, the situation is not dissimilar from the situation in the Capital City Area itself. In Sveitarfélagið Árborg fibre deployment is 97%, two fixed line networks (copper and fibre) reach 76% of residences and workplaces and parallel fibre network coverage is 70% to residences and workplaces. Fibre deployment is 96% in Akraneskaupstaður; two fixed line networks (copper and fibre) reach 92% of residences and workplaces and parallel fibre network coverage reaches 47% of residences and workplaces. In Hveragerðisbær fibre deployment is 97%, two fixed line networks (copper and fibre) reach 94% of residences and workplaces and parallel fibre network coverage is 40% to residences and workplaces. The situation is similar in Akureyrarbær, in the Tengir territory in North Iceland. Fibre deployment there is 93%, two fixed line networks (copper and fibre) reach 87% of residences and workplaces and parallel fibre network coverage is 33% to residences and workplaces. In the three first named municipalities, there is extensive deployment of fibre networks by Ljósleiðarinn and Tengir in Akureyrarbær. Mila is conducting quite vigorous fibre roll-out in all of them, and one can expect this to continue throughout the lifetime of the

[293] Kjósarhreppur is a small, sparsely populated municipality on the outskirts of the Capital City Area, which is characterised on the one hand, by a few residences (often farms) and on the other hand, by many summerhouses.

analysis. Parallel coverage of fibre networks will therefore increase in all of these municipalities during the lifetime of the analysis.

1154. In Norðurþing in Tengir operational territory, the situation is considerably inferior. Fibre deployment there is 93%, two fixed line networks (copper and fibre) reach 60% of residences and workplaces and parallel fibre network coverage is 53% to residences and workplaces. At that location, Mila and Tengir have conducted joint fibre deployment in the largest urban nucleus, Húsavík. In addition to this, fibre has been rolled out in more urban nuclei (Kópasker og Raufarhöfn) in part at least, or deployment is underway, and in addition to this, fibre has been deployed to most of the rural area with state aid. ECOI does not expect that parallel fibre coverage will increase much in Norðurþing, as this region is in part an expansive urban area.

1155. In Dalvíkurbyggð, which is also in Tengir operational territory, there is 98% fibre deployment and parallel fixed line network coverage reaches 67% of residences and workplaces. There is, however, only 6% parallel fibre coverage. In Dalvíkurbyggð, Tengir has deployed fibre to almost the whole municipality, which consists of a large urban nucleus, Dalvík, and two smaller, i.e. Ársskógssandur and Hauganes and then a sizeable rural area, particularly in Svarfaðardalur. ECOI considers there to be no grounds for Mila doubling the fibre network in the rural area, as the company has access to the Tengir fibre network. It is more difficult to make predictions about the urban localities. ECOI considers it not inconceivable that Mila will deploy fibre there during the lifetime of the analysis. This is, however, difficult to predict.

1156. The situation is quite good in Reykjanesbær in Ljósleiðarinn operational territory. Fibre deployment is 89% there, parallel coverage of at least two fixed line networks is 68% and parallel coverage of fibre is 65%. Mila and Ljósleiðarinn have conducted joint fibre roll-out in the municipality during the last years and it is expected that the last phase will soon be completed, and with this, the above specified deployment proportions will increase.

1157. The situation is acceptable in Borgarbyggð, which is a geographically expansive municipality in West Iceland. There is a large urban nucleus there, Borgarnes, and a number of smaller urban nuclei such as Bifröst, Hvanneyri, Reykholt, Varmaland Kleppjárnsreykir. Ljósleiðarinn has an extensive fibre network in Borgarnes, Bifröst and Hvanneyri. There is also an expansive rural agricultural region in the municipality to which fibre has been deployed with state aid. There is also significant number of summerhouses in the municipality, including in Húsafell. Fibre deployment in the municipality is 81%, deployment of parallel fixed line network coverage (fibre and copper networks) is 54% and parallel fibre deployment coverage is 46%. The company Ljósleiðari Borgarbyggðar owns and operates the fibre network in the rural area, which was developed with state aid.[294] Mila has also conducted significant fibre deployment in the municipality. It should not be expected that Mila and/or Ljósleiðarinn will deploy fibre to the rural area to which it has already been deployed. ECOI considers on the other hand, that it is not inconceivable that doubling of fibre networks in the municipality will increase somewhat in the urban localities in question during the lifetime of the analysis.

[294] The companies Ljóspunktur and Ljósfesti also own connections, but they total fewer than 20.

1158. In 13 sparsely populated municipalities in the countryside, fibre coverage is over 80%, i.e., in Hvalfjarðarsveit in West Iceland, Kaldrananes in the West Fjords, Sveitarfélagið Skagaströnd in Northwest Iceland, Eyjafjarðarsveit, Hörgársveit, Svalbarðsstrandarhreppur, Grýtubakkahreppur, Tjörneshreppur and Þingeyjarsveit in the Tengir operational territory in North Iceland, in Fljótsdalshreppur in East Iceland, and in Ásahreppur, Skeiða- og Gnúpverjahreppur and Flóahreppur in South Iceland. On the other hand, deployment of two fixed networks there (fibre and copper networks) is very small, from 0% to 36%, except in Grýtubakkahreppur and Tjörneshreppur where it is 63%, as Mila still operates its copper network in those locations. Parallel fibre network coverage is however negligible there but is nevertheless 15% í Hörgársveit. Tengir owns the fibre networks (or at least by far the largest part of them) in Eyjafjarðarsveit, Hörgársveit, Svalbarðsstrandarhreppur, Grýtubakkahreppur and Þingeyjarsveit. At the end of 2022, Mila purchased the fibre network in Kaldrananeshreppur and owns the fibre network in Sveitarfélagið Skagaströnd. The fibre networks in the other municipalities are owned by local fibre network operators. ECOI does not expect deployment of another fibre network in these sparsely populated municipalities where there are no urban localities. ECOI considers it on the other hand, to be unlikely that deployment of a single fibre network will increase during the lifetime of the analysis, particularly in Eyjafjarðarsveit (now 93% deployment), Hörgársveit (now 87% deployment) and Svalbarðsstrandarhreppur (now 91% deployment).

1159. Snerpa has for some time now deployed fibre in the company's operational territory in the West Fjords, first and foremost in Ísafjarðarbær (Ísafjörður, Hnífsdalur, Suðureyri, Flateyri and Þingeyri), Súðavíkurhreppur and Bolungarvíkurkaupstaður. Míla has also rolled out some fibre in Ísafjarðarbær and in Súðavík, but almost nothing in Bolungarvíkurkaupstaður. In Ísafjarðarbær, fibre deployment is 63%, parallel coverage of fixed line networks (fibre and copper) 53% and parallel coverage of fibre is 21%. In Súðavíkurhreppur fibre deployment is 74%, parallel coverage of fixed line networks (fibre and copper) 59% and parallel coverage of fibre is 50%. In Bolungarvíkurkaupstaður fibre deployment is 44%, parallel coverage of fixed line networks (fibre and copper) is 39% and parallel coverage of fibre is only 1%. ECOI expects that Snerpa will continue to deploy fibre in Ísafjarðarbær and in Bolungarvíkurkaupstaður during the lifetime of the analysis. ECOI also expects that Mila will continue its fibre deployment in Ísafjarðarbær during the lifetime of the analysis, but it is more difficult to predict Mila plans for Bolungarvíkurkaupstaður. In the opinion of ECOI, these proportions will all increase during the lifetime of the analysis in Ísafjarðarbær and the fibre deployment of at least one party will increase in Bolungarvíkurkaupstaður. In Súðavíkurhreppur fibre deployment is 74% and parallel coverage of fibre networks is 50%. These proportions can also increase somewhat during the lifetime of the analysis.

1160. ECOI has information to the effect that fibre deployment is being or will be implemented in 5 municipalities where fibre deployment is currently 26-59%, i.e. in Grindavíkurbær, Sveitarfélagið Vogar, Reykhólahreppur, Árneshreppur and in the Westman Islands. Míla and Ljósleiðarinn are jointly deploying fibre in Sveitarfélagið Vogar (45% deployment at the end of 2022) in 2023 which should be completed in this year. Then the companies had planned a joint deployment in Grindavík (fibre deployment 41%) in the coming seasons, but those plans are in doubt after major earthquakes and volcanic eruptions in the near vicinity of the town, but people were forces to leave the town in November 2023. In those municipalities, there has been little deployment of parallel coverage networks up to this point in time.

1161. In the West Fjords, the sparsely populated municipalities of Reykhólahreppur and Árneshreppur will complete deployment of fibre to these municipalities in 2024, where there is respectively 59% and 20% fibre deployment, but almost no parallel fixed line network coverage at all. In the Westman Islands there is 26% fibre deployment, but almost no deployment of parallel coverage networks.

1162. At the beginning of 2023, Eygló, a company owned by the Westman Islands municipality, began to deploy fibre to the whole municipality, which is expected to take 3 years. The situation in these municipalities will therefore become good with respect to fibre deployment by one company, and with respect to fibre deployment by two parties in Sveitarfélagið Vogar, end even in Grindavík, during the period of validity of the analysis.

1163. In 5 municipalities, fibre deployment is between 50-80% with substantial parallel coverage by two fixed line networks (fibre and copper) in the range of 36-58%, but deployment of two fibre networks ranges from being none to at most 20%. These are Fjallabyggð (Ólafsfjörður and Siglufjörður) in the Tengir operational territory and Rangárþing eystra, Rangárþing ytra, Sveitarfélagið Ölfus and Hrunamannahreppur in South Iceland. In Fjallabyggð, fibre deployment is 51%, parallel coverage of two fixed networks is 44%, but parallel coverage from two fibre networks is only 4%. Both Tengir and Mila have begun to deploy fibre in Fjallabyggð, and one can expect that these proportions will all increase significantly during the lifetime of the analysis, particularly with respect to fibre deployment by one party. In Sveitarfélagið Ölfus, Rangárþing ytra and Rangárþing eystra Ljósleiðarinn has deployed fibre in the large urban nuclei i.e. in Þorlákshöfn, Hella and Hvolsvöllur. In the last-named municipality, there is also a countryside network in the rural area which was deployed with state aid. Fibre deployment in these municipalities is in the range of 73-78% and parallel coverage of fixed line networks in the range of 40-58%. It is not inconceivable that these proportions will increase somewhat during the lifetime of the analysis, particularly from Mila which is somewhat behind Ljósleiðarinn in rolling out fibre in the areas. Hrunamannahreppur is a sparsely populated municipality where there is the Hrunaljós fibre network, which is owned by the municipality. Fibre deployment there is 79% and parallel coverage of fixed line networks is 36%. Although fibre deployment in the municipality is likely to increase during the lifetime of the analysis, one cannot expect, in the opinion of ECOI, an increase in the proportion of parallel coverage of fixed line networks.

1164. In two municipalities in East Iceland, i.e. Múlaþing and Vopnafjarðarhreppur, fibre deployment is in the range of 50-52%, while parallel coverage by fixed line networks is in the range of 15-32% and parallel coverage of fibre deployment is within 1% in Vopnafjarðarhreppur and 13% in Múlaþing. In Vopnafjarðarhreppur Tengir has been deploying fibre recently and Mila also has a number of fibre local loops at that location. One can expect that fibre deployment will continue in the municipality.

1165. Múlaþing is however a very large and varied municipality with a number of quite large urban nuclei (Egilsstaðir, Fellabær, Seyðisfjörður, Djúpivogur and Borgarfjörður eystri) and it has expansive agricultural regions. Austurljós begun deploying fibre at Egilsstaðir and Mila followed subsequently. HEF utilities have deployed fibre to most of the rural areas around Egilsstaðir with state aid. At the end of 2022, Mila fibre deployment reached 39% of residences and workplaces in the municipality while the Austurljós fibre network reached 14% and HEF utilities reached 10%. ECOI expects that Mila will increase its fibre deployment in the

urban parts of the municipality, including in Seyðisfjörður. Then there is a local network that was owned by Djúpavogshreppur prior to the merging of the municipalities, which has fewer than 40 connections in the rural area, but that network does not reach the urban area in Djúpivogur. ECOI does not have information about plans of parties other than Mila in this area. Austurljós appears to have had plans for fibre development at more urban locations in East Iceland than Egilsstaðir, but after Mila began deploying fibre at Egilsstaðir and in the named urban areas, this interest appears to have waned.

1166. In 10 municipalities, fibre deployment is between 50-80% and no or very little deployment of parallel coverage fixed line networks, most 6% i.e. Skorradalshreppur, Eyja- og Miklaholtshreppur, Dalabyggð, Húnaþing vestra, Skagabyggð, Húnabyggð, Skagafjörður, Mýrdalshreppur, Skaftárhreppur and Bláskógabyggð. Míla has fibre networks in Húnaþing vestra, Skagabyggð and Skagafjörður. Míla og Húnanet both own fibre networks in Húnabyggð but copper local loops are still the majority of connections. There one can find among other things a quite large urban locality, Blönduós, and also a rural agricultural region. Mila fibre deployment has been increasing in the municipality from 2021 to the end of 2022. As Mila has announced that the company will replace copper connections with fibre, ECOI considers that Mila will continue deployment of fibre in Húnabyggð (now 51% fibre deployment), and in Húnaþing vestra (now 54% fibre deployment), where one can among other things find the urban nuclei Hvammstangi and Laugarbakki. The same can be said about Skagafjörður (now 61% fibre deployment), where one can find the urban nuclei Sauðárkrókur, Hofsós, Varmahlíð and Hólar í Hjaltadal, and also expansive agricultural regions. Skagabyggð is the very sparsely populated agricultural region where fibre deployment is 67%. ECOI does not expect that fibre deployment will increase there to any significant degree there during the lifetime of the analysis. ECOI does not expect deployment of parallel fibre networks in these municipalities during the lifetime of the analysis.

1167. There are however companies in municipalities that own fibre networks such as in Skorradalshreppur, Eyja- og Miklaholtshreppur, Dalabyggð, Mýrdalshreppur, Skaftárhreppur and Bláskógabyggð, and Mila also owns some fibre networks in them all except in Skorradalshreppur. These municipalities are generally sparsely populated. Míla fibre deployment is for example 31% in Mýrdalshreppur against 28% deployment by Líf í Mýrdal í Mýrdal,[295] where fibre deployment in the municipality is 58% in total, and parallel fibre coverage within 1%. ECOI considers it likely that Mila will deploy fibre to the rest of the urban nucleus in Vík during the lifetime of the analysis and it is not out of the question that Ljósleiðarinn will show interest in this area, even in the form of joint deployment with Mila. In the opinion of ECOI it is difficult to predict about development of further fibre deployment in some of these municipalities but considers that there will not be a doubling of fixed line networks in these municipalities during the lifetime of the analysis, except possibly in Mýrdalshreppur. ECOI considers it not unlikely that Mila will deploy fibre to the urban area in Dalabyggð (now 53% fibre deployment), where there is the Búðardalur urban locality. Rural areas have however mostly had fibre deployment with the help of state aid. Then Mila and Ljósleiðarinn have decided to jointly deploy fibre to the Kirkjubæjarklaustur urban locality in

[295] In the summer of 2023, Ljósleiðarinn finalised the purchase of the Líf í Mýrdal fibre network and change of ownership formally took place around the end of year 2023.

Skaftárhreppur (now 55% fibre deployment), but the rural areas have mostly had fibre deployment with the help of state aid.

1168. In 7 municipalities, fibre deployment is in the range of 30-50%, while parallel coverage of fixed line networks is in the range of 0-12% and parallel coverage of fibre networks from 0-1%. These are Suðurnesjabær (Sandgerði and Garður) in Suðurnes, Grundarfjarðarbær, Snæfellsbær and Sveitarfélagið Stykkishólmur at Snæfellsnes, Langanesbyggð in Northeast Iceland Sveitarfélagið Hornafjörður and Grímsnes- og Grafningshreppur in South Iceland.

1169. In these municipalities, the status of fibre roll-out is much worse than in the municipalities specified above. ECOI made enquiries about potential joint fibre deployment by Mila and Ljósleiðarinn in Suðurnesjabær, as was done in Reykjanesbær analysis planned for Grindavík and Sveitarfélagið Vogar, in the Suðurnesjabær neighbourhood, but judging by the answers, there are no such plans for the time being at least. ECOI considers it however likely that Mila will deploy fibre in the urban locations Sandgerði and Garður during the lifetime of the analysis.

1170. Míla been engaged in some fibre deployment in the three municipalities on Snæfellsnes (Snæfellsbær, Sveitarfélagið Stykkishólmur and Grundarfjarðarbær), but there appears to be no prospect of Mila being faced by competition there for the time being, except maybe from mobile networks, among other things because Ljósleiðarinn would need a trunk line from the NATO cable over a long distance. ECOI expects that Mila will go a long way towards completing fibre deployment in these municipalities during the lifetime of the analysis.

1171. It is quite difficult to predict development in Langanesbyggð (Þórshöfn and Bakkafjörður). Tengir owns a fibre network which reaches Bakkafjörður, and neighbouring country areas and their fibre deployment is less than 15% in the municipality as a whole. Mila operates bitstream equipment on the Tengir fibre network. ECOI does not have information that indicates that Tengir plans to increase its fibre network in the municipality, at least not to any significant extent. It is not certain that Mila will double fibre local loops in Bakkafjörður during the lifetime of the analysis, as it does not seem to be a priority with Mila to deploy fibre areas where fibre has already been deployed by another party, except in the Capital City Area and widely in the Southwest part of the country. Míla leases a local network there, owned by Fjarskiptafélag Svalbarðshreppur, and will probably continue to lease it throughout the lifetime of the analysis. Mila has commenced fibre deployment at Þórshöfn and will probably continue its fibre development and complete it in the near future as this is an urban nucleus with rather few inhabitants. The status of fibre deployment in the municipality is therefore likely to improve significantly during the lifetime of the analysis, although it is not clear whether it will be completed during that period. It is however unlikely that there will be parallel fibre network coverage in the municipality.

1172. The same can be said about Sveitarfélagið Hornafjörður. There is a large town there, Höfn, and also an agricultural region where fibre has been deployed to the rural area, both with and without state aid. Fibre has been deployed to 44% of residences and workplaces, but parallel fixed line network deployment is only 3% and parallel fibre deployment is only within 1%. Gagnaveita Hornafjarðar and Míla own the fibre networks in the municipality. With respect to deploying fibre to Höfn, it is not out of the question that Ljósleiðarinn will show an interest in this town, as it is only a short distance to a connection point to the NATO cable. It

could speed up fibre deployment in what is the largest urban nucleus in the municipality. Whether this is realised or not, Mila has begun to deploy fibre in Höfn, and one can expect this to be completed as the lifetime of the analysis progresses.

1173. Grímsnes- og Grafningshreppur is a sparsely populated municipality and has the largest summerhouse district in the country. Fibre coverage by Mila is 32% there. At that location there are powerful 4G/4.5G and 5G mobile networks that appear to meet the connection needs of summer house owners. For this reason, one cannot expect competition in fixed line networks in the area during the lifetime of the analysis and there is uncertainty about further fibre deployment by Mila in the municipality.

1174. There then remain 4 municipalities where the situation is worst in the country with regards to deployment of fibre and competition in fixed line network infrastructure, i.e. Tálknafjarðarhreppur, Vesturbyggð (Patreksfjörður and Bíldudalur) and Strandabyggð in the West Fjords and Fjarðabyggð (Neskaupsstaður, Eskifjörður, Reyðarfjörður, Fáskrúðsfjörður and Breiðdalsvík) in East Iceland. In these municipalities, fibre deployment ranges from 13% (Tálknafjarðarhreppur) to 28% (Fjarðabyggð) and parallel fixed line network deployment is 4% at its highest. Mila has deployed fibre to some extent in these municipalities, except in Tálknafjarðarhreppur where Snerpa owns a fibre network in the rural part, but fibre has not been deployed to the Tálknafjörður urban locality. Snerpa has a very small number of connections in Vesturbyggð. These two last named municipalities are on the other hand quite some distance from the Snerpa core territory and a Snerpa spokesman has pointed out that expensive trunk line connections to these locations are an access barrier to further fibre deployment in the area. It is difficult to predict development during the lifetime of the analysis. Mila appears to be quite free of infrastructure competition in these municipalities and therefore appears to be able to decide the speed of fibre deployment in this area more or less at will, though competition from competitors' mobile networks could certainly act as an incentive. ECOI considers that Mila will mostly complete fibre deployment in urban areas in these municipalities before the end of the lifetime of the analysis.

1175. As previously stated, there will be no further deployment of copper networks in this country and Mila has begun to decommission them, and the company's plans allow for full decommissioning at the end of 2028, but most of the effort in decommissioning, including in the Capital City Area, will be during the years 2027 and 2028.

1176. When mobile network deployment is added to deployment of one or two fixed line networks it also comes to light that the situation is best in the Capital City Area, though the difference is less. At many locations in the countryside the situation is however good in this respect, particularly in the case of one fixed line network and one mobile network, and such deployment is for example more than 90% in Reykjanesbær, Grindavíkurbær, Akraneskaupstaður, Sveitarfélagið Skagaströnd, Akureyrarbær, Vestmannaeyjabær, Sveitarfélagið Árborg and in Hveragerðisbær and between 80-90% in 15 other municipalities in addition. Such deployment is lowest in Skagabyggð, at 4.8%. It is not unlikely that deployment of 5G mobile networks in those areas where fibre deployment is at the lowest level, could be popular among the local people, and the three mobile phone companies all have ambitious plans for 5G deployment in the various regions of the country during the coming years.

5.5.2.3 Access barriers on market 3a by area

1177. Generally speaking, varying levels of competition between areas is a consequence of variance in the degree of entry barriers, as new competitors normally make their first entry into areas with fewer entry barriers and where economy of scale is greater. On electronic communications markets, barriers to entry are normally related to economy of scale and sunk costs. Such entry barriers can furthermore result from legal factors such as granting of licences. This means that it is an option to examine economy of scale and sunk cost by geographic area with the intention of drawing conclusions on varying competitive conditions. Economy of scale is more likely be realised, the greater the demand for the service in question. Aspects related to demand are, e.g,. total turnover, population density and density of companies. Though such a study could provide indications, it is unlikely that these aspects on their own or jointly, could fully explain access barriers, as they are often explained by many interacting factors, which are often not clear.[296]

1178. One can assume that access barriers are more common in sparsely populated and more widespread areas than in more densely populated areas, as has been manifested with the roll-out of the Ljósleiðarinn fibre network in the Capital City Area and widely in the Southwest corner of the country and with that of Tengir in Akureyri and widely in North Iceland and Snerpa in Ísafjörður and widely in the West Fjords. Those areas have seen the entries of players that compete with the former state monopolist incumbent. Gagnaveita Skagafjarðar (GVS) was founded in Sauðárkrókur in Sveitarfélagið Skagafjörður on the initiative of utility companies in the region, but the company was sold to Mila late in 2013 when it provided service to about 400 households and 40-50 companies and the company's network then reached 650 homes and 80 companies. GVS considered there to be no operational grounds for such a small company to operate a fibre network, and that an electronic communications infrastructure company needed to achieve a certain size to be able to offer bitstream access. This is probably one of the reasons why a large number of municipalities have generally not chosen to install bitstream equipment on fibre local loops but to allow other parties to operate bitstream equipment there or to finally sell the network.

1179. The considerable investment in civil works for cables and for in-house connections has some economy of scale when one can connect more apartments for each metre of trench or work with in-house cabling to connect many apartments. Such economies of scale can be reached in the most densely populated apartment building districts, but the building pattern in many of the country’s smaller urban localities is not like that. In such places, detached houses, terraced houses and smaller blocks of flats are common, and the density and size of blocks of flats is usually less than in the Capital City Area.

1180. Access to economic trunk line connections for the service that access networks need to connect to service providers, most of whom operate their central system from the Capital City Area, are also quite important in this connection. Another factor is that potential customers are fewer than in the Capital City Area and thus need to support higher costs for trunk line connections than is the case there. On 1 January 2021, the Siminn IP-MPLS network system was transferred to Mila. It is clear that no other electronic communications company in this country operates an IP transit network with national coverage, or such a network that

[296] See pages 25-26 in the above specified BEREC Common Position from 2014.

is close to being as powerful as the Mila network in question. Ljósleiðarinn has now purchased the Sýn trunk line network which was based on one thread in the NATO cable and has made a 10-year lease agreement with the state on lease of two threads in that cable. Ljósleiðarinn does not have a trunk line threads from the NATO cable in question in the various areas that are located at various distances from that cable and therefore needs to lay such trunk lines or lease them from other owners of trunk lines, first and foremost from Mila. There is some uncertainty about the Ljósleiðarinn plans to provide Mila with strong competition in electronic communications across the whole country. One can for example mention that there has been a change of CEO of the company and there is also a planned share capital increase in the company where it is not certain when or how it will take place. It has been pointed out that it is important for Ljósleiðarinn to alleviate the company's debt position for it to be better prepared to tackle continuing investment and competition.

1181. One can conclude from the above that access barriers for new entries to the market in question are significantly greater in rural areas than urban, both with regards to fewer possibilities to leverage economy of scope in developing networks and also with regards to costs for trunk line connections to provide service across the area.

1182. In 2023, the deployment of the last tens of fibre connections in the most sparsely populated areas of the country was to be completed with the help of the Telecommunications Fund in connection with the project "Iceland Digital Connected", which has been ongoing for a number of years. About 6,300 fibre local loops were deployed in that project. In addition to this, a number of municipalities have embarked on such fibre deployment without state aid. Mila has also in recent years purchased a significant number of such networks or leased them long term, and continued development is expected in this direction. Mila furthermore offers bitstream service on the vast majority of those local networks that the company has not purchased or leased (with the exception of the Ljósleiðarinn network). Given available distribution plans for parties like Ljósleiðarinn, Tengir, Snerpa and Eygló in the Westman Islands, it is likely that the combined fibre deployment of Mila competitors will reach about 83-85% of the country's homes and companies at the end of 2025, assuming that spaces will increase by about 3,000 per annum and at the end of 2020 the combined deployment of these companies was 74% and 80% at the end of 2022.

1183. Mila has furthermore embarked on co-investment with Ljósleiðarinn on the one hand Tengir on the other in a number of areas (in the Capital City Area, Borgarnes, Hvanneyri, Árborg and Reykjanesbær with Ljósleiðarinn and at Húsavík and Raufarhöfn in Norðurþing with Tengir). It is not unlikely that such cooperation could extend to other locations in the country during the lifetime of the analysis. There are also currently plans between Mila and Ljósleiðarinn for joint fibre deployment in Reykjanesbær (last phase), Grindavík, in Sveitarfélagið Vogar and at Kirkjubæjarklaustur in Skaftárhreppur, and Ljósleiðarinn has in addition to this shown interest in joint deployment with Mila in Vík í Mýrdalshreppur, but it is uncertain how this will play out, at the time of writing. Mila has also conducted joint fibre deployment with Tengir in Raufarhöfn in Norðurþing, deployment that is still in progress. This lessens entry barriers and reduces investment costs for further roll-out of fibre local loops.

5.5.2.4 The number of electronic communication companies on market 3a by municipality

1184. A simple and often more effective method, which can also reflect entry barriers by area, is the number of competitors of the potential SMP operator that provide or can provide service in the relevant area or areas. This applies both to retail and wholesale level. It is easier to show this than to conduct the assessment mentioned here above in Section 5.5.2.3 with respect to entry barriers, and this method furthermore shows how entry barriers really work in practice.[297]

1185. The analysis that needs to be conducted to show the number of competitors that provide or can provide service in a specific area can vary according to the service market being examined in each instance. On market 3a, it is those companies that operate their own electronic communications network, i.e. copper and/or fibre networks in the various areas. On market 3b, it is those players that operate their own active equipment, i.e. xDSL, P2P and/or GPON bitstream systems or comparable equipment on 4G/4.5G and 5G mobile networks that connect to the above specified mains connected routers.

1186. It is important to have in mind that competitive conditions can also vary by area as a result of the size of such competitors, no less than as a result of their number.

1187. It must be considered very unlikely that consumers and companies in this country have access to more than two options of fixed line access networks (market 3a) and one can assume that in many areas in the countryside it is unlikely that there will be more than one. As the above specified mobile network solutions now belong to market 3b in the opinion of ECOI, consumers and companies have at many locations a choice of more than two options in service providers of bitstream service.

1188. In 2017, Mila requested the withdrawal of the universal service obligation in five specified municipalities where fibre network operated by a municipality had taken over service from the Mila copper network.[298] With the PTA Decision no. 11/2017, the Authority

[297] See page 26 in the above specified BEREC Common Position from 2014.

[298] According to the PTA Decision no. 4/2016 (and to prior PTA decisions) the obligation rested on Mila to provide connection to the public electronic communications network, and this obligation covered the whole country. In the Decision, one could furthermore find authority for the PTA to grant exemption from geographic delineation of the obligation against a reasoned request to this effect. With the request dated 25 April 2017, Mila applied for exemption from universal service in 5 municipalities in the countryside (Helgafellssveit, Eyja- og Miklaholtshreppur, Skagabyggð, Tjörneshreppur and Ásahreppur). The company's main arguments were that with the advent of a new fibre network in these municipalities, active copper network local loops in these municipalities had decreased significantly in number. With the PTA Decision no. 11/2017, the Authority acceded to this Mila request. In the PTA grounds it was among other things stated that the fibre network in question reached all residences and companies in the municipalities in question, while the connection proportion on the Mila copper network was down to 4-37%. The PTA also opened consultation on general conditions that should be the basis for assessment of whether pre-requisites were in place to withdraw the universal service obligation from Mila in specific areas, where there was discussion to the effect that deployment of the local network had at least a 90% connection proportion, that the network of the universal service provider was less than 50%, and the cost to those parties that wished to connect to the new local fibre network was not higher than ISK 350,000. A six-month period of notice was also prescribed for service providers of the users in question, if Mila planned to close the company's access network in the relevant municipalities. It was authorised to close earlier with the agreement of the parties in question. Mila did not use this authority to close the company's copper network in these municipalities, nor request withdrawal of the universal services obligation in more municipalities. With

acceded to this request. No universal service obligations have rested on Mila from and including 14 October 2022 after the National Court rescinded a Ruling from the Appellate Committee for Electronic Communications and Postal Affairs number 4/2020, which confirmed the extension of universal services obligations on Mila until the end of 2022. ECOI however reiterates that Mila has been purchasing or leasing many of these local networks at many locations in the country and it is likely that this development will continue throughout the lifetime of this analysis. Mila provides bitstream service on almost all of the local networks where this has not happened (except on the Ljósleiðarinn network).

1189. For several years now, Siminn has worked towards decommissioning the traditional digital telephony system (PSTN), as telephony service with IP protocol has been taking over. According to information from Siminn, this project will in all likelihood be completed no later than mid-2024, a project that started in earnest in the year 2020. In August 2023, 3,400 locations remained to be phased out. Then Mila initially notified in the autumn of 2020, its intention to decommission the copper system in phases over a period of 10 years. Mila's newest plans constitute phasing out copper local loops step by step, such that they will be totally decommissioned at the end of 2028, and that most of the effort in decommissioning will be during the years 2027 and 2028. At the end of 2022, 20% of bitstream connections in use on fixed line networks were on copper networks. These Mila plans will therefore in the opinion of ECOI not have a significant impact during the lifetime of the analysis, particularly not in the first part of that period. One can assume that a significant part of Mila copper network customers will migrate to Mila fibre local loops as the more vigorous fibre deployment progresses.

1190. In the opinion of ECOI, it is quite clear that fibre local loops will replace a large part of decommissioned copper local loops, though it is likely that mains connected connections over 4G/4.5G and 5G mobile networks will, to some extent, replace them. It is difficult to predict the proportion in this context at this point in time.

1191. Widely outside the Capital City Area and larger urban areas, one may consider it unlikely that two, and even less likely more than two companies will deploy fibre to households and companies and offer bitstream access to them. It must be considered likely that in the more dispersed regions and in smaller urban areas, there will only be one choice in the case of fixed line network, both with respect to access on market 3a and 3b. One can also say that the possibilities of a third fixed line network operator with respect to entry to market 3a in those areas where there are already two network operators, are extremely limited and unrealistic, even in the case of the Capital City Area. This also applies to parties that provide bitstream access to fixed line networks. As previously stated, Mila seems to be

PTA Decision no. 31/2017, PTA imposed a continuing obligation on Mila to provide residences and places of work with year-round operations, with a connection to the public electronic communications network. The period of validity of the designation was decided to be until 31 December 2020, but with authority to extend to 31 December 2022 with notification to this effect. With a PTA letter to Mila dated 31 August 2020, PTA notified the company that the obligation would apply until 31 December 2022. Mila appealed the PTA notification on extension to the Appellate Committee for Electronic Communications and Postal Affairs (AC), but the Committee dismissed the appeal as this was not an administrative decision by the PTA that was subject to appeal. Mila referred the ruling to the courts and lost the case before the District Court on 7 April 2022 but won the case before the National Court on 14 October 2022. No universal services obligations have thus rested on Mila from and including that day.

systematically guaranteeing access for itself to the municipality networks in question, either by purchasing them, renting them long term or taking over their operations or at the very least providing its GPON bitstream service through them. Taking into account the above specified future decommissioning of the copper system, it is clear that Mila is actively endeavouring to assure its future position as a nationwide network operator. Then Mila purchased the Siminn mobile phone distribution system at the beginning of 2021, which means that Mila is in a unique position in this country among network operators, as the only company that owns and operates both fixed line network and mobile phone distribution system.

1192. The following table shows the number of companies with more than 5% market share in the relevant municipality on markets 3a, 3b and in retail at the end of 2022. When the number of companies is decided on market 3b and in retail, mobile network share is also taken into account.

Table 5.7 Number of companies on markets 3a and 3b and in retail at the end of 2022

Capital area

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Reykjavíkurborg	2	3	4
Kópavogsbær	2	2	4
Seltjarnarnesbær	2	2	4
Garðabær	2	2	4
Hafnarfjarðarkaupstaður	2	3	4
Mosfellsbær	2	3	4
Kjósarhreppur	1	4	4

Suðurnes

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Reykjanesbær	2	3	5
Grindavíkurbær	1	3	4
Sveitarfélagið Vogar	1	3	4
Suðurnesjabær	1	3	4

West

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Akraneskaupstaður	2	2	4
Skorradalshreppur	1	4	3
Hvalfjarðarsveit	2	4	4
Borgarbyggð	3	5	3
Grundarfjarðarbær	1	3	3
Eyja- og Miklaholtshreppur	2	1	3
Snæfellsbær	1	4	3
Sveitarfélagið Stykkishólmur	2	3	4
Dalabyggð	2	3	3

Westfjords

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Bolungarvíkurkaupstaður	2	3	4
Ísafjarðarbær	2	3	4
Reykhólahreppur	2	4	3
Tálknafjarðarhreppur	2	4	4
Vesturbyggð	1	3	3
Súðavíkurhreppur	2	4	4
Árneshreppur	2	4	3
Kaldrananeshreppur	1	2	2
Strandabyggð	1	3	3

North-west

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Húnaþing vestra	2	2	3
Sveitarfélagið Skagaströnd	1	1	2
Skagabyggð	1	3	3
Húnabyggð	2	2	3
Skagafjörður	1	2	2

North-east

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Akureyrarbær	2	3	3
Norðurþing	2	2	2
Fjallabyggð	2	3	3
Dalvíkurbyggð	2	3	3
Eyjafjarðarsveit	2	3	2
Hörgársveit	1	3	2
Svalbarðsstrandarhreppur	2	3	2
Grýtubakkahreppur	2	5	3
Tjörneshreppur	1	2	2
Þingeyjarsveit	1	3	3
Langanesbyggð	2	1	3

East

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Fjarðabyggð	1	3	4
Múlaþing	2	2	4
Vopnafjarðarhreppur	2	2	2
Fljótsdalshreppur	3	4	3

South

Municipality	Number of network operators	Number of bitstream providers	Number of retailers
Vestmannaeyjabær	1	3	3
Sveitarfélagið Árborg	2	3	4
Sveitarfélagið Hornafjörður	2	3	3
Mýrdalshreppur	2	3	3
Skaftárhreppur	5	4	3
Ásahreppur	1	3	4
Rangárþing eystra	2	5	4
Rangárþing ytra	3	5	4
Hrunamannahreppur	2	4	3
Hveragerðisbær	2	3	4
Sveitarfélagið Ölfus	2	4	4
Grímsnes- og Grafningshreppur	1	4	3
Skeiða- og Gnúpverjahreppur	1	4	4
Bláskógabyggð	2	4	3
Flóahreppur	1	3	3

1193. On the wholesale market 3a, it is merely Ljósleiðarinn and Tengir that can be considered significant competitors to Mila in their territories. Snerpa is also considered to be in quite a strong position in Ísafjörður and neighbouring area in the West Fjords. If the Eygló plans in the Westman Islands for fibre deployment to the whole municipality are successful

during the coming years, one must consider the company to be a significant competitor to Mila on the relevant wholesale market in that municipality. On market 3b, it is mainly Ljósleiðarinn, Tengir and Snerpa that can be considered significant competitors to Mila.

1194. It varies how many active network operators there are in each municipality in market 3a in this country, and that have more than 5% market share in the relevant area, but generally there are either one or two, except for there being 3 in Fljótsdalshreppur, Borgarbyggð and Rangárþing ytra and 4 in Skaftárhreppur. Fljótsdalshreppur is a very sparsely populated municipality with only a number of tens of fibre local loops. In Borgarbyggð they are Míla, Ljósleiðarinn and Ljósleiðari Borgarbyggðar. The reason why there are 4 fibre networks in Skaftárhreppur is that separate countryside networks are operating, along with Mila.

1195. The number of bitstream operators on fixed line networks with more than 5% market share in the relevant area also varies in each municipality on market 3b in this country, and they are in the range of 2-5, being 5 in Borgarbyggð, Grýtubakkahreppur, Rangárþing ytra og Rangárþing eystra. As the mobile network solutions in question belong in the opinion of ECOI to market 3b, the providers of bitstream access are more than on market 3a. For example, Hringdu has an agreement with Siminn on access to the Siminn mobile phone network at a national level.

1196. Access barriers are generally less on the retail market in question than on the relevant wholesale markets, particularly on market 3a, and the number of retail companies with more than 5% market share in the relevant municipality is normally more than on market 3a in the country's municipalities, and not dissimilar on market 3b. Retail companies can among other things get bitstream access through Access Option 3 with Mila and thus connect to most households and companies in the country. If it had not been for obligations on Mila for many years, is not certain that this possibility would have been available to electronic communications companies. On the relevant retail market, there is also variation in how many retail companies with more than 5% market share provide this service in this country in each municipality. The number ranges from 5 (Reykjanesbær) where it is highest, down to 2 (Skagabyggð) where it is lowest. In general, one can say that the number is 3-4 in the majority of municipalities in this country.

5.5.2.5 Market share on market 3a by municipality

1197. According to paragraph 2 of Article 18 of the Regulation on market analysis in the field of electronic communications it is stated that it is important when assessing market power of an electronic communications company to take into account the market share of the company that may have significant market power on the relevant market, and the competitors of this company, and furthermore to take into account the competitive pressure that potential competitors can provide in the mid-term. As has previously been stated, it is not the task of this market analysis to designate an undertaking as having significant market power on the relevant retail market, or on a specific geographic part of the retail market. On the other hand, market share on the retail market is informative and important in the geographic delineation of the relevant wholesale markets and is one of the factors used widely to support this delineation. Market share on the retail market, and other elements that provide a picture of competitive conditions on the relevant retail market or on a specific

geographic part of market at retail level, can be of importance in assessing significant market power on the relevant wholesale market or on individual geographic parts of that market.

1198. These issues, among other things the division of market share by geographic area at retail level, were discussed in Section 5.4.2.5 here above. Reference is made to that discussion. The main task of this market analysis is to assess market power on the relevant wholesale markets 3a and 3b, and as appropriate to impose obligations on an undertaking, one or more, that will be designated as having significant market power in those geographic areas where active competition may not be in place from a forward-looking point of view.

1199. According to paragraph 3 of Article 18 of the Regulation, market share gives the first indication on market structure and on the proportional importance of the various electronic communications companies operating on the relevant market. One should interpret market share with the relevant market circumstances in mind, particularly taking account of the activity or the dynamics of the competition in place on the relevant market and the extent to which products or service are differentiated.

1200. In paragraph 4 of the same Article, it states that significantly high market share of one company over a significant period of time, or greater than 50%, is considered to be a strong indication of significant market power, except in exceptional circumstances. Market share could on the other hand only act as an indication of the above if competitors cannot increase their offer sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5, it is important to keep in mind that under certain circumstances, a company with a high market share cannot operate to a significant degree without concern for customers with a strong bargaining position, for example if the countervailing buying power is substantial.

1201. It states in paragraph 6 that one should also take into account that a company may have significant market power despite having a lower share than 50% of the relevant market. It matters for example whether the relevant company is generally powerful with respect to capital, technology, infrastructure and offer of goods or services. The conclusion on significant market power is based on overall assessment where both market share and factors related to market structure are meaningful. It is not likely that significant market power exists if market share is less than 40% on the relevant market. There can however be exceptional instances where competitors are not in a position to react to behaviour of an electronic communications company that is below this limit such that an electronic communications company can be considered to have significant market power although it has less than 40% market share.

1202. In paragraph 7 it states that if market share is high, but under 50%, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be conducted before an opinion is reached on the existence of significant market power. ECOI considers this also to apply if market share is over 50%, particularly in duopolies or oligopolies, as the 50% boundary does not automatically lead to a case of significant market power. It is for example clear that in duopolies, one of the companies could have a little over 50% and the other a little under 50%. It is quite another matter than where one company has around 50% and, for example, many

other companies have low market shares. This means that market share is only one of many criteria to take into account when assessing market power.[299]

1203. One method of including the size and strength of competitors by area when conducting geographic analysis, is, as stated above, to examine the market share of market players in specific areas, in this instance by municipality. It would be ideal if not only market share at a given point of time was shown, but also its development over time in order to make it possible to identify potential trends in this connection. In this context, two points in time are often enough. Should indications emerge of significant changes in market share through points in time in certain areas and not in others, then this could be indicative of varying competitive conditions by area.

1204. One must keep in mind that at this stage in the case, these are not "real" market shares, as the final delineation of the geographic market in the relevant wholesale market is not yet concluded. As stated in Sections 5.5.3 and 5.5.4 here below, ECOI considers there to be reason to delineate the geographic market of the relevant wholesale market in this country. In those instances where the relevant geographic market is composed of more than one municipality, market share of the company's must be calculated within this set of municipalities that form the relevant geographic market, having regard to assessment of significant market power on the relevant market, that will be conducted in Section 6.

1205. In paragraph 3 of Article 44 of the Electronic Communications Act, it states that when conducting market analysis, ECOI shall in a forward-looking manner, assess how the development of the relevant market would be if obligations were not in place, pursuant to Chapter IX of the Act (the Modified Greenfield Approach) and among other things take into account the following factors:

a. Market development that has an impact on the likelihood that the relevant market is tending towards active competition;

b. All competitive restraint at relevant wholesale and retail levels;

c. Other rules or measures that have an impact on the relevant market, or related retail market.

1206. In paragraph 5 of Article 2 of the above specified Regulation on market analysis, it states that markets shall be analysed with a view to likely developments in the near future, to the extent possible. This means that when ECOI conducts market analysis, the Authority shall assess likely development on the relevant retail market if no obligations applied at wholesale level, among other things, whether the relevant market or a specific geographic part of that market, tends towards active competition. As such analysis should be forward-looking, it is important that ECOI endeavours to assess future development of market share

[299] In Article 19 of the Regulation, examples are given of other factors that can affect assessment of market power, for example access barriers, barriers to growth, total size and proportionate size of a company, control of infrastructure that is difficult to duplicate, technical and/or commercial advantage or dominance, countervailing buying power, access to capital, product differentiation, economies of scale and scope, network effects, vertical integration, highly developed distribution and sales systems, long-term access agreements and potential competition.

during the lifetime of the analysis, and whether the deviations that may have been identified from the current and historical market shares are likely to increase, decrease or remain relatively stable.[300] This applies both to the prediction of development of market share at retail level, as is done in Section 5.4.2.5, and also to the relevant wholesale markets.

1207. In Article 8 of the Regulation, which discusses assessment of a related retail market, and which is in Chapter II of the regulation which discusses the definition of product or service markets and geographic markets, it states that the starting point for all analysis is assessment of the relevant retail market or retail markets, having taken into account demand-side and supply-side substitutability from the perspective of consumers during the expected lifetime of the analysis, based on current market conditions and their likely development during the period of validity of the analysis. This assessment was made in Section 5.4 here above with respect to geographic analysis.

1208. In paragraph 1 of Article 16 of the Regulation, where there is discussion on the conduction of market analysis, which is under Chapter III of the Regulation which discusses the conduction of market analysis and assessment of significant market power, it states that market analysis shall generally constitute analysis of whether it is likely that active competition will be realised on the relevant market during the lifetime of the analysis in question and thus whether a lack of active competition is permanent or long-term. In paragraph 2 of the Article, it states that when conducting market analysis, ECOI shall in a forward-looking manner, assess how development of the relevant market would be if there were no wholesale obligations in place and shall take into account the following elements:

[300] In a working document to the above specified Recommendation from the EU Commission on relevant markets from December 2020, it states among other things that NRAs that had up to that point in time used differentiated geographic markets, had usually identified two geographic markets, i.e. on the one hand competitive markets (active competition) and on the other hand, non-competitive markets (little or no competition). Similar views on such binary differentiation of geographic markets also appear in the above specified BEREC Common Position from 2014. Such binary division was common in geographic delineation in former years, before it became clear that such a simple methodology did not suffice, in instances of more complex and varied market structure or of competitive conditions in other respects, as for example in Denmark, Norway, Sweden and in this country, where the same party is not always the largest network operator in the various municipalities.

It is stated in the above specified working document that there could on the other hand be prevailing circumstances that meant that a specific area belonged to neither category. Such “hiatus” should be reflected in the geographic analysis. For example, competitive conditions in an area where only one network was on offer could for example be appreciably different from competitive conditions in an area where two or more networks were on offer. It was therefore in the hands of the relevant NRA to decide whether active competition was considered to prevail in a specific geographic market, given circumstances in the relevant area or areas. There was no specific number of networks that needed to be available for a market to be automatically considered a competitive market, and although the number of networks could be an important criterion when assessing competition, one also had to take other elements into account. It would not be right to only take account of the number of networks.

One could also note that up to this point in time (December 2020) practices of European NRAs, in accordance with all the Recommendations and Guidelines from the Commission and with the BEREC Common Position from 2014, had been such that a minimum of three contiguous networks with specific deployment was necessary to justify differentiated geographic markets. After December 2020, NRAs in Europe had begun to deem that two networks with parallel coverage with specific deployment would suffice, see for example the DBA analysis in Denmark from 2021 and the recent AGCOM plans in Italy and NKOM in Norway.

a. Market development that has an impact on the likelihood that the relevant market is tending towards active competition;

b. All competitive restraint at relevant wholesale and retail levels;

c. Other rules or measures that have an impact on the relevant market, or related retail market.

d. Obligations on other relevant markets.

1209. ECOI has collected data on the wholesale market 3a, where the data has been broken down by municipality at 9 points in time, i.e. for mid-year 2018, end of year 2018, end of year 2019, mid-year 2020, end of year 2020, mid-year 2021 and end of year 2021, mid-year 2022 and end of year 2022.[301] Data has been gathered among other things on wholesale share on market 3a by municipality. Since the last analysis was published in October 2021, the number of municipalities decreased on the other hand, from 69 to 64 in the years 2021 and 2022.

1210. Conclusions of this part of data collection are displayed graphically for market 3a in Tables 5.8 (at national level) and 5.9 (by municipality) here below, that is to say for the periods mid-year 2021, end of year 2021, mid-year 2022 and end of year 2022. The reason why ECOI does not show all the data in the Table in question is among other things that the accuracy of the data was somewhat lacking from some parties to the market in the first data collection. ECOI can however consult data on market development further back in time in individual municipalities or set of municipalities that may form a separate geographic market, if there is reason to specifically discuss the development of the wholesale market shares and projections on future development within these municipalities, in geographic definition of the relevant wholesale market and or/assessment of significant market power in specific areas.

1211. As can be seen in Table 5.8, Mila had the highest market share at national level in market 3a at the end of 2022 with 49% market share. Ljósleiðarinn had 43%, Tengir had 5.9% and Snerpa had 0.6%. Others collectively, i.e. a number of small local networks, had 2.2% market share. Then it can also be seen that from mid-2021, the Mila share has decreased, while the shares of others have increased.

Table 5.8 Market share of main parties on market 3a at national level at end of year 2022 and the development from mid-2021

Market share at national level

Network operator	30.6.2021	31.12.2021	30.6.2022	31.12.2022
Míla	56%	53%	51%	49%
Ljósleiðarinn	37%	39%	41%	43%
Tengir	4.8%	5.0%	5.6%	5.9%
Snerpa	0.4%	0.4%	0.5%	0.6%

[301] In Annex C one can see the data for mid-2023.

Table 5.9 Highest and second highest market share on market 3a by municipality[302]

Capital area

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Reykjavíkurborg	Ljósleiðarinn	55%	(45%)	Ljósleiðarinn	58%	(42%)	Ljósleiðarinn	60%	(40%)	Ljósleiðarinn	62%	(38%; Míla)
Kópavogsbær	Míla	51%	(49%)	Ljósleiðarinn	51%	(49%)	Ljósleiðarinn	54%	(46%)	Ljósleiðarinn	57%	(43%; Míla)
Seltjarnarnesbær	Ljósleiðarinn	63%	(37%)	Ljósleiðarinn	66%	(34%)	Ljósleiðarinn	68%	(32%)	Ljósleiðarinn	70%	(30%; Míla)
Garðabær	Míla	56%	(44%)	Míla	54%	(46%)	Míla	52%	(48%)	Míla	51%	(49%; Ljósleiðarinn)
Hafnarfjarðarkaupstaður	Míla	55%	(45%)	Míla	53%	(47%)	Míla	50%	(50%)	Ljósleiðarinn	52%	(48%; Míla)
Mosfellsbær	Míla	56%	(44%)	Míla	54%	(46%)	Míla	52%	(48%)	Míla	51%	(49%; Ljósleiðarinn)
Kjósarhreppur	Leiðarljós	99%	(1%)	Leiðarljós	100%	(1%)	Leiðarljós	100%	(0%)	Leiðarljós	100%	(0%)

Suðurnes

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Reykjanesbær	Míla	85%	(15%)	Míla	77%	(23%)	Míla	73%	(27%)	Míla	71%	(29%; Ljósleiðarinn)
Grindavíkurbær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	97%	(3%; Ljósleiðarinn)
Sveitarfélagið Vogar	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Suðurnesjabær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)

West

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Akraneskaupstaður	Ljósleiðarinn	54%	(46%)	Ljósleiðarinn	56%	(44%)	Ljósleiðarinn	58%	(42%)	Ljósleiðarinn	59%	(41%; Míla)
Skorradalshreppur	Ljóspunktur	91%	(9%)	Ljóspunktur	100%	(0%)	Ljóspunktur	96%	(4%)	Ljóspunktur	96%	(4%; Míla)
Hvalfjarðarsveit	Hvalfjarðarsveit	85%	(15%)	Hvalfjarðarsveit	88%	(12%)	Hvalfjarðarsveit	88%	(12%)	Hvalfjarðarsveit	89%	(11%; Míla)
Borgarbyggð	Míla	65%	(20%)	Míla	59%	(21%)	Míla	56%	(22%)	Míla	53%	(24%; Ljósleiðari Borgarbyggðar)
Grundarfjarðarbær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Eyja- og Miklaholtshreppur	Eyja- og Miklaholtshreppur	94%	(6%)	Eyja- og Miklaholtshreppur	94%	(6%)	Eyja- og Miklaholtshreppur	93%	(7%)	Eyja- og Miklaholtshreppur	95%	(5%; Míla)
Snæfellsbær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Sveitarfélagið Stykkishólmur	Míla	91%	(9%)	Míla	91%	(9%)	Míla	91%	(9%)	Míla	91%	(9%; Helgafellssveit)
Dalabyggð	Dalaveitur	51%	(49%)	Dalaveitur	51%	(49%)	Dalaveitur	52%	(48%)	Dalaveitur	54%	(46%; Míla)

Westfjords

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Bolungarvíkurkaupstaður	Míla	84%	(16%)	Míla	78%	(22%)	Míla	71%	(30%)	Míla	66%	(34%; Snerpa)
Ísafjarðarbær	Míla	70%	(30%)	Míla	68%	(32%)	Míla	65%	(35%)	Míla	62%	(38%; Snerpa)
Reykhólahreppur	Fjarskiptafélag Reykhólahrepps	53%	(47%)	Fjarskiptafélag Reykhólahrepps	55%	(45%)	Fjarskiptafélag Reykhólahrepps	58%	(42%)	Fjarskiptafélag Reykhólahrepps	60%	(40%; Míla)
Tálknafjarðarhreppur	Míla	96%	(4%)	Míla	93%	(7%)	Míla	93%	(7%)	Míla	92%	(8%; Snerpa)
Vesturbyggð	Míla	99%	(1%)	Míla	99%	(1%)	Míla	99%	(1%)	Míla	99%	(1%; Snerpa)
Súðavíkurhreppur	Míla	86%	(14%)	Míla	85%	(15%)	Míla	82%	(18%)	Míla	75%	(25%; Snerpa)
Árneshreppur	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	74%	(26%; Árneshreppur)
Kaldrananeshreppur	Míla	73%	(27%)	Míla	70%	(30%)	Hitaveita Drangsnes	77%	(23%)	Míla	100%	(0%)
Strandabyggð	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)

North-west

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Húnaþing vestra	Míla	95%	(5%)	Míla	94%	(5%)	Míla	94%	(6%)	Míla	94%	(5%; Tengir)
Sveitarfélagið Skagaströnd	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Skagabyggð	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Húnabyggð	Míla	75%	(25%)	Míla	74%	(26%)	Míla	72%	(28%)	Míla	72%	(28%; Húnanet)
Skagafjörður	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)

North-east

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Akureyrarbær	Tengir	59%	(41%)	Tengir	63%	(37%)	Tengir	70%	(30%)	Tengir	75%	(25%; Míla)
Norðurþing	Míla	82%	(18%)	Míla	82%	(18%)	Míla	80%	(20%)	Míla	79%	(21%; Tengir)
Fjallabyggð	Míla	73%	(27%)	Míla	71%	(29%)	Míla	67%	(33%)	Míla	65%	(35%; Tengir)
Dalvíkurbyggð	Tengir	62%	(38%)	Tengir	64%	(36%)	Tengir	68%	(32%)	Tengir	73%	(27%; Míla)
Eyjafjarðarsveit	Tengir	71%	(29%)	Tengir	77%	(23%)	Tengir	80%	(20%)	Tengir	84%	(16%; Míla)
Hörgársveit	Tengir	90%	(10%)	Tengir	93%	(7%)	Tengir	96%	(4%)	Tengir	96%	(4%; Míla)
Svalbarðsstrandarhreppur	Tengir	87%	(13%)	Tengir	90%	(10%)	Tengir	90%	(10%)	Tengir	90%	(10%; Míla)
Grýtubakkahreppur	Tengir	73%	(27%)	Tengir	83%	(17%)	Tengir	95%	(5%)	Tengir	94%	(6%; Míla)
Tjörneshreppur	Tjörneshreppur	72%	(28%)	Tjörneshreppur	78%	(22%)	Tjörneshreppur	90%	(10%)	Tjörneshreppur	96%	(4%; Míla)
Þingeyjarsveit	Tengir	84%	(16%)	Tengir	89%	(11%)	Tengir	93%	(7%)	Tengir	96%	(4%; Míla)
Langanesbyggð	Míla	89%	(11%)	Míla	89%	(11%)	Míla	87%	(13%)	Míla	87%	(13%; Tengir)

[302] The company that has the highest share in the relevant municipality is specified by name along with the market share of this company. Market share of the second largest party is shown in brackets if there is more than one fixed line network. In Appendix C one can see data on market share for mid-2023.

East

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Fjarðabyggð	Míla	98%	(1%)	Míla	98%	(1%)	Míla	98%	(1%)	Míla	98%	(1%; Fjarðabyggð)
Múlaþing	Míla	96%	(3%)	Míla	94%	(3%)	Míla	91%	(5%)	Míla	88%	(8%; Austurljós)
Vopnafjarðarhreppur	Míla	86%	(14%)	Míla	83%	(17%)	Míla	61%	(39%)	Míla	58%	(42%; Tengir)
Fljótsdalshreppur	Fljótsdalshreppur	58%	(40%)	Fljótsdalshreppur	62%	(36%)	Fljótsdalshreppur	64%	(33%)	Fljótsdalshreppur	66%	(32%; Míla)

South

Municipality	30.6.2021			31.12.2021			30.6.2022			31.12.2022		
Vestmannaeyjabær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)	Míla	99%	(1%; EYGLÓ)
Sveitarfélagið Árborg	Míla	77%	(23%)	Míla	76%	(24%)	Míla	74%	(26%)	Míla	72%	(28%; Ljósleiðarinn)
Sveitarfélagið Hornafjörður	Míla	95%	(4%)	Míla	90%	(6%)	Míla	88%	(8%)	Míla	87%	(9%; Gagnaveita Hornafjarðar)
Mýrdalshreppur	Míla	74%	(26%)	Míla	73%	(27%)	Míla	73%	(27%)	Míla	74%	(26%; Líf í Mýrdal)
Skaftárhreppur	Míla	61%	(12%)	Míla	54%	(19%)	Míla	51%	(21%)	Míla	51%	(20%; Skaftárljós)
Ásahreppur	Ásaljós	100%	(0%)	Ásaljós	100%	(0%)	Ásaljós	100%	(0%)	Ásaljós	100%	(0%)
Rangárþing eystra	Míla	81%	(19%)	Míla	79%	(21%)	Míla	79%	(21%)	Míla	78%	(22%; Ljósleiðarinn)
Rangárþing ytra	Rangárljós	42%	(31%)	Rangárljós	42%	(29%)	Rangárljós	43%	(30%)	Rangárljós	41%	(31%; Ljósleiðarinn)
Hrunamannahreppur	Hrunaljós	64%	(36%)	Hrunaljós	68%	(32%)	Hrunaljós	71%	(29%)	Hrunaljós	73%	(27%; Míla)
Hveragerðisbær	Ljósleiðarinn	52%	(48%)	Ljósleiðarinn	54%	(46%)	Ljósleiðarinn	56%	(44%)	Ljósleiðarinn	57%	(43%; Míla)
Sveitarfélagið Ölfus	Ljósleiðarinn	56%	(44%)	Ljósleiðarinn	59%	(41%)	Ljósleiðarinn	62%	(38%)	Ljósleiðarinn	63%	(37%; Míla)
Grímsnes- og Grafningshreppur	Míla	98%	(2%)	Míla	98%	(2%)	Míla	98%	(2%)	Míla	98%	(1%; Fjarskiptafélag SG)
Skeiða- og Gnúpverjahreppur	Fjarskiptafélag SG	95%	(5%)	Fjarskiptafélag SG	98%	(2%)	Fjarskiptafélag SG	98%	(2%)	Fjarskiptafélag SG	98%	(2%; Míla)
Bláskógabyggð	Míla	66%	(34%)	Míla	62%	(38%)	Míla	59%	(41%)	Míla	58%	(42%; Bláskógaljós)
Flóahreppur	Flóaljós	96%	(4%)	Flóaljós	97%	(3%)	Flóaljós	97%	(3%)	Flóaljós	97%	(3%; Míla)

1212. When one takes into account the above specified Tables 5.8 and 5.9, one can see that Mila is for the first time under 50% in market share of market 3a at national level at the end of 2022, with 49%, while the company's market share was 56% in mid-2021. Ljósleiðarinn is not far behind at national level and has 43%, while having had 37% in mid-2021. What characterises this market in this country is the two-tower position, where the market share of parties other than Mila and Ljósleiðarinn is very low at national level. As one can see in Table 5.9, the situation on the market is on the other hand, is variable by municipality.

1213. Míla is however the largest party on this market in the majority of the country's 64 municipalities, i.e. in 37 municipalities, with market share, ranging from 51% in Garðabær, Mosfellsbær and in Skaftárhreppur up to 100% market share in 9 municipalities. Then Mila has between 70-99% market share in 20 additional municipalities. Among these, Mila is still the largest in two municipalities in the Capital City Area, i.e. in Garðabær and Mosfellsbær. Approximately 32% of the country's inhabitants live in these 37 municipalities.

1214. Ljósleiðarinn has the highest market share in 7 municipalities, i.e. in Reykjavík, Kópavogur, Hafnarfjörður and in Seltjarnarnes in the Capital City Area, in Hveragerðisbær and in Sveitarfélagið Ölfus which is in South Iceland is close to the Capital City Area and in Akraneskaupstaður which is in West Iceland and is also close to the Capital City Area. In these municipalities Ljósleiðarinn market share ranges from 52% (Hafnarfjarðarkaupstaður) to 70% (Seltjarnarnes). Approximately 59% of the country's inhabitants live in these municipalities.

1215. Tengir also has the highest share in seven municipalities that are in the Northeast part of the country, i.e. in Akureyrarbær, Dalvíkurbyggð, Eyjafjarðarsveit, Hörgársveit, Svalbarðsstrandarhreppur, Grýtubakkahreppur and Þingeyjarsveit. In these municipalities Tengir market share ranges from 75% (Akureyrarbær) to 96% (Eyjafjarðarsveit). Approximately 7% of the country's inhabitants live in these municipalities.

1216. In 13 rather or very sparsely populated municipalities there are various local networks, generally owned by the municipality in question, with the highest market share. Market share of these parties is from 41% in the case of Rangárljós in Rangárþing ytra to 100% in the case

of Leiðarljós í Kjósarhreppur in the Capital City Area and Ásaljós in Ásahreppur in South Iceland. Approximately 2% of the country's inhabitants live in these areas.

1217. The Mila copper network, which previously had close to national coverage, still reached about 85% of residences and companies in the country at the end of 2022, but in recent times the company has decommissioned part of the network and plans to continue doing so through to the end of 2028, where the greatest effort in decommissioning will be in the years 2027 and 2028. Since 2016 Mila has vigorously deployed fibre local loops in the Southwest part of the country and at many locations across the country, and the network reached 63% of residences and companies in the country at the end of 2022. At Mila's autumn meeting on 22 August 2023, it was stated that the number of such local loops had now reached about 130,000 after having been 120,000 at the end of 2022, or almost the same as the number with Ljósleiðarinn at the end of 2022. So, it seems that now for the first time in 2023 the Mila fibre network has overtaken the Ljósleiðarinn network with respect to coverage. Mila said that the company's fibre investments in the year 2023 would be double what they were in 2022. In the Capital City Area, the Mila fibre network reached just over 75% of residences and companies on average at the end of 2022, while Ljósleiðarinn has almost 100% fibre deployment in that area, except in Kjósarhreppur where neither Mila nor Ljósleiðarinn operate a fixed line network. One can expect a significant reduction in this difference in deployment of fibre networks of these parties in the Capital City Area during the lifetime of the analysis.

1218. When the coverage of fibre networks owned by parties other than Mila is examined, the situation is uneven across the country. In the Capital City Area and widely in Southwest Iceland in the Ljósleiðarinn operational territory, and many locations across the country, for example in the Tengir deployment area, which is first and foremost in the Northeast part of the country, and in the Snerpa operational territory in the West Fjords, deployment of fibre networks has become very expansive. In sparsely populated and rural municipalities in the countryside, which in general have enjoyed grants from the Telecommunications Fund in connection with the project "Iceland Digital Connected", and that do not have an urban area in the relevant municipality, fibre deployment often measures large among networks other than those owned by Mila, often close to 100%, when all registered farms have been connected in connection with the project. In such municipalities, connections are generally a few tens or 100 at most. The last connections of the project was to be completed in the year 2023, by which time about 6,300 of the most rural residences/companies in the country will have been connected in connection with the project. Fibre deployment of at least one fibre network had reached just over 90% national level at the end of 2022. Parallel fibre network deployment of two parties at national level had reached just over 50% at the same time.

1219. In other municipalities that have received funding because of market failure in sparsely populated areas, the urban locality often still has VDSL service from Mila to a greater or lesser degree and Mila share in coverage is therefore still high in the municipality as a whole. In recent years, Mila has however in addition to its vigorous fibre roll-out in the Capital City Area and widely in the Southwest corner of the country, been rolling out fibre in various urban localities in the countryside, purchasing or ensuring long-time control over such networks, such as in Súðavík, Blönduós, Skagaströnd, Sauðárkrókur, Hofsós, Akureyri, Húsavík and Egilsstaðir, to name but a few urban localities. In February 2021, Mila announced the commencement of fibre roll-out in part of the Westman Islands in the year 2021. At the

beginning of 2023, Eygló ehf., an electronic communications company owned by the municipality, began fibre roll-out in the municipality and planned to complete in three years.

1220. Although an electronic communications network has achieved significant deployment in a municipality, this does not necessarily mean that take-up of service will follow to any significant degree. This can for example apply when fibre network is deployed where another fibre network is already in place. But when households and companies have limited service on older copper networks, and the fibre network is deployed in the area in question, there is a significant incentive for customers to change the network through which they receive the service. For this reason, as previously stated in Table 5.9 here above, ECOI also examined market share in local loop lease by municipality. Then it comes to light that it is precisely in such municipalities where a fibre network replaces a copper network that Mila share has become low in wholesale of local loops.

1221. In July 2020, Siminn and Ljósleiðarinn made an agreement on Siminn bitstream access to the Ljósleiðarinn fibre network. On 25 August 2021, Siminn begun to provide its service through the Ljósleiðarinn network. The agreement allows for at least [...]% of Siminn customers being on the Ljósleiðarinn network, no later than [...]. On the basis of information from Ljósleiðarinn dated 10 August 2023, Siminn customers on the Ljósleiðarinn network were [...] while they were [...] at the end of 2022. If we allow for Siminn customers having then been a similar number as at the end of 2022, there were thus approximately [...]% of Siminn fixed network customers on the Ljósleiðarinn fibre network in mid-year 2023 and [...]% of Siminn customers that were on fibre. On the basis of the Ljósleiðarinn answers, [...].

1222. In the Tengir operational territory, the situation is not entirely parallel to the Ljósleiðarinn situation in the Capital City Area as Tengir deployment to residents and companies was in the range of 15%-97% in the 12 municipalities in which the company operates and in which it has deployed fibre, i.e. Húnaþing vestra, Fjallabyggð, Dalvíkurbyggð, Hörgársveit, Akureyrarbær, Eyjafjarðarsveit, Svalbarðsstrandarhreppur, Grýtubakkahreppur, Norðurþing, Þingeyjarsveit, Langanesbyggð and in Vopnafjarðarhreppur, while Ljósleiðarinn has almost 100% fibre deployment in the Capital City Area, with the exception of Kjósarhreppur where Ljósleiðarinn has no coverage. Mila has also deployed its own fibre local loops in part of these municipalities, e.g. in Akureyri. While the Tengir deployment plans are in step with slow and relaxed deployment during the last two decades, Mila deployment plans for the next years are much more ambitious in part of the Tengir operational territory, such as in Akureyri. The gap between the companies with respect to market share on market 3a could for this reason, diminish somewhat in some of these municipalities during the period of validity of the analysis.

1223. For some considerable time now, Tengir has given Mila access to its fibre network on market 3a (dark fibre), where Mila has constructed its active bitstream service. Mila market share in the Tengir operational territory is generally higher than Tengir market share on market 3b, even when one only looks at Tengir fibre local loops. There will be more detailed treatment of this in discussion on market 3b in Section 5.6 here below.

1224. As one can see in the above specified Table 5.9, Mila market share has fallen fairly rapidly since mid-2021. ECOI considers that this can be to a large extent attributed to the above specified agreement between Siminn and Ljósleiðarinn. It is clear that a certain number

of consumers have been migrating from Mila copper network to the fibre network and Mila has not had a fibre network across the whole of the Capital City Area as Ljósleiðarinn has, though the coverage of the Mila fibre network has expanded rapidly. Another reason is the Nova success, which has up to this point in time only been on the Ljósleiðarinn fixed line network on the wholesale markets 3a/b in question, while Sýn market share has declined, and Sýn is both on the fixed line networks of Mila and on Ljósleiðarinn fibre, though much more on the Ljósleiðarinn network.

1225. In the opinion of ECOI, it is not inconceivable that this development will slow down significantly or even be reversed to some extent, or even to a considerable extent, during the lifetime of the analysis, including in the Capital City Area. This is caused by a number of factors:

- It is not inconceivable that Mila can make its mark in a more vigorous manner in competition in those areas where it becomes free of obligations.

- It is, for example, the declared policy of the new Mila owners to significantly increase investment in fibre networks and company representatives have for example said that this was being doubled in the year 2023, compared with 2022, and in addition to this the deployment plans for the coming years are ambitious and of a far greater scope than the deployment plans of competitors.

- It is also the declared policy of the company to increase usage of the company's electronic communications systems and to increase the presence of customers other than Siminn on the company's networks. [...].

- Continued purchasing by Mila of local fibre networks.

- ECOI considers that the Siminn agreement with Ljósleiðarinn will not lead to as quick a migration of customers from Mila networks to Ljósleiðarinn as took place during the previous 2-3 years, and the Mila fibre network in the Capital City Area was much less extensive than Ljósleiðarinn fibre network in that location, although Mila has been expanding it rapidly recently and will continue to do so in the coming years. For this reason, in the opinion of ECOI, there will be an insignificant difference in scope of fibre networks of the companies in the Capital City Area towards the end of the lifetime of this analysis, with the possible exception of Seltjarnarnes.

- Mila is also expanding its fibre network at many locations in Tengir operational territory and will continue to do so in coming years. One can therefore expect the Mila share to increase on the relevant market in that area during the lifetime of the analysis.

1226. Given the methodology used by ECOI in delineating geographic markets on market 3a, see Section 5.5.3 here below, ECOI considers there to be no need at this stage to make predictions on potential or likely development of market share on the relevant market in each municipality. Instead of this, ECOI will endeavour to predict on this issue in its assessment of significant market power in each geographic market in Section 6.2 here below, and efforts

will also be made in that Section to predict potential or likely development of fibre networks in each geographic market.

5.5.2.6 Pricing on market 3a by area

1227. Another important criterion when identifying whether competitive conditions may be variable between areas is the possible price difference between them at both retail level and wholesale level. If pricing of the potential SMP operator and pricing of his competitors are the same or similar across the whole country, i.e. not significantly variable between areas within the companies in question, this could provide indications that competitive conditions are not sufficiently heterogeneous between areas to justify segmented geographic markets or varying obligations by geographic area. This on its own does not however, always have to be the reality, as from the point of view of consumers, there could be a significant difference between "competitive areas" and areas where limited or no competition exists, despite the fact that the potential SMP operator's prices are the same across the country.[303]

1228. The reason could be that when the potential SMP operator sets the same price across the whole country, with the objective of maximising profit, he has to find a balance between pricing where he has a monopoly position (dominant position) and lower prices where he is in competition with other players on the market. The likely conclusion is a compromise between these two prices, as the price is lower as the "competitive area" is larger. If the "competitive area" is sufficiently large, the pricing of the potential SMP operator should be rather low, and in addition to this the price difference between him and his competitors should be small. Under such circumstances, it could be justifiable to conclude that the geographic market is the whole country because of common pricing constraint. In those instances where the "competitive area" is on the other hand, small, the "monopoly price" has more weighting in the pricing decision of the possible SMP operator and there can thus be a significant difference between his price and that of his competitors. This probably leads to a situation where the potential SMP operator has a low market share in "competitive areas". This means that consumers could perceive a significant price difference. While consumers can only purchase relatively expensive service from the potential SMP operator in areas where there is little or no competition, a relatively large number of them can purchase less expensive service from the competitors in the "competitive areas". In such instances, considerations about pricing constraint cannot be good arguments for having the country as one geographic market, despite the fact that the potential SMP operator maintains equal prices across the whole country.[304]

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[303] See Pages 27-28 in the above specified BEREC Common Position 2014.

[304] 5 See e.g. page 29 in document from Cave, M., Stumpf, U., Valletti, T: A review of certain markets included in the Commission´s Recommendations on Relevant Markets subject to ex ante Regulation, from 2006, states among other things: *" … absent significant market power regulation, a firm with market power subject to a uniform pricing constraint chooses a profit-maximizing price based on its demand curve in the universal service area as a whole rather than the distinct demand curves where it faces different levels of competition. As a result, constraints on its behaviour in competitive areas are not extended to less competitive ones, but constraints across all areas are averaged or pooled. If the resulting price contains excess profits, because of a large weight of non-competitive customers, rivals in competitive areas will either force possibly localized price cuts by the incumbent – if they are allowed – or will enjoy considerable competitive advantage. In either case conditions of competition will differ."*

1229. Another aspect that NRAs must keep in mind when they examine pricing in geographic analysis, is that uniform pricing does not necessarily indicate that the country is one geographic market if the pricing is the consequence of obligations subsequent to the designation of an undertaking as having significant market power. The discussion here above applies first and foremost to instances where the potential SMP operator prices his product in the same manner across the country entirely and of his own free will or where he is obliged to do so in another manner and subject to such obligations. If the uniform price across the country is the conclusion of obligations that were imposed subsequent to market analysis on the market being examined, the NRA in question must predict what the position would be if the obligations were not in force (the Modified Greenfield Approach).

1230. If the potential SMP operator does not maintain uniform prices across the country, this could give strong indications that differing competitive conditions exist between areas. This gives an indication that competitive pressure is greater in those areas where prices are lower. Price difference can however also reflect varying underlying costs by area. The relevant NRA must therefore, under such circumstances, assess whether the price difference results first and foremost from differing underlying costs or differing competitive conditions by area, or both.[305]

1231. Another aspect that needed to be examined is whether prices are comparable or variable between the potential SMP operator and his competitors.

1232. It is important to examine pricing and possible price differences, both at wholesale and retail level. In this Section, the possible price difference on market 3a will be examined, while in section 5.6.2.6 this will be examined for market 3b. In Section 5.4.2.7, such a potential price difference on a retail market was examined which proved not to be the case.

1233. If prices are variable between areas, this does not necessarily mean, as previously stated, that the market should be automatically segmented in accordance with such price difference of the potential SMP operator. The problem with such an approach was that the potential SMP operator could then have a direct impact on geographic definition of the relevant market, including segmentation of areas, and/or price difference could change at

[305] In the above specified Decision by the EU Commission from 7 February 2020 in the case of Sweden, which was described in detail here above, it was stated that Telia collected the same price across the country for access through fibre to detached dwellings on market 3a. The company's fibre network however only reached 37% of the population. On the other hand, the wholesale price for connections to apartment buildings varied by area. In the opinion of PTS, the difference appeared to be based on density of population and varying deployment costs. Local networks had a tendency to price wholesale access in accordance with costs and only to a limited extent according to pricing by Telia. The prices of local networks in instances of connections to apartment buildings were anything from under SEK 500 and up to over SEK 4,000, while to detached buildings they ranged from SEK 140 to SEK 220 for each detached building. The Commission had agreed with BEREC in that case that comparable prices across the whole country were not, in isolation, sufficient arguments for the geographic market being the country as a whole, particularly if such comparable prices only reached 37% of the wholesale market in question as was actually the case in Sweden. With regards to pricing criteria, it was also necessary to assess prices of parties other than Telia. PTS had not succeeded in demonstrating that prices of the local networks were comparable with those of Telia. On the contrary, PTS had identified a difference between wholesale prices of the various local networks. In the light of the above, the Commission issued an opinion to the effect that homogeneity in access prices on market 3a for fibre did not exist in Sweden. The PTS arguments to this extent were thus inadequate to come to the conclusion that the geographic market should be the country as a whole.

any particular time in accordance with his pricing policy. It is therefore more appropriate to examine the reasons for variations in pricing, i.e. whether they result first and foremost from varying competitive pressure between areas or issues such as operational distribution costs, economy of scale and population density.

1234. In general, the above specified analysis of pricing at wholesale level should be directed at the market being analysed in each instance. On the other hand, information on pricing on wholesale markets is not always readily available and it can be difficult to acquire such information. In such instances it could be useful to examine pricing on corresponding retail markets when analysing the relevant wholesale market. When such is not appropriate, the NRA should place greater emphasis on other criteria that need to be examined. Despite the fact that an NRA could encounter problems when conducting a detailed analysis of pricing, it can nevertheless be possible to examine whether market players could or were likely to use varying pricing by area or whether market players that offered their services solely in a specific area or areas, priced their service in a significantly different manner compared to that of the SMP operator.

1235. It was stated in the above specified BEREC Common Position from 2014, that, if possible, development of pricing and or price difference over time should be analysed. On specific markets, it could also be appropriate to examine pricing in connection with quality or characteristics/attributes of the service, but such aspects could also vary between areas.

1236. As stated in Section 5.4.2.7 here above, it is not possible to identify any price difference by geographic area between service providers at retail level. Then there is no significant price difference between competitors in Internet service at national level.

1237. In Section 5.1.4.2 here above, where there is a discussion on the Recommendation from the EU Commission on relevant markets from December 2020, it is stated among other things that an investigation of pricing can be important when assessing whether competitive conditions vary between geographic areas. There, the Commission urges NRAs to be careful to use not only prices as grounds for assessing varying competitive conditions, as the fact alone that prices are uniform between geographic areas does not necessarily lead to the conclusion that this was the case of a single uniform market. The Commission among other things referred to paragraph 113 in the BEREC Common Position from 2014 in this connection, and to the above specified Swedish case.

1238. Mila has however pointed out that in the Ljósleiðarinn operational territory, the set-up of Mila household connections for fibre local loops is without charge, but elsewhere it is at the expense of users. This appears to be the only price difference that users experience between areas. In the opinion of ECOI, it is not a tipping point with respect to whether the wholesale market in question should be defined geographically or not, that Mila on-site service is free of charge in the immediate environment of the company's operational sites, when the service market is almost the whole country.

1239. Mila pricing of fibre service varies by area at wholesale level, i.e. both for fibre local loops (market 3a) and for Access Options 1 and 3 (market 3b). The following table shows Mila monthly prices for fibre service (ex VAT):

Table 5.10 Mila monthly price for fibre service in August 2023

Area	Fibre Local Loop to Homes	Fibre Local Loop to Companies	Access Option 1	Access Option 3	Fibre Local Loop to homes with A1
Capital area and Akureyri	2,120 ISK	5,390 ISK	960 ISK	1,337 ISK	3,080 ISK
Rural	2,480 ISK	5,790 ISK	1,600 ISK	1,977 ISK	4,080 ISK
Difference in %	17%	7%	67%	48%	32%

1240. As can be seen in the Table, the Mila monthly prices are higher in the countryside than in the greater Capital City Area and Akureyri. The price difference for fibre local loop to the home is 18% between the areas in question, the price difference for bitstream service over Access Option 1 is 67% between the areas in question and 48% for Access Option 3. Then the price difference for fibre to companies is significantly less between areas, that is to say only 7%.

1241. One must take into account that Mila PON local loops are generally not sold without bitstream (GPON), but the product is rather in the vast majority of cases provided with bitstream, often on Access Option 1 (A1). According to information from Mila dated 11 December 2020, there were only [...] Mila fibre connections sold without bitstream which represents [...]% of Mila leased local loops, on the basis of the number of local loops leased by the company at the end of June 2020. ECOI considers there to be no need to get new figures from Mila on this issue as there was nothing that indicated that the figures have significantly changed since the end of 2020. It is therefore in the opinion of ECOI more reasonable to take into account development of the price of local loops with bitstream (most often in A1), as this is the product that Mila customers use in most instances, i.e. in about [...]% of instances at the end of 2020. When that is done, it comes to light that the price difference between areas is 33%.

1242. In a Mila email reply dated 22 September 2020 to an ECOI query on the explanation for the price difference between urban and rural areas for Mila fibre on market 3a being 17%, and about 67% on Access Option 1 on market 3b, it was stated that it was only four years since Mila had begun to offer the service to any significant degree and that the service and its distribution then had still been in continuous development, particularly with respect to distribution and use of investments related to this service. On the other hand, there was a fact that Mila installed ONT at its own cost, regardless of where in the country the service was offered. By the nature of things, it was significantly more expensive to visit customers in the countryside, not least customers on countryside networks that had been deployed in rural areas in connection with the project “Iceland Digital Connected”. Installation of ONT was part of bitstream service. This factor weighed heavily in the reasons for A1 service being more expensive in locations other than in the Capital City Area and Akureyri. As stated above, this proportional price difference remains unchanged since the end of 2020, though, such that it is now 18% in the case of fibre local loops to residences instead of 17% at the end of 2020.

1243. It was then stated in the above specified reply from Mila, that in connection with the percentage difference between fibre and bitstream in the Capital City Area and Akureyri on the one hand the countryside on the other, the main reason was that usage of fibre cables was much better than usage of bitstream equipment. In this way, there were many more

connections on each GPON installation in the Capital City Area than in the countryside. Most of those who received fibre would start to use it immediately or within a few years.

1244. Iceland has a unique position that a large part of the nation lives in the three largest urban areas in the country. Iceland also has very low population density compared with neighbouring countries, and particularly with continental Europe. Apart from the Capital City Area and Akureyri, communities are sparsely spread, and urban clusters are small. Investment and operational costs for local loop system are much greater in sparsely populated communities than in urban communities. In the opinion of ECOI this price difference in Mila fibre service can be explained at least in part by varying costs for development and operation of electronic communications networks in these areas, and by less population density and economy of scope. It can also be explained in part by varying competitive pressure between areas. It however doubtless has an impact on Mila pricing that the Capital City Area and Akureyri and its neighbourhood are also the areas where other electronic communications companies have mainly invested in fibre local loops on market terms, i.e., Ljósleiðarinn and Tengir. In these areas, Mila is investing in fibre-where another fibre system exists. It is not abnormal that other electronic communications companies invest first in the most profitable areas, i.e. in the most densely populated locations.

1245. With respect, to the difference in unit prices of fibre local loops between areas on the Mila tariff, it has been stated by Mila, among other things in the company cost analysis, that costs are higher in the countryside. This is among other things confirmed by Mila in the above specified replies from the company, dated 22 September 2020, specifically with respect to market 3b, where price difference with respect to that service is much greater between the Capital City Area and Akureyri on the one hand other areas on the other than is the case for market 3a, where the price difference is now 18%. There is also the fact that all state aid for roll-out of fibre networks in the countryside is because of this difference in cost in deploying and operating fibre. It is also clear that the number of spaces/dwellings at each address is significantly more in the most populated parts of the country, as there are more multiple dwelling buildings when compared with smaller urban areas and rural areas. The number of spaces at each address has a significant impact on unit costs. If the cost of investments and operation of fibre local loops were analysed for each area in the country, it is likely that there would be a cost difference between areas, which means that the cost difference between areas for Mila, between the two most densely populated areas of the country on the one hand and smaller urban areas and rural areas on the other, can be explained at least to a considerable degree by varying costs. It is then clear that for new parties, that do not have the same economy of scale as Mila, it is normal that they begin by showing an interest in development where population density is at its highest. This means that competition begins where it is most economic to deploy fibre local loops.

1246. There are more examples that higher charges are being collected in rural areas than urban. Tengir has the same monthly charge for urban and rural, but the start charge is higher in rural areas as local loops are normally longer in rural areas than urban. The start charge is also higher when the local loop is laid after completion of fibre deployment outside Akureyri. The Austurljós monthly charge is higher in rural areas than urban.

1247. The fact that the price for access to fibre local loops is not the same in the most populated areas of the country as elsewhere in the country can furthermore indicate that

competitive conditions differ there to some extent. There are however also convincing cost arguments for collecting differing prices in these areas as has been stated by Mila. In the opinion of ECOI there are no definitive indications that these areas are significantly different with respect to competitive conditions solely on the basis of pricing, particularly when one considers that electronic communications companies do not differentiate in price between these areas in retail and similarly, these areas are not exceptional with respect to service offer or quality of connections to any significant degree, as will be explained later.

1248. As has previously been stated, investments have also been made in fibre local loops at many locations in the country with state aid from the Telecommunication Fund and/or municipalities. ECOI has examined monthly prices for fibre local loops in countryside networks. In this work, ECOI examined public tariffs of municipalities or operators and also sent out queries. Replies were not received from all such parties, but in the following Table 5.11 one can see the local loop price in the municipalities where ECOI received information, as it was at the beginning of February 2023, and ECOI assumes that this information gives a good reflection of the situation with respect to countryside networks as a whole, as ECOI has not received any complaints about high prices from them.

Table 5.11 Local loop prices on local networks

Name of operator	Location	Mars 2021	February 2023	Increase
Austurljós	Múlaþing	3,490 ISK	3,490 ISK	0%
Árneshreppur	Árneshreppur		3,596 ISK	
Ásaljós	Ásahreppur	3,000 ISK	3,164 ISK	5%
Bláskógaljós	Bláskógabyggð	3,000 ISK	3,244 ISK	8%
Dalaveitur	Dalabyggð	3,075 ISK	3,574 ISK	16%
EYGLÓ	Vestmannaeyjabær		3,951 ISK	
Eyja- og Miklaholtshreppur	Eyja- og Miklaholtshreppur	3,472 ISK	3,646 ISK	5%
Fjarðabyggð	Fjarðabyggð	2,852 ISK	2,852 ISK	0%
Fjarskiptafélag Reykhólahrepps	Reykhólahreppur	3,596 ISK	3,596 ISK	0%
Fjarskiptafélag SG	Skeiða- og Gnúpverjahreppur	3,100 ISK	3,300 ISK	6%
Flóaljós	Flóahreppur	3,000 ISK	3,240 ISK	8%
Gagnaveita Helgafellssveitar	Sveitarfélagið Stykkishólmur	3,190 ISK	3,490 ISK	9%
Gagnaveita Hornafjarðar	Sveitarfélagið Hornafjörður	3,100 ISK	3,100 ISK	0%
HEF veitur	Múlaþing	3,400 ISK	4,135 ISK	22%
Hrafnshóll	Skaftárhreppur	2,852 ISK	2,852 ISK	0%
Hrunaljós	Hrunamannahreppur	3,162 ISK	3,565 ISK	13%
Húnanet	Húnavatnshreppur	3,224 ISK	3,348 ISK	4%
Hvalfjarðarsveit	Hvalfjarðarsveit	2,945 ISK	3,286 ISK	12%
Leiðarljós	Kjósarhreppur	3,000 ISK	3,489 ISK	16%
Ljósfesti	Borgarbyggð - Bæjarsveit	3,100 ISK	3,100 ISK	0%
Ljósleiðari Borgarbyggðar	Borgarbyggð - Dreifbýli	3,090 ISK	3,090 ISK	0%
Ljóspunktur ehf.	Skorradalshreppur	1,364 ISK	1,364 ISK	0%
Rangárljós	Rangárþing ytra	3,000 ISK	3,346 ISK	12%
Skaftárljós	Skaftárhreppur	3,472 ISK	3,472 ISK	0%
Average		**3,067 ISK**	**3,304 ISK**	**8%**
Median		**3,095 ISK**	**3,347 ISK**	**8%**
Highest price		**3,596 ISK**	**4,135 ISK**	**15%**
Lowest price		**1,364 ISK**	**1,364 ISK**	**0%**

1249. These are prices that are either collected directly from consumers including VAT, or by electronic communications companies in wholesale. Then there are very few municipalities that do not collect any local loop lease charge.

1250. If proportional increases of the above specified operators during the period March 2021 until February 2023 are compared with the increase in indices for the same period, then it comes to light that among 13 operators that increase monthly price for fibre local loop, the increase in monthly price of one party is in excess of the increase of the consumer price index.[306] During the period, the consumer price index increased by about 16.4%, the wages index by about 16.2% and the building index by about 18%, which means that the increases of two of the operators is in line with the increase in consumer price and wages indices. Proportional increases of other operators are lower than the increase in the relevant indices.

1251. As can be seen in the Table, the average price in February 2023 is ISK 3,304/month including VAT or ISK 2,665/month ex VAT. These are P2P local loops, where, according to the

[306] Base 2009.

Mila tariff, the monthly price for the company's fibre local loops is ISK 2,730 ex VAT in the countryside after the increase in the Mila tariff on 1 June 2022.

1252. Some of the local networks that have been funded by the state and/or municipality are now owned by Mila or are in long-term lease to that company. The networks of Skútustaðahreppur and of Vopnafjarðarhreppur are now owned by Tengir. The Tengir local loop lease price is ISK 3490/month including VAT (ISK 2815 ex VAT) after the increase to Tengir tariff on 1 March 2023. Ljósleiðarinn does not offer local loop lease on the relevant market, but the Ljósleiðarinn network local loop price can nevertheless influence Mila pricing for local loops. Ljósleiðarinn collects ISK 3,687/month including VAT access charge (ISK 2,973 ex VAT) after the increase to the Ljósleiðarinn network tariff on 1 January 2023. For some considerable time, Ljósleiðarinn collected the access charge directly from consumers and in addition to the access charge, Ljósleiðarinn collects a monthly charge from electronic communications companies for the bitstream service used through the local loop.

1253. Orkufjarskipti also offers a small number of local loops in the areas where the company has deployed fibre for its own use (monthly price ISK 3,472, including VAT, ISK 2,800 ex VAT) and the company Snerpa has deployed fibre in part of its operational territory (monthly price ISK 3,890 including VAT, ISK 3,137 ex VAT) and in cooperation with municipalities in the West Fjords. Austurljós has also deployed local loops in Múlaþing and also provides service over fibre local loops owned by HEF utilities and Fljótsdalshreppur. The Austurljós monthly charge for fibre local loop is ISK 3,490 including VAT (ISK 2,815 ex VAT) in urban areas and ISK 3,596 including VAT (ISK 2,900 ex VAT) in rural areas.

1254. As stated here above, the monthly price for Mila fibre local loops in the countryside is similar but slightly lower than the monthly price from Tengir, Austurljós and Orkufjarskipti, while the monthly price from Snerpa is slightly higher.[307] It is also similar to the average price on local countryside networks as shown in the Table here above. Snerpa fibre local loops are only used for its own bitstream service up to this point in time, so there are no external sales with that company. In reality one can say that same applies to almost all Mila fibre local loops, i.e. that only a very small number of Mila local loops are provided without Mila GPON bitstream service. This means that the combined Mila monthly charge for fibre local loops and GPON service (A1) means more to Mila than pricing of a separate local loop as the former is the service that is in most instances delivered to external parties. As previously stated, Ljósleiðarinn is not offering local loop access without bitstream service.

1255. Taking all of the above into account, ECOI considers that pricing by Mila and competitors of the company on the relevant market and on the related bitstream market (market 3b) on its own does is not a sufficiently decisive factor to justify segmented geographic markets in this country. Though there is some difference in Mila wholesale prices by geographic area, consumers do not perceive such a difference at retail level, regardless of the service provider they use. On the decision as to whether it is appropriate to segment geographic markets on the relevant wholesale markets in this country, one must take more factors into account, as is done in Section 5 as a whole.

[307] In the Snerpa home package, the monthly charge for fibre is included.

5.5.2.7 Other aspects, including marketing behaviour, marketing policy, service offer, quality, characteristics and functionality/usefulness of connections and nature of demand by area

1256. Other criteria that NRAs can take into account for the purpose of revealing a possible difference in competitive conditions between areas are for example:

- Potential difference by area of market behaviour of electronic communications companies, among other things, marketing and market or sales policy.
- Possible difference by area in characteristics and attributes of service, e.g. quality, supply and functionality or usability.
- Nature of demand, which can be local, i.e. bound to one area or a number of areas without covering the whole country.

1257. With respect to the relationship between the above specified criteria, one may assume that the greater the variation in competitive conditions between areas, the greater the correlation should be between areas where each criterion is fulfilled. In other words, one could say that where there is a large difference in competitive conditions between areas, then this can be explained by:

- Many market players that have or could possibly enter the market in the area or areas in question.
- A lower market share of the significant market power operator in the area or areas in question.
- Lower prices of the SMP operator and/or of his competitors in the area or areas in question.

1258. In Section 5.4.2.8 here above there was discussion as to whether various issues other than price indicated that competitive conditions on a retail market indicated that the geographic market in question should be segmented, but as previously stated, the main task of this analysis is not the relevant retail market, but rather the relevant wholesale markets. There the conclusion was that ECOI did not consider that issues such as market behaviour, market policy, service offer, quality, attributes, characteristics and functionality/usability of connections of electronic communications companies on the relevant retail market, nor the nature of demand, were so different between areas in this country that they provided an indication that the retail market in question should be segmented geographically. In this Section there will be discussion on these issues with respect to wholesale level.

1259. Regarding service offer of electronic communications companies on market 3a, it is the same, or almost the same in all areas where the relevant access technology is in fact being offered.

1260. Mila stated in its comments on the market analysis that was completed with the ECOI Decision no. 5/2021 that there was a difference in service offered by area, as Mila offered 1 Gb/s speed in the competitive areas, but only 500 Mb/s outside them. It is no longer the case

that the company only offers 1 Gb/s speed in those areas that Mila defined as competitive areas, but the company has been upgrading all its fibre connections to 1 Gb/s. One can however note that on 22 August 2023, Mila, announced its plans to adopt an XGS-PON solution which could technically offer up to 10 Gb/s symmetric performance and to open service on 1 October 2023 in the Capital City Area, but such that 10 Gb/s would only on offer in the Múli telephone exchange area, and 2.5 Gb/s elsewhere in the area. The whole Capital City Area would then be upgraded to 10 Gb/s performance by 1 April 2024. On 13 September 2023, Ljósleiðarinn announced its plans to offer an upgrade to 10 Gb/s service across its whole operational territory from and including 1 October 2023.

1261. With respect to quality, attributes, characteristics and functionality/usability of connections, there is detailed discussion on these issues in Section 3. There it was among other things stated that differentiation in characteristics of Internet access, such as performance and service quality, was small, if any, except possibly in the case of older generations of the mobile networks in question. The quality of the relevant access technology, its attributes, characteristics and functionality/usability, is therefore comparable between areas. Other internal quality aspects in the operations of retailers, such as their core systems, capacity of their foreign connections and other aspects that can impact on consumer perception of the quality of service do not have a direct impact on access networks at each location.

1262. ECOI also refers to the ECOI user surveys from 2020 and 2022, where most respondents that had access through VDSL considered that their connections adequately met the needs of the household. Then one can mention that many other factors have an impact on consumer experience with respect to performance of network connections, not least capacity of wireless network connections within homes, which is dependent on very many variables, such as other wireless networks in the vicinity and the nature and thickness of partition walls in the premises.

1263. Marketing policy of parties that operate on market 3a must be considered to be homogeneous for the whole country. It cannot be seen that market operations of the wholesale companies on the relevant market with regards to selling to retailers, vary by geographic area when one considers characteristics of the product, promotional work or how purchasers approach the product.

1264. When one considers demand from access seekers, one cannot conclude that it differs to some extent by geographic area, as an access seeker is fulfilling the needs of end-users, which are, as stated in Section 5.4.2.8 here above, the same across the country.

1265. With the above in mind, ECOI does not consider that issues such as market behaviour, market policy, service offer, quality, characteristics, attributes and functionality/usability of connections of electronic communications companies on the wholesale market in question, nor the nature of demand, differ so greatly between areas in this country that it provides an indication, on its own, that the wholesale market in question should be segmented geographically. Which means that one must examine more factors.

5.5.2.8 Summary of geographic assessment of market 3a

1266. As stated in Section 4.2.9 here above it was the ECOI decision that the wholesale market 3a for local access with a fixed connection comprises access to physical connections in an access network in copper and fibre networks, along with the corresponding virtual network solutions that fulfil the criteria described in the Guidelines on the relevant market, i.e., 1) that access is local and not central; 2) that the lessee can choose the service he provides, and has guaranteed carrying capacity; 3) that the lessee has full control of the connection.

1267. In this Section one can find the ECOI conclusion on geographic analysis of competitive conditions by area on the relevant wholesale market 3b. As stated in Section 5.3 here above, it is the ECOI conclusion that municipalities are the most appropriate base unit as a starting point for the geographic analysis on which to base geographic analysis, given the circumstances in this country. The next step was therefore to categorise together those geographic units where competitive conditions were sufficiently homogeneous.

1268. On page 19 in the above specified Commission working document accompanying the Recommendation on the relevant markets from December 2020, there is discussion on three conditions that geographic units need to fulfil that were specified in the Commission SMP Guidelines from 2018.[308] One such condition is that a geographic unit shall reflect deployment of electronic communications networks of all electronic communications companies. In the BEREC Common Position on geographic aspects of market analysis from 2014, there is discussion on which factors needed to be examined before embarking on an assessment of whether there is a need for a more detailed analysis of competitive conditions in differing geographic areas. In this analysis there is for example discussion on deployment of electronic communications networks. From the above specified one can conclude that when analysing geographic markets, it is extremely important to take account of deployment of electronic communications networks, as ECOI is obliged to have a clear overview of the networks in place in the relevant area, of electronic communications companies that are operating and of characteristics of service in the area in question.

1269. One must keep in mind that, according to the Commission working document, NRAs should segment geographic areas where the number of suppliers is the same between geographic areas if these are not the same suppliers between geographic areas, particularly with respect to the main supplier. Then the existence of companies that are wholesale-only operators and/or of co-investment agreements, could have a significant impact on competitive behaviour. This could be taken into consideration when the market was defined, as appropriate in each instance, i.e. not initially when assessing market power.[309]

1270. In Section 5.5.2.2, one can find a detailed description of the deployment of copper networks, fibre networks and 4G, 4.5G and 5G mobile networks by municipality and a prediction of development of deployment. The prediction is based on the current status of electronic communications networks in municipalities, deployment plans of the electronic communications companies and their current and planned co-investments. ECOI also takes

[308] See similar ESA Guidelines from November 2022.

[309] See page 20 in the Commission working document and Commission discussion on *wholesale-only operator* in case IT/2019/2181.

into account whether the area in question is urban or rural and whether it is foreseen that there will be parallel network coverage in the relevant area.

1271. In Section 5.5.2.3, there was discussion on the access barriers in place on market 3a by area, where varying levels of competition between areas is generally the result of varying access barriers. New competitors generally first enter areas where fewer access barriers prevail and where economy of scale is greater. On electronic communications markets, barriers to entry are normally related to economy of scale and sunk costs. Such entry barriers can furthermore result from legal factors such as granting of licences. For this reason, it was decided to examine economy of scale and sunk cost by geographic area with the intention of drawing conclusions on varying competitive conditions. In this Section the conclusion was reached that access barriers for new entries to the market in question were significantly greater in rural areas than urban, both with regards to fewer possibilities to leverage economy of scope in developing networks and also with regards to costs for trunk line connections to provide service across the area.

1272. In Section 5.5.2.4 there was discussion on the number of electronic communications companies on market 3a, by municipality. This is an effective methodology to identify access barriers by area. The number of companies operating both on the retail market and wholesale market was taken into account. On market 3a, electronic communications companies that operate their own electronic communications network in this country were taken into account in order to determine the number of competitors that provide or could provide service in a specific area. It was taken into consideration that competitive conditions can also vary by area as a result of the size of such competitors, no less than as a result of their number. The conclusion was reached that on wholesale market 3a, it is mainly Ljósleiðarinn and Tengir that could be considered significant competitors to Mila in their territories. Snerpa is considered to be in quite a strong position in Ísafjörður and neighbouring area in the West Fjords.

1273. Discussion on market share on market 3a by area can be found in Section 5.5.2.5. At this stage in the case these are not “real” market shares, as the final delineation of the geographic market in the relevant wholesale market is not yet concluded. Final evaluation of significant market power with respect to geographic markets can be found in Section 6, and this issue is important in such evaluation.

1274. ECOI has gathered data on wholesale market 3a, where the data has been broken down by municipality at nine points in time from mid-year 2018. From the data one can see that Mila had the highest market share at national level in market 3a at the end of 2022 with 49% market share. Ljósleiðarinn had 43%, Tengir had 5.9% and Snerpa had 0.6%. Others collectively, i.e., a number of small local networks, had 2.2% market share. From mid-year 2021 the Mila share has decreased, while the shares of others have increased. Mila is for the first time under 50% in market share on market 3a national level at the end of 2022, with 49%, while the company’s market share was 56% in mid-2021. Ljósleiðarinn is not far behind at national level at 43%, while having had 37% in mid-2021. On the other hand, it is also stated there that market share varies greatly between municipalities.

1275. Another important criterion when identifying whether competitive conditions may be variable between areas is the possible price difference between them at both retail level and

wholesale level. Discussion on price difference by area can be found in section 5.5.2.6. Varying pricing between areas can provide strong indications that competitive conditions differ between area, which can justify differentiated geographic markets or varying obligations by area. In the same way, level pricing at the national level can provide an indication that the country is one market. Pricing on its own does however not tell the full story, and from the point of view of consumers, there could be a significant difference between "competitive areas" and areas where limited or no competition exists, despite the fact that the potential significant market power operator's prices are the same across the whole country. Level pricing does not necessarily give an indication that the country is all one geographic market, if the pricing is the result of obligations subsequent to designation of an undertaking as having significant market power. The conclusion of this Section was that pricing by Mila and of competitors of the company on the relevant market and on the related bitstream market (market 3b) on its own is not a sufficiently decisive factor to justify segmented geographic markets in this country. Though there is some difference in Mila wholesale prices by geographic area, consumers do not perceive such a difference at retail level, regardless of the service provider they use. On the decision as to whether it is appropriate to segment geographic markets on the relevant wholesale markets in this country, one must take more factors into account, as is done in Section 5 as a whole.

1276. Finally, there was discussion in Section 5.5.2.7 on other issues, such as market behaviour, the service offer, quality, characteristics of the product, functionality of the connection and nature of demand in the area when identifying potential difference in competitive conditions between areas. The conclusion there was that ECOI considers that issues such as market analysis, marketing policy, service offer, quality, attributes, characteristics and functionality/usability of connections of electronic communications companies on the relevant wholesale market, nor the nature of demand, differed to such an extent between areas in this country that they provided an indication, on their own, that the relevant wholesale market should be segmented geographically. Which means that one must examine more factors.

1277. Having taken all the above into account, and particularly with respect to the significant difference in deployment of fibre networks and of the existence of parallel coverage by fixed line networks, and the substantial difference in market share between municipalities, which are reflected in varying competitive conditions between areas, ECOI considers there to be strong arguments for segmenting geographic markets on the wholesale market in question in this country. With this assessment, ECOI takes a forward-looking approach and makes predictions on, among other things, potential or likely fibre deployment in the varying areas during the lifetime of the analysis. Discussion and arguments for criteria for grouping municipalities into geographic markets and the conclusions of the categorisation can be found in Section 5.5.3 and then in Section 5.5.4 one can find a summary of the conclusion. When assessing significant market power on all geographic markets in Section 6.2, efforts will among other things be made to predict potential or likely development of market share in the relevant wholesale market on the geographic markets in question.

5.5.3 Criteria for grouping of municipalities into geographic markets and conclusion of the categorisation

1278. Here below one can find the ECOI conclusion regarding delineation of geographic markets on market 3a. As will be shown, the geographic markets will total 38. In Section 6, ECOI will then assess the competitive status on all these geographic markets, also in areas A, B and C and as appropriate, designate undertakings, one or more, as having significant market power on the specific geographic markets.

1279. ECOI also takes into account development of fibre deployment by network operators, and whether parallel fibre network coverage exists. This particularly applies to when one looks to the future, as it is clear that fibre local loops will finally replace copper local loops where this is possible, otherwise they will be replaced by powerful mobile networks. In the opinion of ECOI, there is a difference between municipalities as to whether the likely development will lead to parallel fibre network coverage and ECOI expects that this will only take place in urban areas. When assessing significant market power on all geographic markets in Section 6.2, efforts will be made, among other things, to predict potential or likely development of market shares on the relevant wholesale market on the geographic markets in question.

5.5.3.1 Area A - Probable competition

1280. ECOI makes the following conditions that must be fulfilled for a municipality to be included in this area:

- Parallel coverage by **2** fixed line networks[310] is greater than **90%**, **and**
- No party has more than **70%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**
- At least **4** electronic communications companies are operating on the retail market.

or

- Parallel coverage of **2** fixed line networks[311] ranges from **75%** to and including **90%**, **and**
- No party has more than **65%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**
- At least **4** electronic communications companies are operating on the retail market.

or

- Parallel coverage of **2** fixed line networks[312] ranges from **60%** two and including **75%**, **and**
- No party has more than **60%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**
- At least **4** electronic communications companies are operating on the retail market.

[310] At least one of the networks shall be an open access network.
[311] At least one of the networks shall be an open access network.
[312] At least one of the networks shall be an open access network.

or

- Parallel coverage of **2** fixed line networks[313] ranges from **50%** two and including **60%**, **and**
- No party has more than **55%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**
- At least **4** electronic communications companies are operating on the retail market.

1281. One can expect that when parallel coverage of open networks is in place, a basis will be created for active competition, taking place. As parallel coverage increases, more consumers have a real choice of electronic communications company with which they choose to do business. Electronic communications companies then have a choice of network operator and are not dependent on one party for a local loop to provide their retail service. With the above conditions, one is weighing parallel network coverage against market share on the wholesale market, such that the smaller the deployment the stricter the conditions for market share on the wholesale market, i.e. the higher the market share have to be. In selecting these criteria, account is taken of the conclusion and Guidelines from the EU Commission in the DBA case in Denmark from 2021-2022, see discussion in Section 5.1.10.7 here above. With respect to market share on the wholesale market, it is taken into account that the share is not higher than the specified criterion at the end of 2022 and for the future, i.e. ECOI considers that the share may not exceed a specific criterion during the lifetime of the analysis. Then the retail share and the number of retail operators is taken into consideration in order to confirm that this major deployment has in all likelihood led to active competition on the relevant market at retail level and that wholesale obligations are no longer necessary.

1282. The municipalities that fulfil the above specified conditions are 8:

- Akraneskaupstaður
- Borgarbyggð
- Garðabær
- Hafnarfjarðarkaupstaður
- Hveragerðisbær
- Kópavogsbær
- Mosfellsbær
- The City of Reykjavík

5.5.3.2 Area B - Mila with high market share

1283. In area B, municipalities are categorised together where the deployment of parallel fixed line networks is small, i.e. below 40%, where Mila market share on market 3a is higher than 70% and where there is one electronic communications company with over 50% market share in the retail market. The 15 municipalities that fulfil these conditions are:

[313] At least one of the networks shall be an open access network.

- Fjarðabyggð
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Tálknafjarðarhreppur
- Vesturbyggð[314]

1284. These municipalities also have in common that the situation is either that fibre deployment has not increased recently or that Mila is the party that is deploying fibre or has purchased a fibre network that another party has laid, so for this reason, ECOI does not expect that the situation will change much in the near future.

1285. Grindarvíkurbær also fulfilled these conditions at the end of 2022 while FST considers it on the other hand appropriate to examine that municipality specifically as it is established that Mila and Ljósleiðarinn have plans for cooperative fibre deployment in that municipality. Múlaþing also fulfils these conditions as at that location, HEF utilities has deployed fibre, so the municipality also has to be examined specifically. The same applies to Westman Islands and Árneshreppur, as those municipalities have commenced fibre deployment with the objective of deploying to the entire municipalities, so they need to be examined specifically.

1286. With the Mila purchase of the Hitaveita Drangsnes network in Kaldrananeshreppur at the end of 2022, the situation in the municipality changed such that Mila now as 100% market share on market 3a in the municipality, and for that reason, the municipality is categorised under Area B.

[314] Part of the fibre local loops that are registered as being owned by Vesturbyggð are jointly owned by Vesturbyggð and Míla. Mila has control of most local loops that are jointly owned by Mila and Vesturbyggð, as those local loops are directly connected to the Mila trunk line, and it is not possible to connect them in another manner under current circumstances.

5.5.3.3 Area C - Tengir with high market share

1287. In area C, 6 municipalities are categorised together where the Tengir market share on market 3a was greater than 70% at the end of 2022 and the company's fibre deployment is wide-reaching in these municipalities, and in addition to this the deployment of other parties is limited and has not been growing. Furthermore, there is one telecommunications company with over 50% market share in the retail market in these municipalities. Tengir market share ranged from 73% to 96% at the end of 2022 and has been on the increase in recent times. Tengir fibre deployment in these municipalities ranges from 81% to 97%, while the fibre deployment of parties other than Tengir is a maximum of 15%. The municipalities that fulfil these conditions are:

- Eyjafjarðarsveit
- Dalvíkurbyggð
- Grýtubakkahreppur
- Hörgársveit
- Svalbarðsstrandarhreppur
- Þingeyjarsveit

1288. In these municipalities, both Tengir and Mila provided bitstream access to the Tengir local loops. They are also characterised by the fact that active copper local loops are on the wane and were on average 7% of local loops in these municipalities at the end of 2022. When one considers municipalities in Area C as a whole, Tengir has 92% market share.

5.5.3.4 Municipalities not categorised in Areas A, B or C

1289. Other municipalities that are not categorised by the above specified conditions or that ECOI wishes to examine individually because of potential changes in the municipality, are each defined as one geographic market. These 35 municipalities are:

- Akureyrarbær
- Árneshreppur
- Ásahreppur
- Bláskógabyggð
- Bolungarvíkurkaupstaður
- Dalabyggð
- Eyja- og Miklaholtshreppur
- Fjallabyggð
- Fljótsdalshreppur
- Flóahreppur
- Grindavíkurbær

- Grímsnes- og Grafningshreppur
- Hrunamannahreppur
- Hvalfjarðarsveit
- Ísafjarðarbær
- Kjósarhreppur
- Múlaþing
- Mýrdalshreppur
- Norðurþing
- Rangárþing eystra
- Rangárþing ytra
- Reykhólahreppur
- Reykjanesbær
- Seltjarnarnesbær
- Skaftárhreppur
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Suðurnesjabær
- Súðavíkurhreppur
- Sveitarfélagið Árborg
- Sveitarfélagið Vogar
- Sveitarfélagið Ölfus
- Tjörneshreppur
- Vestmannaeyjabær
- Vopnafjarðarhreppur

5.5.4 Conclusion of geographic definition of markets on market 3a

1290. Having the above in mind, the above specified 38 areas constitute separate geographic markets on market 3a, where competitive status will be assessed and where as appropriate, an undertaking, one or more, will be designated as having significant market power, or that the conclusion will be that active competition prevails there. That will be done in Section 6.

5.6 Geographic definition on market 3b

5.6.1 General

1291. In Section 5.1 here above, one can find detailed discussion on the regulatory framework and Guidelines for geographic analysis of markets, foreign precedent in this field and the conclusion of the last ECOI market analysis, no. 5/2021 on the relevant wholesale markets, ESA comments on the analysis and Ruling of the Appellate Committee for Electronic Communications and Postal Affairs in connection with the analysis. From the review of precedents from ECOI sister Authorities in Europe it is clear that the emphases of many of ECOI sister Authorities and of the EU Commission and ESA have recently tended towards more detailed geographic analysis than was previously practised, and towards geographic differentiation of markets.

1292. In discussion of the regulatory framework, the ESA Recommendation on the relevant service markets from 2016 and the ESA Guidelines on market analysis and evaluation of significant market power from November 2022, were taken into consideration, having taken account of national conditions as is prescribed in paragraph 2 of Article 43 of the Electronic Communications Act.

1293. There was discussion on the above specified revised ESA Guidelines on market analysis and assessment of significant market power on electronic communications markets, where it was among other things stated that one should take into account two main factors in geographic analysis on electronic communications markets, i.e. on the one hand, network coverage and on the other hand the existence of laws and regulations.

1294. Account was also taken of the ESA Recommendation on the relevant product and service markets on the electronic communications market from 11 May 2016. In this discussion, it was stated that when conducting geographic analysis, the geographic areas belonging to each geographic market shall be specified with reference to competitive conditions having been similar or sufficiently homogeneous that they could be differentiated from other areas where significantly different competitive conditions prevailed. Particular attention should be directed at whether the behaviour of an undertaking with significant market power is uniform in all geographic areas, or whether the company is faced with significantly differing competitive conditions in varying areas which constrain the company's behaviour.

1295. Then the Recommendation and EU Commission working document on the relevant product and service markets in the field of electronic communications from 18 December 2020 were examined. There one can find discussion to the effect that it was unlikely that competitive problems are the same at all locations in the jurisdiction of the state in question, both with respect to markets 3a and 3b. It is therefore important that the relevant markets be subjected to detailed geographic analysis. With such analysis, particular attention should then be paid to whether the potential SMP operator behaves in a similar manner between areas where he operates electronic communications networks, or whether he is faced with varying competitive pressure between areas.

1296. It was explained that in the working document it was stated that when conducting geographic analysis, NRAs should begin by choosing basic criteria for geographic units as a starting point for assessing competitive conditions. Such criteria can follow network topology or the boundaries of administrative units, as appropriate in each individual country. It is clear from this discussion that the difference in competitive conditions between varying areas in the same country can lead to it being unavoidable to define separate geographic markets. This separation can eventually lead to varying designations of undertakings with significant market power and to varying imposition of obligations. When conducting such analysis one must take four factors into account according to the working document: (a) Number of competing networks, (b) division of market share at retail and wholesale levels, (c) draft analysis of pricing and price difference by area and (d) behavioural pattern of consumers and parties to the market. For this reason, these factors are taken into account for market 3b, and a detailed description of deployment of parallel coverage networks can be found in Section 5.6.2.2, where reference is made to discussion on this issue in Section 5.5.2.2. Market share of the electronic communications companies is also taken into account in Section 5.6.2.5 and pricing by area in Section 5.6.2.6. Other factors are finally taking into account, such as nature of demand in Section 5.6.2.7.

1297. With respect to the choice of criteria for geographic basic units, pursuant to the Recommendation and working document, the starting point for geographic analysis should be to define geographic base units on which to conduct preliminary assessment of competitive conditions. The next step will be to group together those geographic units where competitive conditions are sufficiently homogeneous. Subsequent to geographic analysis, NRAs are obliged to conduct assessment of significant market power on each geographic market and to impose obligations on undertakings with significant market power on those geographic markets where active competition does not prevail.

1298. Then the BEREC Common Position and Reports on geographic analysis are examined. Particular attention was paid to the BEREC Report on competition between multiple operators of next generation access networks in the same geographic area, dated 8 June 2023, where there is discussion on the impact that parallel network coverage has on the relevant markets and on geographic analysis. The BEREC research showed that there was correlation to some extent between the proportion of parallel next generation access networks, and whether the geographic market was segmented and/or varying obligations imposed, though other factors were also significant with respect to the decision on geographic definition. One can conclude from the above that it can prove important to take into account network deployment when conducting geographic analysis of the relevant markets.

1299. In Section 5.2, one can then find arguments for the need for detailed geographic analysis of the wholesale markets in question in this instance. The conclusion was reached that in the light of the increased importance of geographic analysis of the relevant markets in Europe in recent years; of the increased deployment of fibre networks by Mila and the company's competitors in the Capital City Area and widely in the country; of the increased market share of Mila competitors on the relevant wholesale markets in recent years and the varying Siminn market share on the related retail market by area, it was appropriate to make a detailed geographic analysis of the markets in question. Account was also taken of the Mila plans to phase out its copper network in the coming years, which will mean that no electronic

communications company will be likely to have an electronic communications network with national coverage at the end of the planned lifetime of the analysis.

1300. In Section 5.3 one can find discussion and the ECOI conclusion with respect to the choice of geographic base units that form the starting point for geographic analysis. ECOI comes to the conclusion in this Section that municipalities are the most appropriate base units to form a starting point for the geographic analysis and on which to implement geographic analysis, given the circumstances in this country. In the opinion of ECOI, there is greater transparency and proportionality in applying municipality boundaries than postcodes in connection with this market analysis, and in addition to this it is more appropriate on the basis of prevalent competitive conditions on the relevant market.

1301. In Section 5.4 one can find detailed geographic analysis of a related retail market by municipality. In Article 8 of the Regulation on market analysis in the field of electronic communications, and in paragraph 7 of Article 44 of the Electronic communications Act, it states that the starting point for all analysis at wholesale level is to make an assessment of the competitive conditions on the relevant retail market/retail markets. ECOI so believes that without obligations at wholesale level there is a risk that consumers will suffer damage because of lack of competition at retail level. There was thus reason to assess competitive conditions on the relevant retail market by area for it to be possible to geographically define the market on the wholesale markets in question. The conclusion was that it was not possible to assert that active competition prevailed at retail level, at least not in all areas. Despite this, the competitive conditions at retail level in the relevant municipalities will be taken into account and used as grounds, as will competition conditions on the relevant wholesale markets, when delineating geographic market at the wholesale level, among other things, factors such as market share and the number of companies operating. The conditions on retail markets will also be taken into account, along with conditions on the relevant wholesale markets, when assessing competitive conditions (SMP assessment) within the geographic markets.

5.6.2 Geographic analysis on market 3b

5.6.2.1 General

1302. As stated in Section 4.3.7 here above, it was the ECOI conclusion that the wholesale market 3b for central access comprises virtual solutions offered centrally in fibre networks, copper networks to which VDSL equipment has been connected and mobile network solutions on 4G/4.5G on 5G (and future mobile network generations) with mains connected network routers at a fixed location of use, do not fulfil the conditions to be considered to belong to market 3a and they are used to provide central mass-produced bitstream service. ECOI considers that all connections to the networks in question that fulfil the above specified criteria belong to the relevant wholesale market and that there is no reason to segment sub-national markets by varying technical solutions.

1303. In Section 3.2.6 here above, ECOI assessed whether there was active competition on the retail markets in question in this country. The ECOI conclusion was that this was not the case, except perhaps in specific areas, despite the fact that wholesale obligations had rested on Mila on the relevant wholesale markets for many years. The status on the retail markets

in question would without doubt have been different, even in areas where more competition prevailed, if it had not been for the above specified wholesale obligations. For this reason, ECOI considered it important to continue analysing the situation on the relevant wholesale markets.

1304. The above indicated emphatically that if it were not for wholesale obligations, network operators in specific areas, where competition was inadequate on retail markets, could possibly have the economic strength to hinder active competition and to a significant degree operate without taking into consideration competitors, customers or consumers and maintain access barriers to infrastructure, systems and service, see Article 17 of the Regulation on market analysis in the field of electronic communications. ECOI therefore considered it necessary to conduct detailed geographic analysis of the retail and wholesale markets in question and to then conduct detailed analysis of competitive conditions on the relevant wholesale markets in those areas where it is considered that competition was not active at retail and/or wholesale level and as appropriate, designate an electronic communications undertaking, one or more, as having significant market power and impose appropriate obligations on that/those companies.

1305. As those wholesale markets being analysed in this instance, are related in the same value chain, there is an obligation to react to current or potential competition problems on the retail market in question, on that wholesale market that is lowest in the value chain, i.e. on market 3a. It may be that obligations on that market do not suffice on their own to resolve the competition problems on the retail market in question, and then measures must also be taken on these problems on the wholesale market that is higher in the value chain, i.e. market 3b. It is not until it is finally clear that obligations on the relevant wholesale markets do not suffice that the option is considered of reacting with obligations at retail level to the competition problems identified, see Article 61 of the Electronic Communications Act.

1306. It is furthermore stated in the above specified Section 3.2.6 that ECOI considers that there are still significant access barriers to the wholesale markets for local and central access in certain areas. Internet service will not be marketed at retail level unless service the provider in question has access to wholesale inputs on markets 3a and/or 3b. One could therefore only come to the conclusion that if there were no access obligations at wholesale level, there would be significant access barriers on the retail market in the areas in question, though these access barriers have doubtless diminished somewhat after Siminn sold Mila. Even if obligations were in place, one could identify access barriers to the retail market in question in specific areas.

1307. With the CA Decision no. 24/2023, dated 3 July 2023, CA came to the conclusion that there were only reasons at this stage to rescind a number of provisions of the 2015 Settlement between CA and Siminn, in addition to those that were rescinded according to the Settlement that CA had made with Míla and Ardian on the occasion of Siminn selling Mila, see CA Decision no. 16/2023, dated 22 May 2023. With respect to further rescinding of provisions in the Settlement in question, CA considered it important to gather further experience of the changes that had occurred on electronic communications markets with the Siminn sale of Mila and to resolve existing complaints and investigations that related to Siminn.

1308. CA also stated that one of the objectives of the Settlement from 2015 had been to ensure Mila independence from Siminn. Separation between the companies, had among other things been prescribed there to a significant degree. For that reason, the change that had occurred to market structure and to the relationship between Siminn and Mila, subsequent to the Siminn sale of Míla to Ardian had been less than otherwise would have been the case. For this reason, the material changes that the sale would have constituted was limited in this respect. It then states that despite the sale of Mila and that the direct ownership relationship between the two companies had been severed, a wide-reaching wholesale agreement was still in force between Siminn and Mila. In the opinion of CA, this agreement constituted strong common interests between the companies that could manifest themselves in various ways. It was therefore at a minimum, not timely to assert that the impact of the vertical integration no longer existed.

1309. It was the CA conclusion that the above did not provide reason to rescind all provisions of the Settlement that related to Siminn. It was actually important that they remained in force while experience was gained of the changes that had occurred to the structure of the market with the sale of Mila and there was also the matter that outstanding cases that related to alleged breaches by Siminn of the conditions had not been resolved. It had not been demonstrated that such significant changes had occurred to electronic communications markets in this country that would provide reasons to rescind important material conditions that bound Siminn pursuant the Settlement from 2015. When making this assessment, CA paid particular attention to:

- The Siminn position on important markets on which the company operated was still strong.

- The wholesale agreement between Siminn and Mila and other connections between the companies constitute continued strong common interests, which have at least in part the characteristics of vertical integration and that could have an impact on the markets on which Siminn operates.

1310. Here in the following text, emphasis will be placed on discussing possible differences in competitive conditions that may exist on this wholesale market by area. In Sections 5.6.2.2-5.6.2.7, a detailed assessment will be made of the status on the relevant wholesale market, with respect to the difference in competitive conditions by municipality or set of municipalities. The following aspects will be discussed:

- Deployment of electronic communications networks by municipality.

- Access barriers on the wholesale market by municipality.

- Number of electronic communications companies on the relevant wholesale markets in individual municipalities.

- Market share on the relevant wholesale market by municipality.

- Pricing on the relevant wholesale market by municipality.

- Other aspects, including marketing behaviour, marketing policy, service offer, quality, characteristics and functionality/usefulness of connections and nature of demand by area.

1311. In Section 5.6.2.8 one can find the ECOI conclusion on geographic analysis of competitive conditions by area on the relevant wholesale market. As stated in Section 5.3 here above, it is the ECOI conclusion that municipalities are the most appropriate base unit as a starting point for the geographic analysis on which to base geographic analysis, given the circumstances in this country. This applies both to the retail and wholesale levels in the opinion of ECOI.

5.6.2.2 Deployment of bitstream systems over copper networks, fibre networks and 4G, 4.5G and 5G mobile networks and prediction on its development

1312. In Section 5.5.2.2 here above, in discussion on market 3a, one can find detailed discussion on deployment of electronic communications networks by municipality in this country, including a table which shows deployment as of the end of 2022. Reference is made to the discussion mutatis mutandis.

5.6.2.3 Access barriers on market 3b by area

1313. Generally speaking, varying levels of competition between areas is a consequence of variance in the degree of entry barriers, as new competitors normally make their first entry into areas with fewer entry barriers and where economy of scale is greater. On electronic communications markets, barriers to entry are normally related to economy of scale and sunk costs. Such entry barriers can furthermore result from legal factors such as granting of licences. This means that it is an option to examine economy of scale and sunk cost by geographic area with the intention of drawing conclusions on varying competitive conditions. Economy of scale is more likely be realised, the greater the demand for the service in question. Aspects related to demand are, e.g., total turnover, population density and density of companies. Though such a study could provide indications, it is unlikely that these aspects on their own or jointly, could fully explain access barriers, as they are often explained by many interacting factors, which are often not clear.[315]

1314. In Section 5.5.2.3 here above in discussion on access barriers by area on market 3a, there is more detailed discussion on this issue, but by their nature such access barriers are greater on that wholesale market than on market 3b, and particularly on the retail market in question. Reference is made to that discussion.

5.6.2.4 The number of electronic communication companies on market 3b by municipality

1315. A simple and often more effective method, which can also reflect entry barriers by area, is the number of competitors of the potential SMP operator that provide or can provide service in the relevant area or areas. This applies both to retail and wholesale level. It is easier to show this than to conduct the assessment mentioned here above in Section 5.6.2.3 with

[315] See pages 25-26 in the above specified BEREC Common Position from 2014.

respect to entry barriers, and this method furthermore shows how entry barriers really work in practice.[316]

1316. The analysis that needs to be conducted to show the number of competitors that provide or can provide service in a specific area can vary according to the service market being examined in each instance. On market 3b, it is those players that operate their own active equipment, i.e. xDSL, P2P and/or GPON bitstream systems or comparable equipment on 4G/4.5G and 5G mobile networks that connect to the above specified mains connected routers. It is important to have in mind that competitive conditions can also vary by area as a result of the size of such competitors, no less than as a result of their number.

1317. It must be considered very unlikely that consumers and companies in this country will have access to more than two options of fixed line access networks (market 3a) and one can assume that in many areas in the countryside it is unlikely that there will be more than one. As the above specified mobile network solutions now belong to market 3b in the opinion of ECOI, consumers and companies have at many locations a choice of more than two options in service providers of bitstream service.

1318. The number of bitstream operators on fixed line networks varies in each municipality on market 3b in this country that have more than 5% market share in the relevant area, and they are in the range of 2-5, being 5 in Borgarbyggð, Grýtubakkahreppur, Rangárþing ytra og Rangárþing eystra. As the mobile network solutions in question belong in the opinion of ECOI to market 3b, the providers of bitstream access are more than on market 3a. For example, Hringdu has an agreement with Siminn on access to the Siminn mobile phone network at a national level.

1319. In other respects, reference is made to detailed discussion in Section 5.5.2.4 here above on the number of electronic communications companies on market 3a, and also to the Table in that Section that shows the number of electronic communications companies operating on both these wholesale markets, and on the relevant retail market, by municipality in the country.

5.6.2.5 Market share on market 3b by municipality

1320. In Section 5.5.2.5, there is discussion on market share on market 3a by municipality and at the beginning of the Section one can find quite detailed general discussion on market share and its significance with regards to market analysis. Reference is made to the discussion mutatis mutandis.

1321. ECOI has collected data on the wholesale market 3b, where the data has been broken down by municipality at 9 points in time, i.e. for mid-year 2018, end of year 2018, end of year 2019, mid-year 2020, end of year 2020, mid-year 2021 and end of year 2021, mid-year 2022 and end of year 2022.[317] Data has been gathered among other things on wholesale share on market 3b by municipality. Since the last analysis was published in October 2021, the number of municipalities decreased on the other hand, from 69 to 64 in the years 2021 and 2022.

[316] See page 26 in the above specified BEREC Common Position from 2014.
[317] In Annex C one can see the date for mid-2023.

1322. ECOI only has, on the other hand, information on the number of mains connected network routers in April 2023 and adds them to the end of year figures for fixed line networks at the end of 2022. For this reason, the Authority does not have such information for all these periods of time, and the share on market 3b is calculated on the basis of these mobile network connections being added to the final figures for bitstream at the end of 2022. ECOI will continue to regularly collect such information, along with figures for fixed line networks. The mobile network solutions in question have on the other hand no impact on the calculation of market share on market 3a, only on market 3b, on the basis of the conclusions of the definition of the relevant service markets in Section 4.

1323. Conclusions of this part of data collection are displayed graphically for market 3b in Tables 5.12 and 5.13 here below, that is to say for the periods mid-year 2021, end of year 2021, mid-year 2022 and end of year 2022. The reason why ECOI does not show all the data in the Tables in question is among other things that the accuracy of the data was somewhat lacking from some parties to the market in the first data collection. ECOI can however consult data on market development further back in time in individual municipalities, if there is reason to specifically discuss the development of the relevant market wholesale market shares and projections on future development within these municipalities, in geographic definition of the relevant wholesale market and or/assessment of significant market power in specific areas.

1324. As can be seen in Table 5.12, Mila had the highest market share at national level in market 3b at the end of 2022 with 52% market share. Ljósleiðarinn was not far behind with 45% market share, Tengir had 1.8%, Snerpa had 0.7% and Sýn had 0.6%. With the CA endorsement of the merger between Ljósleiðarinn and Sýn resulting from the Ljósleiðarinn purchase of Sýn electronic communications network on 29 September 2023, see CA Decision no. 37/2023, Sýn disappeared finally from this market and the small share that Sýn had transferred to Ljósleiðarinn. One can see in the Table that from mid-year 2021, Mila market share has decreased by 4%, while Ljósleiðarinn share has increased by the same proportion. This is somewhat less of a decrease for Mila than on market 3a, while at the same time, the Mila market share has decreased by 7% on that market.

Table 5.12 Market share of main parties on market 3b at national level at end of year 2022 and their development

Bitstream operator	30.6.2021	31.12.2021	30.6.2022	31.12.2022
Míla	56%	55%	53%	52%
Ljósleiðarinn	41%	43%	44%	45%
Tengir	1.5%	1.5%	1.8%	1.8%
Snerpa	0.6%	0.6%	0.7%	0.7%
Sýn	0.6%	0.6%	0.6%	0.6%

Table 5.13 Highest and second highest market share on market 3b by municipality[318]

Capital area

Municipality	30.6.2021			31.12.2021			30.6.2022		
Reykjavíkurborg	Ljósleiðarinn	61%	(39%)	Ljósleiðarinn	63%	(37%)	Ljósleiðarinn	64%	(36%)
Kópavogsbær	Ljósleiðarinn	53%	(47%)	Ljósleiðarinn	55%	(45%)	Ljósleiðarinn	56%	(44%)
Seltjarnarnesbær	Ljósleiðarinn	69%	(31%)	Ljósleiðarinn	71%	(29%)	Ljósleiðarinn	72%	(28%)
Garðabær	Míla	54%	(46%)	Míla	52%	(48%)	Míla	50%	(50%)
Hafnarfjarðarkaupstaður	Míla	51%	(49%)	Ljósleiðarinn	51%	(49%)	Ljósleiðarinn	53%	(47%)
Mosfellsbær	Míla	53%	(47%)	Míla	52%	(48%)	Míla	51%	(49%)
Kjósarhreppur	Míla	56%	(44%)	Míla	58%	(42%)	Míla	59%	(41%)

Capital area

Municipality	31.12.2022			31.12.2022 incl. mobile network		
Reykjavíkurborg	Ljósleiðarinn	66%	(34%; Míla)	Ljósleiðarinn	60%	(31%; Míla)
Kópavogsbær	Ljósleiðarinn	58%	(42%; Míla)	Ljósleiðarinn	54%	(39%; Míla)
Seltjarnarnesbær	Ljósleiðarinn	73%	(27%; Míla)	Ljósleiðarinn	70%	(26%; Míla)
Garðabær	Ljósleiðarinn	51%	(49%; Míla)	Ljósleiðarinn	47%	(46%; Míla)
Hafnarfjarðarkaupstaður	Ljósleiðarinn	54%	(46%; Míla)	Ljósleiðarinn	49%	(42%; Míla)
Mosfellsbær	Ljósleiðarinn	51%	(49%; Míla)	Ljósleiðarinn	47%	(46%; Míla)
Kjósarhreppur	Míla	59%	(41%; Sýn)	Míla	31%	(28%; Sýn)

Suðurnes

Municipality	30.6.2021			31.12.2021			30.6.2022		
Reykjanesbær	Míla	83%	(17%)	Míla	75%	(25%)	Míla	71%	(29%)
Grindavíkurbær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Sveitarfélagið Vogar	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Suðurnesjabær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)

Suðurnes

Municipality	31.12.2022			31.12.2022 incl. mobile network		
Reykjanesbær	Míla	69%	(31%; Ljósleiðarinn)	Míla	56%	(25%; Ljósleiðarinn)
Grindavíkurbær	Míla	97%	(3%; Ljósleiðarinn)	Míla	70%	(17%; Nova)
Sveitarfélagið Vogar	Míla	100%	(0%)	Míla	70%	(22%; Nova)
Suðurnesjabær	Míla	100%	(0%)	Míla	66%	(26%; Nova)

[318] The company that has the highest share in the relevant municipality is specified by name along with the market share of this company. Market share of the second largest party is shown in brackets if there is more than one fixed line network. In the figures for end of year 2022 the name of the party with the second largest market share is also shown. Market share figures for the end of 2022 are shown, both with and without connections to mobile network routers. There are two tables for each geographic area, one for the first three dates and one for end of 2022, with and without mobile networks. In appendix C one can see market share for mid-2023.

West

Municipality	30.6.2021			31.12.2021			30.6.2022		
Akraneskaupstaður	Ljósleiðarinn	57%	(43%)	Ljósleiðarinn	59%	(41%)	Ljósleiðarinn	61%	(39%)
Skorradalshreppur	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Hvalfjarðarsveit	Míla	72%	(28%)	Míla	73%	(27%)	Míla	74%	(26%)
Borgarbyggð	Míla	70%	(23%)	Míla	69%	(23%)	Míla	68%	(24%)
Grundarfjarðarbær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Eyja- og Miklaholtshreppur	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Snæfellsbær	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Sveitarfélagið Stykkishólmur	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Dalabyggð	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)

West

Municipality	31.12.2022			31.12.2022 incl. mobile network		
Akraneskaupstaður	Ljósleiðarinn	62%	(38%; Míla)	Ljósleiðarinn	57%	(36%; Míla)
Skorradalshreppur	Míla	100%	(0%)	Síminn	37%	(29%; Nova)
Hvalfjarðarsveit	Míla	76%	(24%; Sýn)	Míla	49%	(25%; Sýn)
Borgarbyggð	Míla	66%	(24%; Ljósleiðarinn)	Míla	40%	(20%; Sýn)
Grundarfjarðarbær	Míla	100%	(0%)	Míla	69%	(15%; Nova)
Eyja- og Miklaholtshreppur	Míla	100%	(0%)	Míla	93%	(5%; Síminn)
Snæfellsbær	Míla	100%	(0%)	Míla	76%	(11%; Nova)
Sveitarfélagið Stykkishólmur	Míla	100%	(0%)	Míla	82%	(11%; Nova)
Dalabyggð	Míla	100%	(0%)	Míla	76%	(11%; Síminn)

Westfjords

Municipality	30.6.2021			31.12.2021			30.6.2022		
Bolungarvíkurkaupstaður	Míla	78%	(22%)	Míla	72%	(28%)	Míla	64%	(36%)
Ísafjarðarbær	Míla	52%	(48%)	Míla	51%	(49%)	Snerpa	51%	(49%)
Reykhólahreppur	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Tálknafjarðarhreppur	Míla	95%	(5%)	Míla	93%	(7%)	Míla	92%	(8%)
Vesturbyggð	Míla	96%	(4%)	Míla	96%	(4%)	Míla	96%	(4%)
Súðavíkurhreppur	Míla	75%	(25%)	Míla	75%	(25%)	Míla	69%	(31%)
Árneshreppur		0%	(0%)		0%	(0%)		0%	(0%)
Kaldrananeshreppur	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Strandabyggð	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)

Westfjords

Municipality	31.12.2022			31.12.2022 incl. mobile network		
Bolungarvíkurkaupstaður	Míla	58%	(42%; Snerpa)	Míla	48%	(34%; Snerpa)
Ísafjarðarbær	Snerpa	53%	(47%; Míla)	Snerpa	45%	(41%; Míla)
Reykhólahreppur	Míla	100%	(0%)	Míla	73%	(11%; Síminn)
Tálknafjarðarhreppur	Míla	90%	(10%; Snerpa)	Míla	72%	(11%; Síminn)
Vesturbyggð	Míla	95%	(5%; Snerpa)	Míla	67%	(13%; Nova)
Súðavíkurhreppur	Míla	65%	(35%; Snerpa)	Míla	51%	(28%; Snerpa)
Árneshreppur	Míla	100%	(0%)	Síminn	50%	(20%; Sýn)
Kaldrananeshreppur	Míla	100%	(0%)	Míla	80%	(18%; Síminn)
Strandabyggð	Míla	100%	(0%)	Míla	81%	(8%; Síminn)

North-west

Municipality	30.6.2021			31.12.2021			30.6.2022		
Húnaþing vestra	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Sveitarfélagið Skagaströnd	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Skagabyggð	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)
Húnabyggð	Míla	98%	(2%)	Míla	97%	(3%)	Míla	98%	(3%)
Skagafjörður	Míla	100%	(0%)	Míla	100%	(0%)	Míla	100%	(0%)

North-west

Municipality	31.12.2022		31.12.2022 incl. mobile network	
Húnaþing vestra	Míla	100% (0%)	Míla	86% (6%; Nova)
Sveitarfélagið Skagaströnd	Míla	100% (0%)	Míla	91% (5%; Síminn)
Skagabyggð	Míla	100% (0%)	Míla	76% (11%; Síminn)
Húnabyggð	Míla	98% (2%; Sýn)	Míla	84% (9%; Nova)
Skagafjörður	Míla	100% (0%)	Míla	89% (7%; Síminn)

North-east

Municipality	30.6.2021		31.12.2021		30.6.2022	
Akureyrarbær	Míla	82% (18%)	Míla	82% (18%)	Míla	79% (21%)
Norðurþing	Míla	94% (6%)	Míla	94% (6%)	Míla	93% (7%)
Fjallabyggð	Míla	96% (4%)	Míla	96% (4%)	Míla	95% (5%)
Dalvíkurbyggð	Míla	88% (12%)	Míla	88% (12%)	Míla	86% (14%)
Eyjafjarðarsveit	Míla	86% (14%)	Míla	86% (14%)	Míla	82% (18%)
Hörgársveit	Míla	68% (33%)	Míla	67% (33%)	Míla	63% (37%)
Svalbarðsstrandarhreppur	Tengir	54% (46%)	Tengir	52% (48%)	Tengir	51% (49%)
Grýtubakkahreppur	Tengir	55% (45%)	Tengir	55% (45%)	Tengir	63% (37%)
Tjörneshreppur	Míla	62% (38%)	Míla	64% (36%)	Tengir	54% (46%)
Þingeyjarsveit	Míla	69% (31%)	Míla	69% (31%)	Míla	67% (33%)
Langanesbyggð	Míla	100% (0%)	Míla	100% (0%)	Míla	100% (0%)

North-east

Municipality	31.12.2022		31.12.2022 incl. mobile network	
Akureyrarbær	Míla	78% (22%; Tengir)	Míla	69% (20%; Tengir)
Norðurþing	Míla	93% (7%; Tengir)	Míla	84% (7%; Tengir)
Fjallabyggð	Míla	95% (5%; Tengir)	Míla	70% (14%; Sýn)
Dalvíkurbyggð	Míla	86% (14%; Tengir)	Míla	73% (12%; Tengir)
Eyjafjarðarsveit	Míla	83% (17%; Tengir)	Míla	72% (15%; Tengir)
Hörgársveit	Míla	62% (38%; Tengir)	Míla	57% (35%; Tengir)
Svalbarðsstrandarhreppur	Míla	51% (49%; Tengir)	Míla	38% (37%; Tengir)
Grýtubakkahreppur	Tengir	63% (38%; Míla)	Tengir	43% (26%; Míla)
Tjörneshreppur	Tengir	54% (46%; Míla)	Tengir	54% (46%; Míla)
Þingeyjarsveit	Míla	67% (33%; Tengir)	Míla	59% (29%; Tengir)
Langanesbyggð	Míla	100% (0%)	Míla	91% (4%; Nova)

East

Municipality	30.6.2021		31.12.2021		30.6.2022	
Fjarðabyggð	Míla	100% (0%)	Míla	100% (0%)	Míla	100% (0%)
Múlaþing	Míla	96% (3%)	Míla	95% (5%)	Míla	92% (8%)
Vopnafjarðarhreppur	Míla	100% (0%)	Míla	100% (0%)	Míla	98% (2%)
Fljótsdalshreppur	Tengir	90% (10%)	Tengir	90% (10%)	Tengir	91% (9%)

East

Municipality	31.12.2022		31.12.2022 incl. mobile network	
Fjarðabyggð	Míla	100% (0%)	Míla	78% (11%; Nova)
Múlaþing	Míla	90% (10%; Austurljós)	Míla	77% (9%; Austurljós)
Vopnafjarðarhreppur	Míla	96% (4%; Tengir)	Míla	83% (8%; Síminn)
Fljótsdalshreppur	Tengir	74% (14%; Austurljós)	Tengir	60% (12%; Austurljós)

South

Municipality	30.6.2021		31.12.2021		30.6.2022	
Vestmannaeyjabær	Míla	100% (0%)	Míla	100% (0%)	Míla	100% (0%)
Sveitarfélagið Árborg	Míla	76% (24%)	Míla	74% (26%)	Míla	73% (27%)
Sveitarfélagið Hornafjörður	Míla	95% (5%)	Míla	95% (5%)	Míla	95% (5%)
Mýrdalshreppur	Míla	68% (32%)	Míla	67% (33%)	Míla	68% (32%)
Skaftárhreppur	Míla	93% (7%)	Míla	94% (6%)	Míla	95% (5%)
Ásahreppur	Sýn	54% (46%)	Sýn	54% (46%)	Sýn	54% (46%)
Rangárþing eystra	Míla	74% (26%)	Míla	74% (26%)	Míla	73% (27%)
Rangárþing ytra	Míla	59% (30%)	Míla	57% (32%)	Míla	56% (33%)
Hrunamannahreppur	Míla	85% (15%)	Míla	88% (12%)	Míla	87% (13%)
Hveragerðisbær	Ljósleiðarinn	57% (43%)	Ljósleiðarinn	59% (41%)	Ljósleiðarinn	60% (40%)
Sveitarfélagið Ölfus	Ljósleiðarinn	65% (35%)	Ljósleiðarinn	68% (32%)	Ljósleiðarinn	69% (31%)
Grímsnes- og Grafningshreppur	Míla	100% (0%)	Míla	100% (0%)	Míla	100% (0%)
Skeiða- og Gnúpverjahreppur	Míla	58% (42%)	Míla	56% (44%)	Míla	57% (43%)
Bláskógabyggð	Míla	83% (17%)	Míla	83% (17%)	Míla	82% (18%)
Flóahreppur	Míla	67% (33%)	Míla	67% (33%)	Míla	69% (31%)

South

Municipality	31.12.2022		31.12.2022 incl. mobile network	
Vestmannaeyjabær	Míla	100% (0%)	Míla	74% (16%; Nova)
Sveitarfélagið Árborg	Míla	71% (29%; Ljósleiðarinn)	Míla	61% (25%; Ljósleiðarinn)
Sveitarfélagið Hornafjörður	Míla	95% (5%; Sýn)	Míla	73% (15%; Nova)
Mýrdalshreppur	Míla	68% (32%; Sýn)	Míla	44% (39%; Sýn)
Skaftárhreppur	Míla	95% (5%; Sýn)	Míla	62% (17%; Nova)
Ásahreppur	Míla	52% (48%; Sýn)	Sýn	50% (40%; Míla)
Rangárþing eystra	Míla	72% (28%; Ljósleiðarinn)	Míla	46% (19%; Nova)
Rangárþing ytra	Míla	55% (34%; Ljósleiðarinn)	Míla	34% (21%; Ljósleiðarinn)
Hrunamannahreppur	Míla	87% (13%; Sýn)	Míla	37% (28%; Nova)
Hveragerðisbær	Ljósleiðarinn	60% (40%; Míla)	Ljósleiðarinn	54% (36%; Míla)
Sveitarfélagið Ölfus	Ljósleiðarinn	71% (29%; Míla)	Ljósleiðarinn	53% (22%; Míla)
Grímsnes- og Grafningshreppur	Míla	100% (0,5%; Ljósleiðarinn)	Nova	43% (26%; Síminn)
Skeiða- og Gnúpverjahreppur	Míla	59% (41%; Sýn)	Míla	44% (38%; Sýn)
Bláskógabyggð	Míla	81% (19%; Sýn)	Nova	30% (28%; Sýn)
Flóahreppur	Míla	69% (31%; Sýn)	Míla	53% (32%; Sýn)

1325. When one takes into account the above specified Tables 5.12 and 5.13, one can see that Mila was still, unlike in market 3a, with more than 50% market share of market 3b at national level at the end of 2022, with 52%, while the company's market share was 56% in mid-2021. Ljósleiðarinn is not far behind at national level and has 45%, while having had 41% in mid-2021. What characterises this market in this country is the two-tower position, where the market share of parties other than Mila and Ljósleiðarinn is almost negligible. As one can see in Table 5.13, the situation on the market is on the other hand, is variable by municipality.

1326. Míla is however the largest party on this market in the majority of the country's 64 municipalities, i.e. in 46 municipalities, with market share ranging from 31% in Kjósarhreppur and up to 93% market share in Eyja- og Miklaholtshreppur.[319] Mila has more than 50% market share in 36 municipalities. On the other hand, Mila is not the largest party in any municipality

[319] Without mobile networks, Mila would have had the largest share in 51 municipalities which is 80% of the country's municipalities, with market share ranging from 51% in Svalbarðsstrandarhreppur to 100% share in 29 municipalities.

in this market in the Capital City Area, except in Kjósarhreppur. About 31% of inhabitants live in these 46 municipalities.

1327. Ljósleiðarinn had the highest share in nine municipalities, i.e. Reykjavík, Kópavogur, Hafnarfjörður, Garðabær, Mosfellsbær and in Seltjarnarnes in the Capital City Area, in Hveragerðisbær and in Sveitarfélagið Ölfus which belongs to South Iceland but is in the neighbourhood of the Capital City Area and then Akraneskaupstaður which is in West Iceland but is also in the neighbourhood of the Capital City Area. In these municipalities Ljósleiðarinn market share ranges from 47% (Garðabær and Mosfellsbær) to 70% (Seltjarnarnes). Ljósleiðarinn had more than 50% market share in these 6 municipalities. Approximately 68% of the country's inhabitants live in these 9 municipalities.

1328. Tengir had the highest market share in three municipalities, i.e. in Grýtubakkahreppur, Tjörneshreppur and in Fljótsdalshreppur, but the company ceased operation Fljótsdalshreppur in 2023. In these municipalities Tengir market share ranges from 43% (Grýtubakkahreppur) to 60% (Fljótsdalshreppur). Approximately 0.1% of the country's inhabitants live in these municipalities.

1329. Snerpa had the highest share in one municipality, i.e. in Ísafjarðarbær in the West Fjords. The Snerpa share was 45% against a 41% Mila share. Approximately 1% of the country's inhabitants live in this municipality.

1330. Siminn had the highest market share in 2 municipalities, i.e. in Skorradalshreppur (37%) and in Árneshreppur (50%). Nova also had the highest market share in 2 municipalities, i.e., in Bláskógabyggð (30%) and in Grímsnes- og Grafningshreppur (43%). Finally, Sýn had the highest share in one municipality, i.e. in Ásahreppur (50%). These are all municipalities where the mobile network solution has a major impact on the conclusion, variously summer house areas or very sparsely populated areas without built-up areas.

1331. As stated above, ECOI considers that the above specified mobile network solutions belong to the relevant wholesale market. This significantly changes the conclusion, but to a varying degree however, between areas. The solution has for example generally a greater impact outside the Capital City Area than within it and has a very significant impact, for example, in municipalities there are characterised by large summerhouse areas. The solution also has a significant impact in many municipalities in the countryside where fibre roll-out is at an early stage. The solution also has a significantly greater impact in reducing Mila market share than for example that of Ljósleiðarinn.

1332. In July 2020, Siminn and Ljósleiðarinn made an agreement on Siminn bitstream access to the Ljósleiðarinn fibre network. On 25 August 2021, Siminn begun to provide its service through the Ljósleiðarinn network. The agreement allows for at least [...]% of Siminn customers being on the Ljósleiðarinn network, no later than [...]. On the basis of information from Ljósleiðarinn dated 10 August 2023, Siminn customers on the Ljósleiðarinn network were [...] in mid-year 2023 while they numbered [...] at end of year 2022. If we allow for Siminn customers having then been a similar number as at the end of 2022, there were thus approximately [...]% of Siminn fixed network customers on the Ljósleiðarinn fibre network in mid-year 2023 and [...]% of Siminn customers that were on fibre. On the basis of the Ljósleiðarinn answers, [...].

1333. In the Tengir operational territory, the situation is not entirely comparable to the position of Ljósleiðarinn in the Capital City Area. For some considerable time now, Tengir has given Mila access to its fibre network on market 3a (dark fibre), where Mila has constructed its active bitstream service. Mila market share in the Tengir operational territory is generally higher than Tengir market share on market 3b, even when one only looks at Tengir fibre local loops.

1334. As one can see in the above specified Table 5.12, Mila market share has fallen fairly rapidly since mid-2021. ECOI considers that this can be to a large extent attributed to the above specified agreement between Siminn and Ljósleiðarinn. It is clear that a certain number of consumers have been migrating from Mila copper network to the fibre network and Mila has not had a fibre network across the whole of the Capital City Area as Ljósleiðarinn has, though the coverage of the Mila fibre network has expanded rapidly. Another reason is the Nova success, which has up to this point in time only been on the Ljósleiðarinn fixed line network on the wholesale markets 3a/b in question, while Sýn market share has declined, and Sýn is both on the fixed line networks of Mila and on Ljósleiðarinn fibre, though much more on the Ljósleiðarinn network. Moreover, mobile network solution partly explains that.

1335. In the opinion of ECOI, it is not inconceivable that this development will slow down significantly or even be reversed to some extent, or even to a considerable extent, during the lifetime of the analysis, including in the Capital City Area. This is caused by a number of factors:

- It is not inconceivable that Mila can make its mark in a more vigorous manner in competition in those areas where it becomes free of obligations.

- It is, for example, the declared policy of the new Mila owners to significantly increase investment in fibre networks and company representatives have for example said that it would be doubled in the year 2023, compared with 2022, and in addition to this the deployment plans for the coming years are ambitious and of a far greater scope than the deployment plans of competitors.

- It is also the declared policy of the company to increase usage of the company's electronic communications systems and to increase the presence of customers other than Siminn on the company's networks. [...].

- Continued purchasing by Mila of local fibre networks.

- ECOI considers that the Siminn agreement with Ljósleiðarinn will not lead to as quick a migration of customers from Mila networks to Ljósleiðarinn as took place during the previous 2-3 years, and the Mila fibre network in the Capital City Area was much less extensive than Ljósleiðarinn fibre network in that location, although Mila has been expanding it rapidly recently and will continue to do so in the coming years. For this reason, in the opinion of ECOI, there will be an insignificant difference in scope of fibre networks of the companies in the Capital City Area towards the end of the lifetime of this analysis, with the possible exception of Seltjarnarnes.

- Mila is also expanding its fibre network in part of the Tengir operational territory and will continue to do so in coming years. One can therefore expect the Mila share to increase on the relevant market in that area during the lifetime of the analysis.

1336. Given the methodology used by ECOI in delineating geographic markets on market 3b, see Section 5.6.3 here below, ECOI considers there to be no need at this stage to make predictions on potential or likely development of market share on the relevant market in each municipality. Instead of this, ECOI will endeavour to predict on this issue in its assessment of significant market power in each geographic market in Section 6.3 here below, and efforts will also be made in that Section to predict potential or likely development of fibre networks in each geographic market.

5.6.2.6 Pricing on market 3b by area

1337. With respect to discussion on pricing on market 3b by area, one can largely refer to the discussion in Section 5.5.2.6 here above, where there was discussion on pricing on market 3a by area, and there one can furthermore find significant discussion on pricing on market 3b and interaction of pricing on these markets. Reference is made to that discussion, as it is unnecessary to repeat the same text here.

1338. With respect to discussion on other issues on market 3b by area, one can mostly refer to discussion in Section 5.5.2.7 here above, where there is discussion on these issues on market 3a by area. Reference is made to that discussion, as it is unnecessary to repeat the same text here.

5.6.2.7 Other aspects, including marketing behaviour, marketing policy, service offer, quality, characteristics and functionality/usefulness of connections and nature of demand by area

1339. With respect to general issues on other criteria that NRAs can take into account for the purpose of discovering potential difference in competitive circumstances between areas, one can refer to discussion on this in Section 5.5.2.7 here above.

1340. In Section 5.4.2.8 here above there was discussion as to whether various issues other than price, indicated that competitive conditions on retail market, indicated that the geographic market in question should be segmented, but as previously stated, the main task of this analysis is not the relevant retail market, but rather the relevant wholesale markets. There the conclusion was that ECOI did not consider that issues such as market behaviour, market policy, service offer, quality, attributes, characteristics and functionality/usability of connections of electronic communications companies on the relevant retail market, nor the nature of demand, were so different between areas in this country that they provided an indication that the retail market in question should be segmented geographically. In this Section there will be discussion on these issues with respect to wholesale level.

1341. Regarding service offer of electronic communications companies on market 3b, it is the same, or almost the same in all areas where the relevant access technology is in fact being offered.

1342. Mila stated in its comments on the market analysis that was completed with the ECOI Decision no. 5/2021 that there was a difference in service offered by area, as Mila offered 1 Gb/s speed in the competitive areas, but only 500 Mb/s outside them. It is no longer the case that the company only offers 1 Gb/s speed in those areas that Mila defined as competitive areas, but the company has been upgrading all its fibre connections to 1 Gb/s. One can however note that on 22 August 2023, Mila, announced its plans to adopt an XGS-PON solution which could technically offer up to 10 Gb/s symmetric performance and to open service on 1 October 2023 in the Capital City Area, but such that 10 Gb/s would only on offer in the Múli telephone exchange area, and 2.5 Gb/s elsewhere in the area. The whole Capital City Area would then be upgraded to 10 Gb/s performance by 1 April 2024. Ljósleiðarinn then published a news item on 13 September 2023 saying that the company planned to offer an upgrade to 10 Gb/s service across its whole operational territory from and including 1 October 2023.

1343. With respect to quality, attributes, characteristics and functionality/usability of connections, there is detailed discussion on these issues in Section 3. There it was among other things stated that differentiation in characteristics of Internet access, such as performance and service quality, was small, if any, except possibly in the case of older generations of the mobile networks in question. The quality of the relevant access technology, its attributes, characteristics and functionality/usability, is therefore comparable between areas. Other internal quality aspects in the operations of retailers, such as their core systems, capacity of their foreign connections and other aspects that can impact on consumer perception of the quality of service do not have a direct impact on access networks at each location.

1344. ECOI also refers to the ECOI user surveys from 2020 and 2022, where most respondents that had access through VDSL considered that their connections adequately met the needs of the household. Then one can mention that many other factors have an impact on consumer experience with respect to performance of network connections, not least capacity of wireless network connections within homes, which is dependent on very many variables, such as other wireless networks in the vicinity and the nature and thickness of partition walls in the premises.

1345. Marketing policy of parties that operate on market 3b must be considered to be homogeneous for the whole country. It cannot be seen that market operations of the wholesale companies on the relevant market with regards to selling to retailers, vary by geographic area when one considers characteristics of the product, promotional work or how purchasers approach the product.

1346. When one considers demand from access seekers, one cannot conclude that it differs to some extent by geographic area, as an access seeker is fulfilling the needs of end-users, which are, as stated in Section 5.4.2.8 here above, the same across the country.

1347. With the above in mind, ECOI does not consider that issues such as market behaviour, market policy, service offer, quality, characteristics, attributes and functionality, usability of connections of electronic communications companies on the wholesale market in question, nor the nature of demand, differ so greatly between areas in this country that it provides an

indication, on its own, that the wholesale market in question should be segmented geographically. Therefore, one must examine more factors.

5.6.2.8 Summary of geographic analysis of market 3b

1348. In Section 4.3.7 the ECOI conclusion was that the wholesale market 3b for central access comprises virtual solutions offered centrally in fibre networks, copper networks to which VDSL equipment has been connected and mobile network solutions on 4G/4.5G on 5G (and future mobile network generations) through mains connected network routers at a fixed location of use, do not fulfil the conditions to be considered to belong to market 3a and they are used to provide central mass-produced bitstream service. ECOI considers that all connections to the networks in question that fulfil the above specified criteria belong to the relevant wholesale market and that there is no reason to segment sub-national markets by varying technical solutions.

1349. In this Section one can find the ECOI conclusion on geographic analysis of competitive conditions by area on the relevant wholesale market. As stated in Section 5.3 here above, it is the ECOI conclusion that municipalities are the most appropriate base unit as a starting point for the geographic analysis on which to base geographic analysis, given the circumstances in this country. This applies both to the retail and wholesale levels in the opinion of ECOI. The next step is therefore to group together those geographic units where competitive conditions were sufficiently homogeneous.

1350. In delineating geographic units, ECOI is obliged to examine a number of factors. There has been previously discussion to the fact that deployment of electronic communications networks is one of such factors, and in Section 5.5.2.2, one can find a detailed description of the deployment of copper networks, fibre networks and 4G, 4.5G and 5G mobile networks by municipality and a prediction of development of deployment.

1351. In Section 5.5.2.3, there was discussion on the access barriers in place on market 3a by area, where varying levels of competition between areas is generally the result of varying access barriers. It is also stated in that Section that by the nature of things, access barriers are greater on those wholesale markets than on market 3b, and particularly on the relevant retail market. Reference is made to that discussion.

1352. In Section 5.6.2.4 there was discussion on the number of electronic communications on market 3b, by municipality. In that Section the conclusion was reached that it was very unlikely that consumers and companies in this country will have access to more than two options for access-to-access networks (market 3a) provided at a fixed location and that one can assume that in many areas in the countryside it is unlikely that there will be more than one. As the above specified mobile network solutions now belong to market 3b in the opinion of ECOI, consumers and companies have at many locations a choice of more than two options in service providers of bitstream service, as providers of bitstream access are more numerous than on market 3a. For example, Hringdu has an agreement with Siminn on access to the Siminn mobile phone network at a national level.

1353. In Section 5.6.2.5, reference was made to discussion on market share by area in Section 5.5.2.5. There was discussion among other things on Mila market share having decreased

rather rapidly from mid-year 2021. It is clear that a certain number of consumers have been migrating from Mila copper network to the fibre network and Mila has not had a fibre network across the whole of the Capital City Area as Ljósleiðarinn has, though the coverage of the Mila fibre network has expanded rapidly. Another reason is the Nova success, which has up to this point in time only been on the Ljósleiðarinn fixed line network on the wholesale markets 3a/b in question, while Sýn market share has declined, and Sýn is both on the fixed line networks of Mila and on Ljósleiðarinn fibre, though much more on the Ljósleiðarinn network. In the opinion of ECOI, it is not inconceivable that this development will slow down significantly or even be reversed to some extent, or even to a considerable extent, during the lifetime of the analysis, including in the Capital City Area.

1354. Another important criterion when identifying whether competitive conditions may be variable between areas is the possible price difference between them at both retail level and wholesale level. In discussion on price difference between areas, reference was made to discussion in Section 5.5.2.6. The conclusion of this Section was that pricing by Mila and of competitors of the company on the relevant market and on the related bitstream market (market 3b) on its own is not a sufficiently decisive factor to justify segmented geographic markets in this country. Though there is some difference in Mila wholesale prices by geographic area, consumers do not perceive such a difference at retail level, regardless of the service provider they use. On the decision as to whether it is appropriate to segment geographic markets on the relevant wholesale markets in this country, one must take more factors into account, as is done in Section 5 as a whole.

1355. Finally, there was discussion in Section 5.6.2.7 on other issues, such as market behaviour, the service offer, quality, characteristics of the product, functionality of the connection and nature of demand in the area when identifying potential difference in competitive conditions between areas. The conclusion there was that ECOI considers that issues such as market analysis, marketing policy, service offer, quality, attributes, characteristics and functionality/usability of connections of electronic communications companies on the relevant wholesale market, nor the nature of demand, differed to such an extent between areas in this country that they provided an indication, on their own, that the relevant wholesale market should be segmented geographically. Therefore, one must examine more factors.

1356. Having taken all the above into account, and particularly with respect to the significant difference in deployment of fibre networks and of the existence of parallel coverage by fixed line networks, and the substantial difference in market share between municipalities, which are reflected in varying competitive conditions between areas, ECOI considers there to be strong arguments for segmenting geographic markets on the wholesale market in question in this country. With this assessment, ECOI takes a forward-looking approach and makes predictions on, among other things, potential or likely fibre deployment in the varying areas during the lifetime of the analysis. Discussion and arguments for criteria for grouping municipalities into geographic markets and the conclusions of the categorisation can be found in Section 5.6.3 and then in Section 5.6.4 one can find a summary of the conclusion. When assessing significant market power on all geographic markets in Section 6.3, efforts will among other things be made to predict potential or likely development of market share in the relevant wholesale market on the geographic markets in question.

5.6.3 Criteria for grouping of municipalities into geographic markets and conclusion of the categorisation

1357. Here below one can find the ECOI conclusion regarding delineation of geographic markets on market 3b. As will be shown, the geographic markets will total 43. In Section 6, ECOI will then assess the competitive status on all these geographic markets, also in areas A and B and as appropriate, designate undertakings, one or more, as having significant market power on the specific geographic markets.

1358. ECOI also takes into account development of fibre deployment by network operators, and whether parallel fibre network coverage exists. This particularly applies to when one looks to the future, as it is clear that fibre local loops will finally replace copper local loops where this is possible, otherwise they will be replaced by powerful mobile networks. In the opinion of ECOI, there is a difference between municipalities as to whether the likely development will lead to parallel fibre network coverage and ECOI expects that this will only take place in urban areas. When assessing significant market power on all geographic markets in Section 6.3, efforts will be made among other things to predict potential or likely development of market share in the relevant wholesale market on the geographic markets in question.

5.6.3.1 Area A - Probable competition

1359. ECOI makes the following conditions that must be fulfilled for a municipality to be included in this area:

- Parallel coverage by **2** fixed line networks[320] is greater than **90%**, **and**
- No party has more than **70%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**
- At least **4** electronic communications companies are operating on the retail market.

or

- Parallel coverage of **2** fixed line networks[321] ranges from **75%** two and including **90%**, **and**
- No party has more than **65%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**
- At least **4** electronic communications companies are operating on the retail market.

or

- Parallel coverage of **2** fixed line networks[322] ranges from **60%** two and including **75%**, **and**
- No party has more than **60%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**

[320] At least one of the networks shall be an open access network.
[321] At least one of the networks shall be an open access network.
[322] At least one of the networks shall be an open access network.

- At least **3** electronic communications companies are operating on the retail market.

  or

- Parallel coverage of **2** fixed line networks[323] ranges from **50%** two and including **60%**, **and**
- No party has more than **55%** market share on the wholesale market, **and**
- No party has more than **50%** market share on the retail market, **and**
- At least **3** electronic communications companies are operating on the retail market.

1360. One can expect that when parallel coverage of open networks is in place, a basis will be created for active competition taking place. As parallel coverage increases, more consumers have a real choice of electronic communications company with which they choose to do business. Electronic communications companies then have a choice of network operator and are not dependent on one party for bitstream access to provide their retail service. In these conditions, one is weighing parallel network coverage against market share on the wholesale market, such that the smaller the deployment the stricter the conditions for market share on the wholesale market, i.e. the higher that market share have to be. When choosing these criteria account is being taken of the conclusion and guidelines expressed by the EU Commission. Then retail shares and number of retail companies are taken into account to confirm that this significant deployment has in reality, led to active competition.

1361. Despite ECOI considering that bitstream service used to provide Internet service over mains connected mobile network routers belong to this market, bitstream service provided today is limited to pure resale. Mobile network companies have not provided bitstream access to their systems that is equivalent to the access provided over fibre or copper local loops, and for this reason ECOI considers it not appropriate to take into account deployment of mobile networks in these conditions. It is on the other hand possible to take into account deployment of mobile networks when each municipality is examined in more detail when assessing significant market power in the market in Section 6.

1362. The municipalities that fulfil the above specified conditions are 10:

- Akraneskaupstaður
- Borgarbyggð
- Garðabær
- Hafnarfjarðarkaupstaður
- Hveragerðisbær
- Ísafjarðarbær
- Kópavogsbær
- Mosfellsbær
- Reykjanesbær

[323] At least one of the networks shall be an open access network.

- The City of Reykjavík

1363. Sveitarfélagið Ölfus is also falls under this condition, but ECOI has decided to examine this separately, because of the strong position of Ljósleiðarinn in fixed line connections in the municipality.

5.6.3.2 Area B - Mila with high market share

1364. In area B, municipalities are grouped together where the deployment of parallel fixed line networks is small, i.e. below 40%, where Mila market share on both markets 3a and 3b is higher than 70% and where there is one electronic communications company with over 50% market share on the retail market. The 13 municipalities that fulfil these conditions are:

- Fjarðabyggð
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Tálknafjarðarhreppur

1365. Múlaþing also falls under these conditions, but ECOI plans to examine the municipality specifically in the light of deployment of another network operator.

1366. In these municipalities, Mila market share is very strong when one only considers fixed line networks; In 12 of the above specified municipalities, Mila has 100% market share in bitstream over copper or fibre local loops.

5.6.3.3 Municipalities not categorised in Areas A or B

1367. Other municipalities that are not categorised by the above specified conditions or that ECOI wishes to examine specifically because potential changes in the municipality are defined as one geographic market. These 41 municipalities are:

- Akureyrarbær
- Árneshreppur

- Ásahreppur
- Bláskógabyggð
- Bolungarvíkurkaupstaður
- Dalabyggð
- Dalvíkurbyggð
- Eyja- og Miklaholtshreppur
- Eyjafjarðarsveit
- Fjallabyggð
- Fljótsdalshreppur
- Flóahreppur
- Grindavíkurbær
- Grímsnes- og Grafningshreppur
- Grundarfjarðarbær
- Grýtubakkahreppur
- Hrunamannahreppur
- Hvalfjarðarsveit
- Hörgársveit
- Kjósarhreppur
- Múlaþing
- Mýrdalshreppur
- Norðurþing
- Rangárþing eystra
- Rangárþing ytra
- Reykhólahreppur
- Seltjarnarnesbær
- Skaftárhreppur
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Suðurnesjabær
- Súðavíkurhreppur
- Svalbarðsstrandarhreppur
- Sveitarfélagið Árborg
- Sveitarfélagið Vogar

- Sveitarfélagið Ölfus
- Tjörneshreppur
- Vestmannaeyjabær
- Vesturbyggð
- Vopnafjarðarhreppur
- Þingeyjarsveit

5.6.4 Conclusion of geographic definition of markets on market 3b

1368. Having taken the above into account, the geographic market on market 3b is composed of the above specified 43 areas, where the competitive status will be assessed and were as appropriate electronic communications undertakings, one or more, will be designated as having significant market power or the conclusion will be that effective competition prevails there. That will be done in Section 6.

6 Assessment of significant market power on markets 3a and 3b

6.1 General

6.1.1 Introduction

1369. When the relevant service market and geographic market have been defined, the next step is to analyse competition with regard to those factors that influence market power, and to find out whether the power of one or more undertakings is significant such that the undertaking or undertakings be designated as having significant market power and that appropriate obligations are imposed on it or them in order to endeavour to solve identified competition problems on the market in question. The factors that are used to measure market power depend on the characteristics of each market and it is in the hands of the relevant NRAs to evaluate which factors shall be examined in each instance. In the ESA Guidelines on market analysis and assessment of significant market power from 16 November 2022[324] there is a list of the criteria that can be used when assessing significant market power and the criteria that ECOI considers important for this market analysis will be discussed here below. The list published in the Guidelines is not exhaustive and ECOI is authorised to add other criteria to the list that could apply.

1370. In paragraph 6 of Article 44 of the Electronic Communications Act no. 70/2022 (hereafter Electronic Communications Act) it states that if ECOI considers on the basis of market analysis that the imposition of obligations is justifiable, the Authority shall identify undertakings that each or jointly, have significant market power, see Article 45, and shall impose, maintain or amend appropriate obligations pursuant to Article 46, if the Authority considers that without obligations, the result for end users would not result in active competition.

1371. It is also stated in Article 14 of the Regulation on market analysis in the field of electronic communications no. 556/2023, that ECOI is obliged to analyse markets according to Article 44 of the Electronic Communications Act, having in mind those factors that have an impact on market power, in order to determine whether the strength of one or more undertakings is significant.

1372. Significant market power is specified in Article 45 of the Electronic Communications Act, where it states that an undertaking shall be deemed to have significant market power if, either individually or jointly with others, it holds a position of economic strength on a certain market which enables it to prevent active competition and to operate to a substantial extent without concern for competitors, customers, and consumers. An undertaking can also be considered to have significant market power if on its own, or with others has significant market power on a related market where the relationships between the markets are such that an undertaking can exercise its market power on other markets in order to increase market share.

[324] See paragraph 58 in the Guidelines.

1373. There is further discussion on assessment of significant market power in Article 18 of the Regulation on market analysis in the field of electronic communications. It is stated in the Article that a decision on significant market power of one party shall be based on a number of interactive factors that ECOI has deemed appropriate in accordance with the special characteristics of the relevant market. When assessing market power, it is important to take into account the market share of the electronic communications undertaking that potentially has significant market power on the relevant market, and of the competitors of that company.

1374. Market share gives the first indication on market structure of the relevant market and on the proportional importance of the various electronic communications companies operating on the relevant market. It is possible to measure market share on the basis of turnover, quantity, connected lines or number of subscribers, where it is possible to use more than one criterion as grounds in each instance. The method chosen can vary, depending on the factors that have the greatest significance on the relevant market. In this analysis, market share of the electronic communications companies was measured on the basis of number of subscribers, as in the opinion of ECOI, this is the most important criterion of success on those markets here under discussion.

1375. When measuring market power, one must also take into account that under certain circumstances, an electronic communications company with high market share may not operate to a significant degree, independent of customers that have a strong market position, for example in new markets where significant experience has not been gained, see paragraph 5 in Article 18 of the Regulation on market analysis in the field of electronic communications. One must therefore take into account more criteria than simply market share of companies on the relevant markets when making such an assessment. In Article 19 of the Regulation on market analysis in the field of electronic communications, criteria are for example listed, though not an exhaustive list, that can be important when assessing a company's power to be able to behave to a significant degree without regard for competitors, customers and consumers. In ECOI assessment of companies' market power on the relevant markets, all of these criteria are open for examination in various degrees of detail, as can be seen in the following discussion.

1376. Here below, the competitive conditions on the relevant market will be assessed with the main influencing factors in mind. Following this, in Sections 6.2 and 6.3, there will be an assessment of whether some undertakings have significant market power on the relevant geographic market. In this regard, market share, financial strength of market players, entry barriers and competition on the relevant market are among the aspects that are taken into account. Elements such as sales and service systems, whether the electronic communications company in question can offer the same customers varied service because of access to a broad product offer, electronic communications networks etc., are also important.

6.1.2 Market share

1377. According to paragraph 2 of Article 18 of Regulation no. 556/2023 on market analysis in the field of electronic communications, it is stated that it is important when assessing market power of an electronic communications company to take into account the market share of the undertaking that may have significant market power on the relevant market, and the competitors of this company, and furthermore to take into account the competitive pressure

that potential competitors can provide in the mid-term. As has previously been stated, it is not the task of this market analysis to designate an undertaking as having significant market power on the relevant retail market, or on specific geographic parts of the retail market. On the other hand, market share on the retail market is informative and important in the geographic delineation of the relevant wholesale markets and is one of the factors used widely to support this delineation. Market share on the retail market, and other elements that provide a picture of competitive conditions on the relevant retail market or on specific geographic parts of market at retail level, can be of importance in assessing significant market power on the relevant wholesale market or on individual geographic parts of that market.

1378. In Section 5.4.2.5 there was discussion on market share on related retail markets by municipality. In Sections 5.5.2.5 and 5.6.2.5, there was then discussion on market share on the relevant wholesale markets 3a and 3b by municipality. Reference is made to that discussion. One must keep in mind that at this stage in the case, these were not "real" market shares, as the final delineation of the geographic market in the relevant wholesale market was not yet concluded. As was stated in Sections 5.5.3 and 5.6.3 here above, ECOI considers there to be reason to segment the geographic market of the relevant wholesale market in this country into 38 markets on market 3a and into 43 markets on market 3b. In those instances where the relevant geographic market is composed of more than one municipality, market share of the companies must be calculated within this set of municipalities that form the relevant geographic market, having regard to assessment of significant market power on the relevant wholesale market.

1379. The main task of this market analysis is to assess market power on the relevant wholesale markets 3a and 3b, and as appropriate to impose obligations on an undertaking, one or more, that has/have been designated as having significant market power in those geographic areas where active competition may not be in place from a forward-looking point of view.

1380. According to paragraph 3 of Article 18 of the Regulation, market share gives the first indication on market structure and on the proportional importance of the various electronic communications companies operating on the relevant market. One should interpret market share with the relevant market circumstances in mind, particularly taking account of the activity or dynamics of the competition in place on the relevant market and the extent to which products or service are differentiated.

1381. In paragraph 4 of the same Article, it states that significantly high market share of one undertaking over a significant period of time, or greater than 50%, is considered to be a strong indication of significant market power, except in exceptional circumstances. Market share could on the other hand only act as an indication of the above if competitors cannot increase their offer sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5, it is important to keep in mind that under certain circumstances, an undertaking with a high market share cannot operate to a significant degree without concern for customers with a strong bargaining position, for example if the countervailing buying power is substantial.

1382. It states in paragraph 6 that one should also take into account that an undertaking may have significant market power despite having a lower share than 50% of the relevant market. It matters for example whether the relevant company is generally powerful with respect to capital, technology, infrastructure and offer of goods or service. The conclusion on significant market power is based on overall assessment where both market share and factors related to market structure are meaningful. It is not likely that significant market power exists if market share is less than 40% on the relevant market. There can however be exceptional instances where competitors are not in a position to react to behaviour of an electronic communications undertaking that is below this limit such that an electronic communications undertaking can be considered to have significant market power although it has less than 40% market share.

1383. In paragraph 7 it states that if market share is high, but under 50%, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be conducted before an opinion is reached on the existence of significant market power. ECOI considers this also to apply if market share is over 50%, particularly in duopolies or oligopolies, as the 50% boundary does not automatically lead to a case of significant market power. It is for example clear that in duopolies, one of the companies could have a little over 50% and the other a little under 50%. It is quite another matter than where one company has around 50% and, for example, many other companies have low market shares. This means that market share is only one of many criteria to take into account when assessing market power.[325]

1384. One method of including the size and strength of competitors by area when conducting geographic analysis, is, as stated above, to examine the market share of market players in specific areas, in this instance by those geographic markets that have been delineated in markets 3a and 3b in Section 5 here above. It would be ideal if not only market share at a given point of time was shown, but also its development over time in order to make it possible to identify potential trends in this connection. In this context, two points in time are often enough. Should indications emerge of significant changes in market share through points in time in certain areas and not in others, then this could be indicative of varying competitive conditions by area.

6.1.3 The main long-term access agreements related to markets 3a and 3b in this country

6.1.3.1 General

1385. As previously stated, when assessing market power, it is important to take into account the market share of the electronic communications undertaking that potentially has significant market power on the relevant market, and of the competitors of that undertaking. This is the first indicator on market structure. Here one must also, when assessing market power, take into account that an electronic communications undertaking with high market

[325] In Article 19 of the Regulation, examples are given of other factors that can affect assessment of market power, for example access barriers, barriers to growth, total size and proportionate size of a company, control of infrastructure that is difficult to duplicate, technical and/or commercial advantage or dominance, countervailing buying power, access to capital, product differentiation, economies of scale and scope, network effects, vertical integration, highly developed distribution and sales systems, long-term access agreements and potential competition.

share can, under certain circumstances not operate to a significant degree without consideration for customers that have a strong bargaining position.[326] The conclusion on significant market power therefore needs to be based on an overall assessment where both market share and other factors related to market structure have significance, and where behaviour and practices of relevant electronic communications undertakings can also have an impact, such as with respect to pricing and marketing of the service.

1386. Pursuant to paragraph 7 of Article 46 of the Electronic Communications Act, ECOI is obliged to monitor market development, such as in connection with business agreements, including agreements on co-investment, which have an impact on competitiveness, with respect to obligations on the market. In Article 19 of the Regulation on market analysis in the field of electronic communications no. 556/2023 (hereafter referred to as "the Regulation") other factors that can also have an impact on market power are also listed. In item n in paragraph 1 of Article 19, one can for example also note that it is mentioned that long-term access agreements can be important in assessment of a company's power to behave to significant degree without consideration for competitors, customers and consumers. Another factor could be a contractual relationship with other parties to the market that could lead to the closure of the relevant market and could have an impact on assessment of significant market power, see item o in paragraph 1 of Article 19 of the Regulation. In this Article, it is emphasised that this mainly applies to roaming agreements, agreements on sharing of networks and agreements on co-investment that competitors have access to, that could, among other things, force independent commercial operators from the market, that smaller electronic communications companies might have done business with.

1387. ECOI considers that it is important when analysing competitive conditions, that on the one hand can be divided into market structure and on the other hand, behaviour of parties to the market, to have access to and discuss the main long-term agreements between companies on the electronic communications market in this country, and to other agreements that are relevant to the assessment of significant market power. By the nature of things, information from such agreement is to a large extent confidential as being sensitive commercial information, which means that a significant amount of information will therefore be redacted in the Sections here below.

1388. It is also important to call for such agreements in order to assess future prospects on the market. In paragraph 4 of Article 44 of the Electronic Communications Act, it states that when conducting market analysis, ECOI shall in a forward-looking manner, assess how market development would be if obligations were not in place, pursuant to Chapter IX of the Act and shall among other things take into account market development that has an impact on the likelihood of the relevant market tending towards active competition and shall take into account all competitive restraint at the relevant wholesale and retail levels. This is reiterated in paragraph 2 of Article 16 of the Regulation. From the above, it is clear that market analyses should be forward-looking, and it is thus important that ECOI gathers information about agreements in force for the long term on the market and other agreements that are important for future development on the relevant markets and for assessment of significant market power of individual companies. Agreements, along with deployment projections etc., can

[326] See Article 18 of the Regulation on market analysis in the field of electronic communications no. 556/2023.

provide ECOI with indications on how the market could develop during the lifetime of the analysis.

1389. It is clear that pursuant to paragraph 1 of Article 15 of the Act on ECOI no. 75/2021, ECOI can demand all information from an electronic communications undertaking deemed necessary for the investigation of individual cases. Pursuant to item f of paragraph 2 of the provision, this refers among other things to work on market analysis. ECOI considers information on long-term agreements on the electronic communications market and on other agreements that are significant for assessment of significant market power and future development of relevant markets, necessary to implement forward-looking market analysis, as prescribed by the Electronic Communications Act no. 70/2022. On this basis, ECOI has requested and received copies of the main agreements between electronic communications undertakings on the electronic communications market related to the relevant wholesale markets. There will be discussion on their material content in the Sections here below, and a conclusion will be drawn from them in Section 6.1.3.9.

6.1.3.2 Wholesale agreement between Siminn and Mila and the Settlement between CA and Ardian

1390. As has previously been stated, AB 855 ehf. and Siminn signed a purchase agreement on 23 October 2021, where AB 855 ehf. acquired 100% ownership in Mila. AB 855 ehf. is owned by two funds controlled by Ardian. The sale was subject to CA endorsement. Concurrent with the purchase agreement, Siminn and Ardian made a detailed long-term wholesale agreement for a term of 20 years, which was to apply between Mila and Siminn. The sale of Mila meant that Ardian gained control of the company and the sale constituted a merger in the understanding of Article 17 of the Competition Act no. 44/2005. In the lead up to the sale, on 1 January 2021, specific electronic communications systems and wholesale service had been transferred from Siminn to Mila which strengthened Mila's position on the electronic communications wholesale market, which included the mobile distribution system (RAN), IP-MPLS data switching system, data transfer system, international portal, Internet portal and wholesale of Internet service. These issues called for measures to be taken by CA.

1391. The CA investigation of the merger between Mila and Ardian commenced on 8 February 2022, and a Decision was made on 15 September 2022 which authorised the merger in question subject to conditions, and the Decision was thus published on 22 May 2023. With the final agreement between Siminn and Ardian from 30 September 2022, the formal ownership connection between Siminn and Mila was severed. In the Decision there is discussion on the CA investigation of the Ardian purchase, the views of the parties to the merger, along with conclusions of the investigation, underlying criteria and explanations of the obligations that the parties to the agreement undertook to follow.

1392. It is clear that many of the matters for resolution on the electronic communications market, that CA and ECOI have dealt with in recent years, and in fact during the last 20 years or so, have their roots in the former Siminn Group and its predecessor. The competitive issues that arose related to the Group, were in many respects related to the vertical integration inherent in Mila being the largest electronic communications infrastructure company and Siminn being the largest retail company on the electronic communications market and in the

fact that the wholesale operations of both of these parties were for an extended period of time in the hands of a single party.

1393. For this reason, CA considered that one could view the severance of the ownership connections in question in a positive light. In the CA investigation, it was however taken into account that the Siminn Group had in previous years been bound by conditions that were to obviate negative competitive impacts resulting from the vertical integration. It was also taken into account that important electronic communications systems and related wholesale operations had been transferred from Siminn to Mila in the run-up to the sale to Ardian, that is to say at the beginning of 2021. In the CA investigation it came to light that this was one of the prerequisites for the Ardian purchase. This transfer had also been conducive to strengthening Mila's dominant market position. There is also a suggestion of the likelihood that Siminn would not be able to provide as much restraint on the wholesale market, subsequent to the sale. In addition to this, it was considered that the wholesale agreement contained provisions on close vertical cooperation of the companies that had the objective or the resulting likelihood of preventing competition.

1394. The preliminary CA conclusion was that the merger and underlying agreements had such a multifaceted impact that the merger as it stood, would lead to strengthening of the Mila market dominance position. For this reason, it had been necessary to intervene. Parties to the agreement, requested settlement negotiations on 11 July 2022 on the basis of Article 17 of the Competition Act. Subsequent to the settlement negotiations, the parties to the agreement signed a Settlement on 15 September 2022. With the Settlement, CA endorsed the purchase, while the parties to the agreement were however among other things required to change the provisions of the wholesale agreement between Siminn and Mila, which was deemed to have a damaging impact on competition.

1395. In the original wholesale agreement, there were provisions that prescribed close cooperation between Mila and Siminn on commercial decisions on the electronic communications market, and also on investments and development. The parties to the agreement were among other things, obliged to make amendments to the wholesale agreement that was attached to the merger document. Ardian, Mila and Siminn made the above specified amendments to a draft of the wholesale agreement in question and CA confirmed that the amendments were materially in accordance with the Settlement.

1396. In the CA Decision no. 16/2023, more detail was provided on the amendments that were made to the wholesale agreement, and the following is stated in the Decision:

> *"Mila's exclusive right and monopoly on providing wholesale service to Siminn was limited. The initial agreement allowed for a comprehensive monopoly for Mila to provide Siminn with all the wholesale service that Siminn required, as previously stated. The parties to the agreement proposed significant amendments to the exclusive right provisions in the agreement that make it possible for Siminn to deal with other parties for up to 20% of wholesale service in areas where Mila has the strongest position. In this way, other infrastructure companies have the opportunity of offering service to Siminn, while at the same time, Siminn's competitive restraint vis-à-vis Mila increases.*

Provisions were removed that ensured Mila the right to receive information on, and to match offers from other Siminn suppliers, more specifically the "English provision", that would have guaranteed a dominant position for Mila vis-à-vis its competitors in agreements on wholesale service for Siminn, in addition to the exclusive rights referred to here above. The removal of these provisions creates an increased opportunity for competition in the opinion of the CA.

The Siminn and Mila ban on competition was obviated to a significant extent. The initial agreement obliged Siminn, as previously stated, to refrain from competing with Mila on the wholesale service and obliged Mila to refrain from competing with Siminn in retail, for at least the coming twenty years. The ban on Mila competing with Siminn has now been removed, while the ban on Siminn competing with Mila has been limited to three years. These changes create increased competitive restraint, both in retail and in infrastructure operations, in the opinion of the Competition Authority.

Cooperation between Mila and Siminn was decreased to a significant degree. The initial agreement prescribed close long-term cooperation between Mila and Ardian on commercial decisions, and also on investments and development, as previously stated. These obligations on cooperation have been to a significant degree removed in the wholesale agreement. Among other things, this levels the playing field for competitors on the electronic communications market, with respect to Mila infrastructure service.

With respect to [...] agreement is reached in the wholesale agreement [...][327] while at the same time, the parties have undertaken to guarantee, without regard to the above, that technical development and economies shall be enjoyed by customers in the form of lower prices.

The term of the agreement was finally shortened by 25%, i.e. from 20 years to 15 years, and provisions for extending the agreement have also been changed. When assessing the term of the agreement, the Competition Authority took into account other positive and material changes to the agreement that have been described here, and also the fact that formal ownership was severed, and in addition to this the merger investigation took into account, among other things the lifetime of Mila assets."[328]

1397. Because of the amendments in question, having in mind the changes that occurred to the competitive environment of electronic communications infrastructure, while the investigation was being conducted, it was the CA conclusion that there were no grounds for further intervention in the wholesale agreement on the basis of Article 17 of the Competition Act.

1398. In addition to the changes prescribed above, the parties to the merger proposed a variety of other conditions that were to apply in Mila operations. These conditions were tabled for the purpose of counteracting potential impact from the strengthening of the Mila position and in order to guarantee a positive impact from severing the vertical integration

[327] The information in the square brackets has been redacted in order to respect confidentiality in the CA Decision in case 16/2023. ECOI emphasis edit.

[328] CA Decision in case no. 16/2023, pages 113 and 114 https://www.samkeppni.is/urlausnir/akvardanir/nr/4359.

with Siminn. The conditions also constitute obligations on Mila that were previously to be found in the Settlement, which was the grounds for the CA Decision in case no. 6/2015 (previously 6/2013). The conditions are as follows:

a) Non-discriminatory access for electronic communications companies to Mila systems and service was assured.

b) A ban was imposed on bundles that inhibited competition and on tying of service elements.

c) Obligation imposed on Mila for dissemination of information relating to changes to Mila systems and service.

d) Obligation imposed on Mila to desist from adopting any measures that limits Siminn independence and commercial freedom, in order to counteract potential obstacles resulting from strong commercial connections between Siminn and Mila.

e) The conditions also prescribed the appointment of an independent monitor body.

1399. Individual conditions of the Settlement can be described in more detail. For example, the first condition imposed on Mila constitutes non-discriminatory access to systems and service and the respecting of non-discrimination, objectivity and transparency vis-à-vis electronic communications companies that request connection to Mila infrastructure when purchasing wholesale service. This also constitutes the prohibition of any kind of discrimination between customers and ensuring access for all electronic communications companies to important Mila systems and service and also taking action to ensure that the largest retail company, Siminn, does not enjoy priority in transactions with Mila.

1400. Another condition dealt with a ban on bundling and tying of service elements that was to inhibit Mila from being able to exclude competition from the company's competitors. CA considered it important to work against the company being able to leverage its strong position to exclude competition from competitors with a simpler service and product offer.

1401. The third criterion related to dissemination of information and obligation related to changes to Mila systems and service. Mila was thus obliged to inform all customers in the same manner, about new or planned goods or service, in order to maintain a level playing field.

1402. Active monitoring was also prescribed, and in addition to traditional CA monitoring on the basis of the Settlement, an independent party was appointed whose role was to maintain permanent and active monitoring to ensure that the conditions of the Settlement were followed.

1403. It was also stated by CA that one could draw the conclusion that there remained a strong commercial connection between Siminn and Mila. For this reason, Mila had undertaken to refrain from taking any measures that limited Siminn freedom in this respect and in the same manner, Siminn had signed a declaration where the company guaranteed among other things that it would at any given time have the capability of purchasing electronic communications service from Mila competitors. CA considered that the above specified changes to the wholesale agreement on the conditions that rested on parties to the merger, removed those competition barriers that the sale would otherwise have created. Without these changes and

conditions, the Mila market dominance position in specific fields would have strengthened significantly and the conditions of the sale would have worked against competitive restraint on Siminn and other electronic communications undertakings. Without changes, these competitions barriers would have obliterated the competitive gains of cutting ownership ties between Siminn and Mila.

1404. ECOI has in its possession the final wholesale agreement between Siminn and Mila, signed on 30 September 2022. In the wholesale agreement, there is among other things [...].

1405. In addition to the above one can also take account of the CA Decision in case no. 24/2023, where in that case, a position was taken on a Siminn request for cancelling conditions that rested on the company on the basis of the Settlement, according to CA Decision in case no. 6/2015, see previous case no. 6/2013.

1406. The Siminn request for cancellation of conditions of the Settlement came because of changed circumstances, subsequent to the above specified merger, where Mila and Siminn were no longer vertically integrated and where the Siminn position on electronic communications markets had weakened, to quote Siminn arguments.

1407. With the Siminn sale of its subsidiary Mila to Ardian, a Settlement was made with CA, as previously stated, and Mila undertook new conditions governing its operations while at the same time the conditions of the Settlement from 2015 became void vis-à-vis Mila. Siminn therefore requested that the conditions that were still in force for the company in the Settlement from 2015 should be cancelled. CA came to the conclusion that there were no grounds at this point in time to cancel all provisions of the Settlement.

1408. In Chapter 4 of the CA decision in case no. 24/2023, there was discussion on the impact of the Siminn sale of Mila to Ardian. In that chapter it was stated that the CA assessment was that the changed ownership of Mila and the severance of ownership connections with Siminn had constituted a positive step for competition on electronic communications markets. There was discussion on a wholesale agreement between Siminn and Mila having been initially submitted that had constituted competitive obstacles for which there was no precedent.

1409. In that case, no position had however been taken on the impact of the changes on the markets on which Siminn continued to operate, subsequent to the sale of Mila. That was the task of the CA review. When assessing the above, the CA sought among other things, the views of stakeholders. From an investigation of the case, available documentation, views of parties to the case and stakeholders and from prior studies, CA considered that one could make the following conclusions:

- *"When reviewing conditions in force that rest on Siminn pursuant to the Settlement from 2015, one must keep in mind that with those conditions that applied since 2013 on the separation of Siminn and Mila, measures were being taken to prevent Siminn from being able to leverage dominance resulting from ownership of Mila. The change that occurred with the sale of Mila was therefore less, than if the conditions in question had not been in place. With respect to Siminn, the change was by the nature of things, less than the company had maintained.*

- *The Competition Authority endorsement of Ardian purchase of Mila, on the basis of conditions relating to changes of the wholesale agreement between Siminn and Mila and of this new conditions in Mila operations on the infrastructure market, does not automatically lead to the conclusion that there is no reason to protect competition on markets on which Siminn operates subsequent to the sale.*

- *The wholesale agreement between Siminn and Mila constitutes a continuation of strong common interests between Siminn and Mila, that could have an impact on markets on which Siminn operates.*

- *It is not timely to assert that **connections of interest that may be equated to vertical integration**, are no longer in place subsequent to the sale of Mila. On the contrary, Siminn behaviour and recent communications between its CEO and ECOI, indicate a continuation of strong common interests and that Siminn does not plan to exercise latitude for competitive restraint vis-à-vis Mila, that the conditions of the Settlement with Ardian and Mila afford the company."*[329] (ECOI emphasis edit)

1410. It is clear that reference was being made to communications between Siminn CEO and ECOI, when CA discussed strong common interests between the companies, in this case in a letter from Orri Hauksson, Siminn CEO, when he raised many issues related to the Authority's activities during recent years that relate to Siminn and/or Mila. ECOI has replied to this letter and in this submission, ECOI replies among other things, to seven questions directed at the Authority by Orri. Of those seven questions, five related to Mila competitive interests in markets for electronic communications infrastructure and infrastructure service. The question is for example asked whether ECOI plans to raise objections to increased indebtedness of Ljósleiðarinn, on assumed sharing of legal services by ECOI and Ljósleiðarinn and whether ECOI plans to investigate the impact of Ljósleiðarinn indebtedness on margin squeeze and on electronic communications at wholesale level.

1411. Taking the above into account, ECOI considers it clear that there are still strong common interests between Siminn and Mila and that one must take this into account when designating undertakings as having significant market power and with the imposition of obligations on the relevant markets. Communications between Siminn CEO and ECOI further support this conclusion, and ECOI agrees with CA in that Institution's discussion and communications by letter, where it states that the communications indicate that there is little likelihood that Siminn plans to use, for its own benefit, the latitude for competitive restraint that the conditions in the Settlement between Ardian and Mila and the CA, afford the company.[330]

6.1.3.3 Wholesale agreement between Siminn and Ljósleiðarinn

[...]

[329] CA Decision in case no. 24/2023, page 48 https://www.samkeppni.is/media/akvardanir-2023/Akvordun-24_2023.pdf>

[330] Same source, paragraph 227.

6.1.3.4 Wholesale agreement between Sýn and Ljósleiðarinn

1412. On 20 December 2022, Sýn published a press release to the fact that Sýn and Ljósleiðarinn had signed a purchase agreement (hereafter "purchase agreement") on the Ljósleiðarinn purchase of the Sýn trunk line network and a long-term service agreement (hereafter "service agreement") between the companies. The agreed purchase price was ISK 3 billion. The service agreement has a term of 12 years and deals with wholesale access and service over the Ljósleiðarinn trunk line and access networks, in addition to service over foreign Internet connections. The transactions were with a reservation of endorsement by the Competition Authority. The Sýn CEO was quoted as saying:

> *"It is positive for Sýn to complete an agreement with Ljósleiðarinn where we sell a powerful trunk line network that the company has developed during the last 22 years. With this, we sharpen our focus even more on company customers and rely on Ljósleiðarinn for development and maintenance of a high-quality fibre network across the whole country at competitive terms. With the service agreement we assure our access to secure connections, increase speed and high service level for the coming 12 years. This simplification of operation of company infrastructure provides a return in a lower investment requirement and lower operating costs for the future. The deal will strengthen Sýn balance sheet and liquidity and make the undertaking even more prepared to advance and increase market share on the electronic communications and media markets."*[331]

1413. It shall be noted that the Ljósleiðarinn purchase does not relate to purchase of fibre threads or comparable transfer media or in underground infrastructure. What is purchased is the Sýn trunk line network which is based on fibre capacity and transfer media owned by other parties, which Sýn utilised to enable trunk line connections over one fibre thread from the NATO fibre cable which circles Iceland, for its own trunk line network. Sýn however, lost the thread to Ljósleiðarinn which won the Ministry of Foreign Affairs auction in 2022 and was allocated two fibre threads from the round Iceland cable, in order to develop fibre connections.[332]

1414. The Competition Authority initiated an investigation on the Ljósleiðarinn purchase of the trunk line network and related equipment from Sýn. According to a press release on the CA website, an adequate notification of merger was received by the CA on 15 March 2023, and the opinions of stakeholders on the purchase were requested on 23 March 2023. In the press release, it was stated that the CA investigation was particularly directed at the impact of the merger on competition and whether it constituted increased share of the parties to the merger in specific fields of electronic communications, or whether competition would be impaired in any other way.[333]

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[331] Press release on Sýn website "Sýn hf.: Sýn hf. and Ljósleiðarinn ehf. Sign an agreement". https://syn.is/fjarfestatengsl/kauphallarfrettir/2577317.

[332] See "Agreement reached on Ljósleiðarinn use of fibre" (Icelandic Government Offices, 1 July 2022) <https://www.stjornarradid.is/efst-a-baugi/frettir/stok-frett/2022/07/01/Samid-um-hagnytingu-ljosleidarathrada/>

[333] Press release on CA website https://www.samkeppni.is/utgafa/frettir/samkeppniseftirlitid-oskar-eftir-sjonarmidum-vegna-kaupa-ljosleidarans-a-stofnneti-og-tengdum-bunadi-af-syn.

1415. In the merger notification, which was published without confidential information in the above specified CA news item, the merger is described in more detail. It was stated there that on 5 September 2022, Sýn had undertaken, with the purchase agreement, to sell to Ljósleiðarinn, an electronic communications network owned by Sýn. It was also stated that on 20 December, parties to the merger had signed a service agreement in connection with service throughout the term of the agreement and with electronic communications connections, that Sýn had sold on the residential and corporate markets, in addition to markets for leased lines. It was also stated that subsequent to the merger, Ljósleiðarinn would acquire the sold trunk network and take over its operation. This was not a merger according to company law.

1416. Then the reasons for the merger were explained, and there was discussion on the merger having had a variety of reasons. One reason had been that the parties to the agreement had both considered it necessary to react to the substantial changes that had taken place with the sale of Mila to the Ardian investment fund. The Mila position had been extremely strong on the electronic communications market, and in addition to this it had been the only electronic communications company, which had close to national coverage with a fibre network, and which controlled over five of the eight fibre threads in what is called the NATO fibre cable that encircles the country. This dominant position would have ensured the company what was tantamount to monopoly of the wholesale markets for electronic communications in the countryside. In addition to this, Mila had increased investments in the fibre system in recent years. Reference was made to the transfer of important electronic communications systems from Siminn to Mila on 1 January 2021 having expanded the Mila value chain and product offer leading to increased capacity for the company to bundle electronic communications services at wholesale level, in such a manner that no party on the electronic communications market could counteract.

1417. In Section 3.2.1 in the merger notification, there was furthermore a description of the purchase of the Sýn trunk line network and of the Ljósleiðarinn deployment and the making of a long-term service agreement on electronic communications service as having been an important step towards disrupting the stagnation that had prevailed on the electronic communications markets. With the development of a new fibre circle, competition would, in the opinion of the companies, increase both at wholesale level and retail level in electronic communications. In Section 3.3.1, it was furthermore stated that undertakings by Sýn on continued wholesale transactions with Ljósleiðarinn had been an important criterion for the Ljósleiðarinn purchase of the Sýn trunk line network and one reason for a decision to make that investment.

1418. ECOI has in its possession a copy of both the purchase agreement and service agreement between the companies. [...]

1419. As previously stated, ECOI has possession of a service agreement between the merger parties and there will be discussion here on the main issues in the agreement.

1420. In Chapter 3 of the service agreement there is discussion on electronic communications that Sýn undertakes to purchase from Ljósleiðarinn on the backbone and access network, international connections and Ljósleiðarinn international gateway. This constitutes the following service:

[...][334]

1421. In Chapter 5 of the agreement there is then discussion on the criteria for the service agreement. Then it is stated in Provision 5.1: *"The material content and obligations of this service agreement are based on a number of criteria. In parallel to this service agreement, Ljósleiðarinn and Sýn make a purchase agreement on Ljósleiðarinn purchase of the Sýn trunk line network. With this purchase, Ljósleiðarinn takes over the Sýn trunk line network and its operation. For the agreed purchase price, Sýn undertakes to use Ljósleiðarinn as a priority supplier for purchase of electronic communications services pursuant to this agreement, i.e. that Ljósleiðarinn will, where possible, be the Sýn first choice when the company purchases electronic communications in wholesale, see however Articles 6.1 and 6.2 in this agreement."*

1422. In Chapter 6 of the agreement there is also a discussion on Sýn undertakings during the term of the agreement regarding volume and scope of purchased electronic communications service. It stated there that during the term of the agreement, Sýn undertakes to use Ljósleiðarinn as a priority supplier. This means that Sýn purchases electronic communications services, i.e. residential connections, corporate connections, transmitter connections, international connections, international gateway, specialised electronic communications solutions and services from Ljósleiðarinn on those markets where Ljósleiðarinn can deliver electronic communications service to Sýn in part or in full accordance with the provisions of this agreement.

1423. It is also stated that Sýn will each month during the term of the service agreement, purchase a minimum number of corporate connections in the following manner:

[...]

1424. In Article 10 of the agreement there is discussion on limitations and obligations undertaken by Sýn. In Provision 10.1, it is stated that having the investments and varied obligations in mind that have been undertaken by Ljósleiðarinn with the service agreement, Sýn undertakes specific obligations and undertakings. These are for example provisions that prescribe that Sýn may not enter into direct competition with Ljósleiðarinn on those wholesale markets covered by the agreement, for the first [...] from the coming into force of the agreement.

1425. It is clear from the above specified description that there will be significant commercial connections between the companies on the basis of this agreement. One must however note that Sýn has purchased from Ljósleiðarinn about [...]% of electronic communications service that the company uses on the wholesale and retail markets in which it operates. From this one can deduce that the above specified binding conditions on transactions between Sýn and Ljósleiðarinn will lead to transactions being of a similar nature, or slightly more than is now the case.

1426. With the CA Decision no. 37/2023, dated 28 September 2023, a position was taken on the Ljósleiðarinn purchase of the Sýn trunk line network. Subsequent to the investigation of the merger, it was the CA assessment that there was no reason for intervention regarding the merger, as there were no indications that a dominant market position was being created or

[334] Chapter 3 of the service agreement between Ljósleiðarinn and Sýn.

that the merger in other respects would lead to a significant distortion of competition. Sýn would for example, for a specific period subsequent to the agreement coming into force, not enter into competition with Ljósleiðarinn in wholesale electronic communications in the field covered by the agreement.

1427. When defining markets, with the merger document and case data in mind, CA came to the conclusion that the merger possibly had a horizontal impact on the wholesale market for leased lines, mainly trunk line segment, and as appropriate also on the termination segment. The purchase of the Sýn trunk line network could possibly have a vertical impact on downstream wholesale markets. The purchase could also have a potential impact, such as integration impact on markets for international connections. In the light of the wholesale agreement on electronic communications service, CA considered that such an agreement could have an impact on all likely markets in the case.[335] With respect to geographic market for wholesale electronic communications service related to the case, CA considered it to be the country as a whole, although the gathering and processing of data on the status of competition in trunk lines by geographic region had also taken place. [336] It is also stated in the Decision that subsequent to the takeover of the Sýn trunk line network, Ljósleiðarinn would continue to be subjected to considerable competitive restraint from parallel or adjacent Mila trunk lines. Ljósleiðarinn would then replace Sýn on the market, which did not in reality represent an actual departure of a competitor.[337]

1428. It is furthermore prescribed that it is the CA assessment that the Settlement will not enable the merged company, Ljósleiðarinn, to increase prices on its wholesale products on the basis of a dominant market position or in such a manner that competition will be disrupted in other respects in a significant manner because of the horizontal impact of the merger.[338] In addition to this, the potential positive impact of the merger was also taken into consideration, where the purchase of the Sýn trunk line network is part of Ljósleiðarinn development plans. The company also controls two threads in the round Iceland cable and has embarked on investments in new data transfer systems, and the merger will accelerate Ljósleiðarinn deployment. Ljósleiðarinn deployment will increasingly result in more options in data transfer across the whole country for electronic communications companies and finally in two core networks with national coverage, with the attendant positive impact both on infrastructure competition and for competition on downstream wholesale markets. There is furthermore increased deployment of access networks in the countryside in the Ljósleiðarinn plans subsequent to enlargement of the company's backbone network, with the resulting increase in options for consumers, increased speed, capacity and offer in data transfer and as a result of this, increased competition.[339]

1429. CA also came to the conclusion that diminishing competitive restraint from the Sýn trunk line network and the disappearance of Sýn from the relevant wholesale markets with the operations related to the merger, would nevertheless have happened without the purchase agreement between Ljósleiðarinn and Sýn. The alternative or closest option for Sýn, i.e. to make an agreement with Mila, would furthermore have had a more negative impact

[335] Competition Authority Decision in case no. 37/2023, paragraph 387.
[336] Same source paragraph 388.
[337] Same source, paragraph 390.
[338] Same source, paragraph 391.
[339] Same source, paragraph 392.

on competition than the merger in this case. The above has an impact on the CA merger assessment, particularly on the need for potential intervention in the merger.[340]

1430. With respect to the wholesale agreement between the parties that was signed in parallel to this purchase agreement on 20 December 2022, which is for a term of 12 years, the CA considers that the agreement supports Sýn directing a large part of its business on electronic communications networks to Ljósleiðarinn. According to the agreement, Ljósleiðarinn is named *"priority supplier"* vis-à-vis Sýn, or the company's first option for purchase of electronic communications service specified in the agreement. During CA case procedure, information was requested from parties on the significance of Ljósleiðarinn being a priority supplier for Sýn and on the interaction of the provision with provisions on obligation to purchase or minimum transactions. In the decision it is stated that the parties to the merger had declared that the provision on priority supplier was directly related to the agreed obligation to purchase and to minimum transactions, and did not go further than those provisions, nor prescribe an obligation to purchase, or priority in excess of the agreed minimum transactions. CA considered that the obligation to purchase of minimum transactions did not distort competition as it was below the levels of sole purchasing and vertical competition barriers used as a reference in competition law, and there was furthermore, the fact that Ljósleiðarinn had not been deemed to have market dominance on the wholesale markets in the case.

1431. Then there was the discussion on provision in an Appendix to the service agreement which showed that the plan had been to appoint a Ljósleiðarinn and Sýn working group, that among other things had the role of increasing subscribers and strengthening even further the cooperation between the companies. CA requested explanations from the parties as it was important that representatives of counterparties in the agreement were not concerning themselves with issues that were directly related to each other's competitive positions. It was also stated that nor was it in full compliance with views in the merger document, and in statements that the trunk line network and the enlarged Ljósleiðarinn backbone network would be open to all, thus ensuring that electric communications companies enjoyed non-discrimination. CA subsequently received a written reply from parties to the agreement where they declared amendments to this Appendix to the agreement where among other things, the above specified provisions were removed, and further amendments made. CA came to the conclusion that with the declaration of the parties to the agreement on amendments to the wholesale agreement and its Appendix, in this respect, the parties to the agreement had reacted to the Authority´s comments and that there was no risk of distortion to competition for these reasons.[341]

1432. On the basis of all of the above, see detailed discussion in the CA Decision in case no. 37/2023, CA came to the conclusion that the merger of Ljósleiðarinn with part of Sýn operations resulting from purchase of the trunk line network, would not result in the creation of a position of market dominance or that such a position became strengthened on the markets defined in the case. It was also emphasised that the CA investigation had not brought to light other potential impacts on competition, such as damaging vertical impacts or

[340] Same source 398

[341] Same source paragraphs 399-405

coordinated effects that distorted competition in another manner to a significant degree. CA therefore considered there to be neither grounds nor reason to intervene in the merger.[342]

6.1.3.5 Wholesale agreement between Mila and Tengir

1433. [...]

6.1.3.6 Wholesale agreement between Tengir and Nova

1434. [...]

6.1.3.7 Wholesale agreement between Tengir and Sýn

1435. [...]

6.1.3.8 Wholesale agreement between Nova and Ljósleiðarinn

1436. On 24 August 2023 ECOI requested a copy of the agreement between Nova and Ljósleiðarinn related to service on markets 3a og 3b. A query was sent to both companies who reacted promptly.

1437. [...]

6.1.3.9 Wholesale agreement between Hringdu and Siminn

1438. [...]

6.1.3.10 Summary and conclusions on the main long-term agreements on the electronic communications market

1439. Long-term agreements on the electronic communications market, as is the case in other markets can inhibit competition if they bind the relevant company to transactions for a long period of time for a significant part of their own need for the procurements in question. If a party to an agreement is considered to have market dominance, the provisions of Article 11 of the Competition Act covers agreements and other measures taken on the market and as appropriate, Article 10 of the Act relating to the same agreement.[343] Exclusive purchase means a contractual provision where a requirement is made that the purchaser in question undertakes to purchase at least 60-80% of its procurements of specific products from a specific seller. A fidelity discount means on the other hand, a discount or other business terms in an agreement between a wholesale purchaser, that have the objective, or that they result in the competitors of the supplier that is party to the agreement, being excluded or hindered in doing business with the purchaser in question.[344]

[342] Same source paragraph 406
[343] See, for example the Judgement of the EU Court in case no. 66/86 Ahmed Saeed Flugreisen (1989) ECR 803.
[344] See provisions of agreement on exclusive purchase and fidelity discount in chapter 3 in CA, report no. 1/2008: https://www.samkeppni.is/media/skyrslur/ymsar_skyrslur/skyrsla_samkeppniseftirlitsins_nr._1_2008.pdf.

1440. In CA Decision no. 16/2023, *Ardian purchase of all shares in Mila hf. from Siminn hf.,* which deals with additional limitations in merger cases, it is stated there among other things, that in Vertical Guidelines from the EU Commission, it is stated that vertical mergers can result in positive competitive impact which can for example result from increased efficiency, subsequent to the merger. Such efficiency can for example be in better use of production elements, such as infrastructure or sales channels, security in gathering procurements and/or sale of products. Under certain circumstances, such mergers can however constrain competition which is considered particularly to apply when they result in what is called the foreclosure effect, i.e. if competitors are excluded from a specific market. Such exclusion impact can manifest itself in varying sales levels. If parties to a merger and/or other involved parties make an agreement on ancillary restraints, which are in direct connection with the merger and necessary for the implementation of the merger, one cannot assess their competitive impact in connection with the merger itself.

1441. Merger can thus for example, result in an excluding influence for competitors of the merged company at a higher sales level by limiting access of their existing or potential competitors to the higher sales level to an acceptable basis for business at a lower sales level (customer foreclosure) and can thus limit their possibilities and incentives to compete on the market. This can result in higher costs for competitors of lower sales levels where it is made more difficult for them to procure supplies/offer of comparable price and at the same terms as prior to the merger, which can finally lead to a higher price at the lower sales level. This can for example be manifested in the merged company discontinuing purchase of goods from competitors at a higher sales level, it can diminish transactions or continue to purchase products at less advantageous terms as prior to the merger. This can be possible if the merged company is an important customer and if it is in the position to diminish or prevent possibilities for competitors at a higher sales level to compete. For the above specified situation to come into existence, the merged company needs to have significant market power at the upper or lower sales levels.

1442. In the Guidelines from the EU Commission on ancillary restraints, there is discussion on agreements that are directly connected to a merger and necessary to implement the merger. Strict obligations are made in this respect, see among other things, paragraphs 12 and 13. In paragraph 32-35 there is discussion on purchase or sales obligations between parties, subsequent to a merger. Such agreements are considered necessary ancillary restraints if:

a) The purchaser cannot immediately use the purchase to produce a product or provide service without receiving raw materials/procurements/service from the seller. The purchaser can thus need a specific glidepath before he can fully operate in an independent manner.

b) This glidepath may not last longer than five years, except in absolutely exceptional cases. Such an exceptional case could be where it is not possible to access the relevant raw material in another location (absence of a market).

c) The agreement between purchaser and seller may not constitute exclusive purchase or analogous measures.

1443. With the EU Commission Regulation from 10 May 2022 (no. 2022/720), certain types of vertical agreements and vertically concerted measures exempted from the ban in paragraph 1 of Article 101 TFEU.[345] In item f in paragraph 1 of the Regulation, exclusive purchase (non-complete obligation) is defined as follows:

> *"Non-compete obligation" means any direct or indirect obligation causing the buyer not to manufacture, purchase, sell or resell goods or services which compete with the contract goods or services, or any direct or indirect obligation on the buyer to purchase from the supplier or from another undertaking designated by the supplier more than 80% of the buyer's total purchases of the contract goods or services and their substitutes on the relevant market, calculated on the basis of the value or, where such is standard industry practice, the volume of its purchases in the preceding calendar year."*

1444. Exclusive purchase can enjoy an exemption from the Regulation if neither the seller nor the purchaser have more than 30% market share on the markets in question. This however does not apply if exclusive purchase lasts longer than five years, see item a in paragraph 1 of Article 5 of the Regulation, and in this case, it is not material whether the company in question has less than 30% market share.

1445. With the merger notification for the sale of Mila there was a detailed wholesale agreement on electronic communications between Mila as a service provider and Siminn as a purchaser (wholesale services agreement regarding electronic communications services). The wholesale agreement according to the parties to the merger was a prerequisite for the transaction (sale of Mila), and such an agreement was necessary for the sale of the company, apparently because of the course on former relationships between Siminn and Mila and the very substantial use of the latter company of electronic communications infrastructure owned by the former.

1446. The wholesale agreement was intended to document extensive and wide-reaching commercial connections between Siminn and Mila, over an extended period of time, and the agreement was to come into force subsequent to the merger. The wholesale agreement related to all of the main electronic communications procurements that Siminn needs to sell and provide its electronic communications services at retail level to consumers. The Siminn service offer is wide-reaching and the wholesale agreement therefore related to almost all of the wholesale markets on which Mila operated.

1447. In the light of the wholesale agreement and the case made by the parties in the merger notification, CA conducted an investigation of the wholesale agreement in connection with and as a part of its investigation of the competitive impact of the merger.

1448. Potential vertical impact from the merger had, all things being equal, mainly related to the comprehensive and long-term wholesale agreement between Siminn and Mila, including its characteristics as an exclusive purchase agreement. In this way it seemed that the agreement resulted in vertical monopolistic business connection between the largest electronic communications wholesale company and the largest electronic communications retail company for an extended period of time, that would have had an exclusion impact on competitors on wholesale markets for electronic communications and without changes would

[345] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELECOI:32022R0720.

have strengthened or maintained Mila market dominance. It was furthermore necessary to investigate the extensive cooperation resulting from the wholesale agreement.

1449. In the light of the above, CA and Ardian made a Settlement pursuant to Article 17 of the Competition Act. The Settlement required that the parties to the agreement undertook specific conditions, mainly such that changes were made to the long-term wholesale agreement between Mila and Siminn on electronic communications service, and that Mila was obliged to comply with conditions in its operations to, among other things, to counteract potential damaging impact from the wholesale agreement between the companies. Further reference is made to conditions in the above specified CA Decision no. 16/2023 that relate to the relevant wholesale agreement between the companies.

1450. In the CA Decision no. 24/2023, *request by Siminn hf. for review of the Settlement between the company and the Competition Authority from 2015,* which is stated in Decision no. 6/2015, there is among other things, discussion on vertical integration between Siminn and Mila, subsequent to the sale of Mila by Siminn. CA came to the conclusion that it was not timely to come to conclusion that vertical integration was no longer in place between Siminn and Mila, despite the severance of ownership ties between the companies and the sale of the company to Ardian, see statement on vertical integration between Mila and Siminn in Section 6.1.5.9 here below.

1451. The agreement between Ljósleiðarinn and Sýn is part of the Ljósleiðarinn purchase of the Sýn trunk line network. It can be noted that the service agreement between Ljósleiðarinn and Sýn is not as far-reaching as the service agreement between Mila and Siminn subsequent to conditions having been set by CA, among other things with respect to length and binding. The same can be said about other agreements discussed here above. Undertakings other than Mila and Siminn have not been designated as having market dominance on the electronic communications market, up to this point in time, and one can expect that those agreements will not have as damaging an impact on competition as agreements between undertakings with such status, see above.

6.1.4 Total size of the main electronic communications companies and profitability

1452. The size of the company for example on the basis of turnover or of some other metric, can be important when assessing significant market power. If the company is significantly larger than its main competitors, then this can mean competitive dominance. Dominance can be inherent in financial strength, better production methods, cheaper procurement, access to capital, distribution and marketing. A company with longer specialised experience on the market than that of its competitors can create similar dominance, for example in specialised knowledge in technical matters, knowledge of markets and of the legal environment.

1453. Characteristics best suited for comparison are company revenue and profitability on the electronic communications market and economic strength, for example in the form of equity ratio and total assets.

1454. Competitive dominance of the largest company can also be in the fact that its access to capital is easier and also because capital can often be acquired at more advantageous terms. There will be more detailed discussion on access to capital in Section 6.1.5.6 here below.

1455. In general, one can say that financial strength of the largest electronic communications companies, has increased during recent years as Siminn, Míla, Sýn and Ljósleiðarinn have all gone through recapitalisation subsequent to the bank crash of 2008.[346]

1456. Mila was a subsidiary of Siminn, who jointly formed the largest electronic communications company in the country, the Siminn Group.[347] In 2022, Mila was sold from the Siminn Group to the French financial management company Ardian France SA, so the companies were no longer vertically integrated. Siminn thus no longer operates as the owner of electronic communications infrastructure for fixed line networks, where on that market, Mila and Ljósleiðarinn are the two largest companies whether one measures by total turnover or economic size. Siminn retail has most Internet connections, mobile and fixed line telephony subscriptions, in addition to having a strong position on the data transfer market and on the IPTV and TV markets, and in providing bundles with the popular Heimilispakki.

1457. The following is a comparison of the financial key sizes, according to annual reports of the main companies in Iceland on the electronic communications market.

Table 6.1. Overview of operations of the main companies on the electronic communications market 2022

Operation	2022 Míla	2022 Ljósleiðarinn	2022 Síminn consolid.	2022 Sýn consolid.	2022 Nova	2022 Orku-fjarskipti	2022 Tengir
Total revenue	8,588	3,845	23,939	22,983	12,442	654	634
EBITDA	4,488	2,714	6,149	6,644	3,636	298	352
EBITDA ratio	*52.3%*	*70.6%*	*25.7%*	*28.9%*	*29.2%*	*45.6%*	*55.5%*
EBIT	1,184	1,300	2,945	1,592	1,615	169	177
EBIT ratio	*13.8%*	*33.8%*	*12.3%*	*6.9%*	*13.0%*	*25.8%*	*27.9%*
Cash generated before interest and tax	4,174	2,702	8,134	6,485	3,568	...	331
Cash generated before interest and tax ratio	*48.6%*	*70.3%*	*34.0%*	*28.2%*	*28.7%*	*...*	*52.2%*
Profit (loss) for the period	-354	-87	38,267	888	539	80	88
Profit (loss) margin	*-4.1%*	*-2.3%*	*159.9%*	*3.9%*	*4.3%*	*12.2%*	*13.9%*
Investment in property, plant and equipm.	3,403	2,640	953	1,000	1,555	236	415
Investment / Total revenue	*39.6%*	*68.7%*	*4.0%*	*4.4%*	*12.5%*	*36.1%*	*65.5%*

1458. Siminn total revenue was about ISK 23.9 billion in 2022, with Sýn coming next with ISK 22.9 billion revenue and then followed by Nova with revenue at ISK 12.4 billion.

1459. Operations before depreciation, financial items and taxes (EBITDA) returned ISK 6.6 billion for Sýn in 2022, about ISK 6.1 billion for Siminn, about ISK 4.5 million for Mila and ISK 2.7 billion for Ljósleiðarinn. Mila operational performance using these metrics is therefore much better than that of Ljósleiðarinn. It can be noted that in the Mila annual accounts for

[346] Síminn and Sýn (Vodafone) are registered on Nasdaq Nordic which is part of the largest stock exchange company in the world. On 1 September 2023, Siminn market value was about ISK 26,4 billion and the market value of Sýn was about ISK 11.4 billion.

[347] Siminn, Mila and Sensa formed in the main the Siminn Group, but Sensa, which operates in the field of information technology, was sold at the end of 2020.

2022, it is stated that the loss for the year can mainly be attributed to organisational changes and one-off costs, while by comparison, company profits in 2021 were about ISK 1.1 billion.[348]

Table 6.2. Overview of balance sheet of the main companies on the electronic communications market 2022

Balance sheet	2022 Míla	2022 Ljósleiðarinn	2022 Síminn consolid.	2022 Sýn consolid.	2022 Nova	2022 Orku-fjarskipti	2022 Tengir
Fixed assets	79,917	32,463	26,109	25,281	19,989	2,441	2,147
Current assets	2,531	926	25,072	8,645	2,782	103	22
Total assets	**82,448**	**33,389**	**51,181**	**33,926**	**22,771**	**2,544**	**2,169**
Equity	49,698	13,475	35,261	9,469	9,053	1,223	866
Long term liabilities	30,826	18,435	7,415	16,621	11,138	1,170	982
Current liabilities	1,924	1,479	8,505	7,836	2,580	151	321
Total equity and liabilities	**82,448**	**33,389**	**51,181**	**33,926**	**22,771**	**2,544**	**2,169**
Equity ratio	*60.3%*	*40.4%*	*68.9%*	*27.9%*	39.8%	*48.1%*	39.9%
Current ratio	*1.3*	*0.6*	*2.9*	*1.1*	*1.1*	*0.7*	*0.1*
*Net interest bearing debt**	*20,010*	*16,232*	*2,235*	*3,111*	*1,768*	*958*	*976*
*Net interest bearing debt / EBITDA**	*4.5*	*6.0*	*0.4*	*0.5*	*0.5*	*3.2*	*2.8*
Interest coverage ratio EBITDA / Interest paid	*3.7*	*4.0*	*9.7*	*6.8*	*4.9*	*4.4*	*5.4*
Average long term interest rate, non indexed	*9.10%*	*8.60%*	*6.38%*	*7.79%*	*...*	*...*	*...*
Average long term interest rate, indexed	*...*	*1.64%*	*...*	*...*	*...*	*...*	*...*

** Net interest-bearing debt does not include lease obligations*

1460. Mila equity was ISK 49.7 billion at the end of 2022, Siminn coming next with equity of ISK 35.3 billion. Sýn equity was ISK 9.5 billion at the end of 2022 and Ljósleiðarinn equity was ISK 13.5 billion at the same time. There is therefore a large difference in equity between the two largest parties on market 3a, i.e., Mila and Ljósleiðarinn.

1461. If one considers the debt/EBITDA ratio, which is found by dividing EBITDA by interest-bearing debt having deducted cash in hand, then the proportion is 0.4 for Siminn in 2022, 0.5 Sýn, 4.5 for Mila and 6.0 for Ljósleiðarinn. The proportion gives investors and/or lenders an idea of how long it will take a company to pay up its debts, without regards to interest, tax, depreciation or amortisation. A high ratio can lead to higher interest and difficulties with loan funding. As stated here above, this proportion is somewhat higher for Ljósleiðarinn than for Mila.

1462. When one considers performance of companies in the overview of operations here above, it can be seen that the performance of Mila and Ljósleiðarinn is negative in 2022, but both these companies returned a positive performance the year before. Mila performance was thus in 2022, negative by about ISK 354 million and Ljósleiðarinn by about ISK 87 million, while the Mila performance in 2021, was positive by about ISK 1.1 billion and Ljósleiðarinn by about ISK 273 million. It is therefore clear that the performance of Mila and Ljósleiðarinn has deteriorated considerably between the years with a large part of the explanation being in

[348] See Mila annual accounts 2022 where it states among other things: *"The total revenues for the year 2022 amounted to ISK 8,588 million, compared to ISK 8,586 million in 2021. Cost of sold services and operating expenses amounted to ISK 7,404 million in 2022 compared to ISK 6,.316 million in 2021. The increase is mostly due to one-off expenses related to the restructuring of the business and increased depreciation following purchase price allocation (PPA). EBITDA in 2022 amounted to ISK 4,488 million compared to ISK 5,109 million in 2021."* (https://www.mila.is/media/pdf/Mila-Arsreikningur-31.12.2022-Lokaskjal.pdf)

higher financial costs for the companies, as the interest rate has increased significantly during the last two years. Development of electronic communications networks requires major investment which is funded with loan capital which means that the increase in interest rates has a major impact on financial costs and performance of infrastructure companies. Average interest on non-indexed Mila loans has increased from 4.73% in 2021 to 9.1% in 2022, a company which was recapitalised in 2022. Average interest on non-indexed loans at Ljósleiðarinn has increased from 4.10% in 2021 to 8.6% in 2022, and the company began issuing green bonds in the first half of 2022 in order to reduce financial costs. The equity ratio and EBITDA of Mila and Ljósleiðarinn are however strong, but it is clear that the higher interest rate has had a major impact on the company's performance. Other companies in the ECOI comparison returned positive performance in 2022, particularly Siminn, where the company sold Mila during that year to Ardian France SA.

1463. Of the companies that own fixed access networks or rent access to them, Mila is the only network that covers almost the whole country. The proportion of Mila revenue of total revenue of the companies operating on the local loop market was 63% in 2022 and was 62% in the year 2019 and 78% in 2012. Ljósleiðarinn revenue was about 28% of total revenue in 2022 and was 30% in 2019 and 20% in 2012. Other electronic communications companies jointly had less than 10% revenue as in 2019, which is a significant increase from a 2% share in 2012. Mila revenue has thus not changed much, proportionately, since 2019, but one must take into account that in 2021, Mila purchased the Siminn mobile phone transmission network and IP/MPLS network system, which increased revenue significantly for the company. One must keep in mind that the company revenue mixes on the market for fixed access network is not entirely comparable because of varying operations of the companies in question, and the interaction of markets 3a and 3b, but it does give a strong indication of the position of companies on the market.

1464. It is appropriate to point out that Ljósleiðarinn is fully owned by Orkuveita Reykjavíkur (OR) which is a public sector company mostly owned by the City of Reykjavík. OR is financially very strong in comparison with the above specified electronic communications companies. It should however be noted that, according to Article 10 of the Telecommunications Act, Ljósleiðarinn shall be separated financially from other OR operations such that it is equivalent to an unrelated company and care should be taken that competitive activities such as Ljósleiðarinn operations are not subsidised by other operations or are operations which enjoy monopoly or special rights in fields other than electronic communications. ECOI has the role pursuant to the law, to monitor that electronic communications operations are financially separated from utility operations which enjoy monopoly or special rights in fields other than in electronic communications, and ECOI has for this purpose, imposed various obligations on Ljósleiðarinn in recent years.

1465. It is the opinion of ECOI that Ljósleiðarinn does not enjoy in a direct manner the financial strength of its owner more than other electronic communications companies from their owners, e.g. from pension funds which are the main owners of Siminn and Sýn and Ardian France SA, which owns Mila.

1466. Exceptions to financial separation between Ljósleiðarinn and OR, that ECOI has identified during the duration of Ljósleiðarinn operations, cannot in the opinion of ECOI be considered significant. With the PTA Decision no. 3/2019, the Administration conducted such

an investigation for the years 2016-2017.[349] The Decision was part of the ECOI surveillance of the implementation of financial separation of Ljósleiðarinn within the OR Group, pursuant to Article 36 of the previous Electronic Communications Act from 2003. The investigation covered the period 2016-2017 and was based on book-keeping and data from operations for these years. It was the main conclusion of the Authority, that financial separation between OR and Ljósleiðarinn had been in accordance with the provisions of Article 36 of the Electronic Communications Act, with the exception of the provision of a loan to Ljósleiðarinn in connection with the cash pooling of the OR Group. ECOI also raised an objection to the conditions from credit institutions in Ljósleiðarinn loan agreements with respect to OR ownership of Ljósleiðarinn. ECOI therefore considers there to be a need to impose obligations on Ljósleiðarinn for the implementation of financial separation between OR and Ljósleiðarinn with respect to the above specified issues. ECOI did not have the legal authority to impose penalties on Ljósleiðarinn for breaches according to the older Electronic Communication Act, other than per diem fines.

1467. ECOI made another investigation of Ljósleiðarinn financial separation within the OR group in 2021, which covered the years 2018-2020. The ECOI Decision was published in the Authorities Decision no. 1/2022, when it was among other things stated that the implementation of Ljósleiðarinn of the OR cash pool was not entirely in accordance with the ECOI obligation, see Authority Decision no. 3/2019. As this was a case of insignificant deviation, and as an adequate explanation was provided by Ljósleiðarinn, ECOI considered this to be no grounds for special measures by the Authority. In accordance with ECOI instructions, it is no longer a condition in the company's new loan agreement on OR ownership of Ljósleiðarinn. Furthermore, there was nothing in the ECOI examination of pricing of service between Ljósleiðarinn and OR to indicate that these transactions are abnormal in any manner. It was therefore the ECOI conclusion that financial separation between OR and Ljósleiðarinn, during the years 2018 to 2020, had been in accordance with Article 36 of the electronic communications legislation then in force.

1468. ESA then processed a complaint from Siminn relating to alleged unlawful state aid in connection with Ljósleiðarinn behaviour, which was described in the above specified PTA Decision no. 3/2019. ESA published its Decision[350] on 21 June 2023, where the ESA conclusion was that the four measures being examined had not constituted state aid from OR to Ljósleiðarinn in the understanding of the EEA Agreement, apart from measure 1, which was considered to be minor state aid and thus not unlawful state aid in the understanding of the EEA Agreement.

1469. Competitive dominance constitutes among other things that Mila enjoys greater economy in operations than other companies in wholesale and is in addition to this has a long-term agreement for a term of 15 years with Siminn, which is by far the largest company

[349] In its prior decisions, ECOI has also imposed various obligations on Ljósleiðarinn to ensure the financial separation in question and one can in this connection indicate PTA Decisions from 13 November 2006, no. 32/2008, no. 14/2010, no. 25/2010, no. 39/2010, no. 2/2014 and no. 11/2015. One can furthermore indicate Rulings of the Appellate Committee for Electronic Communications and Postal Affairs from 21 December 2006, 27 August 2007, no. 3/2010 and no. 5/2014.

[350] https://www.eftasurv.int/newsroom/updates/esa-finds-no-aid-was-provided-orkuveita-reykjavikur-subsidiary

in retail on the electronic communications market. This can among other things, be manifested in more economical procurement, in production methods, in distribution and marketing.

1470. When taking into account the size and financial strength of Mila as a network operator on the market for fixed access networks, along with a wholesale agreement with Siminn for a term of 15 years, it is the conclusion of ECOI that despite the fact that Mila is no longer part of the Siminn Group, the total size of the company and its economic strength is greater than that of competitors which strengthens the Mila position on the relevant market and affords the company a significant competitive advantage.

6.1.5 Entry barriers

6.1.5.1 General comments on barriers to entry

1471. 'Entry barrier' is a collective name for various factors that can influence companies' market power. If there are few barriers on the market, potential profits are an attraction for new companies to gain market share from those who are already there. Potential competition from new parties can influence the behaviour of a company with significant market power and can lessen its harmful impact on competition. Entry barriers on the other hand weaken or prevent competition.

1472. In Article 20 of Regulation no. 556/2023 on market analysis in the field of electronic communications, the following is stated:

> *"Access barriers to electronic communications markets can on the one hand relate to market structure and on the other hand, can be legislative and/or based on government decisions, or on the results of court cases. The above specified access barriers result from cost or demand conditions that create a symmetric competitive conditions between operating parties and new parties, that hinder or prevent the entry of new parties to a market. The latter access barriers are not based on economic reasons but result rather from legislation or government or case law that have a direct impact on access conditions and/or the position of operators on the relevant market.*
>
> *Conclusion with respect to assessment of significant market power, hinges, among other things on how easy it is to enter a relevant market. Access barriers to electronic communications markets are often substantial, particularly in the case of technical barriers, such as shortage of frequencies, or where access to the relevant market requires considerable investment in infrastructure, as it can take a long time for investments to provide returns."*

1473. There is a strong relationship between entry barriers and profitability. The more entry barriers that exist, the greater the profitability that can be expected from incumbent companies, which can often be attributed to a lack of competition rather than to efficiency. An ideal situation for an incumbent company is one where there are high entry barriers and low exit barriers. In such circumstances, incumbent companies deter new companies from establishing themselves and companies without profitability will soon give up.

1474. The objective with ECOI market analysis and potential subsequent measures, is as before to strengthen competition on the relevant markets, or on those geographic parts of

markets where effective competition does not prevail. It is conducted for the purpose of encouraging innovation and development, of enhancing companies' competitiveness and the interests of consumers. One way to achieve this is to limit entry barriers to markets, which can be in varying forms. Here below there is further discussion on the main barriers that are considered to prevent entry of new parties to markets 3a and 3b.

1475. The entry barriers that confront companies on the relevant market can to a large extent result in the first instance from a strong position of one or more incumbent companies, and on the other hand from difficulties encountered by new electronic communications companies in creating facilities they need to compete on the market. The former category includes control of infrastructure that is difficult to duplicate, economy of scale, economy of scope, access to capital and vertical integration. The latter category can among other things include sunk costs, restrictions to growth and costs for service systems.

1476. Entry barriers usually have their roots in the development and position on the electronic communications market but in some instances there is a risk that a party that potentially has significant market power could see an advantage in making it difficult for competitors and delaying their entry to the market, for example by refusing requests for facilities in hosting space, by setting restrictive conditions on access for employees to buildings that house leased facilities and so on. It is important to discuss entry barriers that could exist on the relevant market and take a position on whether these are real barriers or not.

6.1.5.2 Control of infrastructure that is difficult to duplicate

1477. When a company has control over facilities that are difficult or expensive for others to duplicate, this can be a significant barrier for its competitors. Examples of such facilities are wide-reaching access- and trunk line networks, and furthermore bitstream systems though they are less frequent. This aspect must be examined in connection with the discussion on sunk costs in Section 6.1.5.3.

1478. It is possible to reduce investment costs by cooperating on electronic communications structures, that is to say co-location or other sharing of networks. Co-location is for example when new parties locate their equipment in buildings built for that purpose. Savings from this can be significant, particularly in rural areas. Sharing can variously be on the basis of free agreements, agreements reached because of an obligation pursuant to Article 35 of the Electronic Communications Act to provide access to facilities, or to provide access without prior market analysis, see Article 38 of the Electronic Communications Act, or access to civil engineering subsequent to market analysis, see Article 47 of the Electronic Communications Act, or to provide access to networks and services, see Article 48 of the Electronic Communications Act.

1479. The development of new bitstream systems is not only a question of access to ground cables, distribution frames, street cabinets and in-house cabling, as premises are also required for system equipment that connects to local loops. When Mila upgraded its copper system from ADSL to VDSL a decade or so ago, a shortage of access to Mila street cabinets for example came to light, which led to Vodafone (now Sýn) dropping out of the relevant

wholesale market. The above particularly applies to urban areas where it can be difficult to find a suitable location for such facilities and where the attendant costs are substantial.

1480. It is not given that network operators will be granted permission to excavate for new local loops. In urban areas it is usually necessary to remove existing constructions (such as pavements and roads) before a ditch is excavated. Apart from the substantial costs, this can be inconvenient for inhabitants living nearby. One must thus consider it doubtful that companies will see the advantage in installing the same kind of local loops that already exist in the areas in question, except in the densest urban areas, and in addition to this it could be economically disadvantageous for the nation. It is therefore not unlikely that parties will deploy further fibre connections to buildings in urban areas and thus concentrate or enlarge their networks, and Mila for example has been deploying its fibre network in the Capital City Area after Ljósleiðarinn and for example after Tengir, for example in Akureyri.

1481. Municipalities and small local telecommunications companies have however to some extent deployed local access networks. There is no evidence that such networks, with the exception of the development of networks of Ljósleiðarinn, Tengir, Snerpa and Austurljós to some extent, have been deployed on competitive grounds up to this point in time, but funding for this development has rather been from the municipality in question with the addition of grants from the Telecommunications Fund and from the Regional Development Fund in most instances. Westman Islands municipality has founded a company called Eygló, which will deploy fibre to the whole municipality during the coming 2-3 years.

1482. In recent times, the Competition Authority has granted Mila and Ljósleiðarinn on the one hand Mila and Tengir on the other hand, permission to share civil works among other things in the Capital City Area in Árborg, in Reykjanesbær and in Húsavík. Such plans are also on the table with Mila and Ljósleiðarinn in the Vogar municipality in Grindavíkurbær in Suðurnes and with Mila and Tengir in Raufarhöfn in Norðurþing. Such sharing can support further fibre roll-out in this country in profitable areas.

1483. If there is a shortage of facilities for electronic communications equipment, then this can create an entry barrier for parties in infrastructure or service competition. Mila buildings are particularly important in this connection because of the history of the company has in development of electronic communications systems across the country and their importance in operating service and in interconnection of networks. Ljósleiðarinn utilises however to a large extent buildings owned by OR, but there is no access obligation on OR nor Ljósleiðarinn, and OR offers hosting of equipment to a considerable extent. According to information from Ljósleiðarinn, [...]% of Ljósleiðarinn connection points are in facilities owned by OR. Ljósleiðarinn has also leased facilities in Mila buildings to some extent.

1484. As has been previously stated, access to local loops on its own does not ensure competition. New parties in the market must also have the option of locating their equipment near node points (for example main distribution frames in telephone exchanges). In some instances, it could be a possibility to locate equipment in other buildings close to a node point or telephone exchange, but more often than not there is no option but to find space for the equipment in the telephone exchange in question and to ensure access to the equipment for monitoring and maintenance. It can however sometimes be difficult in some instances because of lack of space. Built-up areas can be difficult for companies to erect new buildings

for their terminal equipment as building land is often not available and where it is, the cost of buying is high. Built up areas in Reykjavik have for example become more densely populated in recent years, which means fewer and fewer sites available for technical space. Denial of requests for facilities or abnormal fees can be a barrier for new companies on this market, and even for the enlargement of local loop networks of companies already in operation.

1485. Requests for access to facilities must be weighed up against factors such as available space on offer, demand importance of facilities for the requesting party. In addition to this, that access to the space is technically realistic or that it is financially viable to offer it. One also has to note that there could potentially be interference if two parties have their equipment in a small space.

1486. ECOI considers it unlikely that any party will see an advantage in development of new local-loop networks at a national level and in achieving such national coverage that the Mila copper network has had to this point in time, but it is rather likely that companies such as for example utilities or individual municipalities in the countryside will rather concentrate on introducing fibre without active equipment to their home areas and that this will be done in smaller areas and that larger parties will focus on increasing density where their networks are already operating and increased deployment will be possible in urban areas in the countryside.

1487. ECOI considers the deployment of new bitstream systems, at least at a national level, to be problematic and unrealistic in many instances, at least on competitive grounds. One can, however, expect that the deployment by Míla, Ljósleiðarinn, Tengir and Snerpa will continue in these companies' existing operating territories in the coming years and in addition to this, municipalities in the countryside have funded their own local fibre networks with state aid. One can for example expect that the Ljósleiðarinn operational territory will expand during the lifetime of the analysis, though it is difficult to predict to what extent. The above, and the importance of access to facilities, particularly in connection with the fibre roll-out now in progress, can create entry barriers for general competition on the relevant wholesale markets.

1488. ECOI comes to the conclusion that facilities can, along with delays in processing applications, be a barrier to competition that is based on service offer through a fixed line access network, if the appropriate wholesale obligations are not in place in the areas where a specific party has significant market power. Lack of space is not generally a problem today. For this reason, lack of facilities in premises is not considered to be a barrier to competition in areas where a specific party has significant market power, given that obligations on access to the premises are in place, but this could be an access barrier if obligations were not in place.

6.1.5.3 Sunk costs

1489. When a company enters a new market, it needs to perform preparatory work and to invest in start-up costs. If entry to a market fails it can sometimes be possible to recover such costs, for example with the sale of assets and equipment that has been invested in. Sunk costs are those costs that the new entrant has to bear as a loss should he not be able to establish himself on the market. Sunk costs can constitute a barrier to entry, because the incumbent

companies on the market do not have to bear them because in most instances, they have already paid them. New companies that are finding their place on a mature market, like in the wholesale markets in question here, are at a greater risk of having to bear sunk costs than the incumbents who have already written off a large proportion of their investments.

1490. Costs, for example for marketing are generally highest at the beginning of operations. If a new party is to attract a significant share of customers from incumbent companies, it will presumably need to invest heavily in extensive marketing. Sunk costs can be in investments in electronic communications equipment and business costs related to marketing, particularly with young companies that are trying to gain a foothold on the market. One can assume that sunk costs are likely to be proportionately high in Iceland for geographic reasons and because of the widespread communities.

1491. Despite the fact that most local loops in this country have long been copper lines, companies that deploy local loops have only installed fibre local loops in recent years and offer bitstream service on their networks. Mila is now vigorously deploying fibre in new districts and in all districts at many locations in the Capital City Area and also at many urban areas outside the Capital City Area, and the company has ambitious plans to continue in this vein in the coming years. Mila offers GPON connections on its fibre local loops, while at the same time offering VDSL high-capacity solutions over copper local loops at most locations where copper local loops are in place. Mila expects to decommission its copper network in stages until the end of 2028, where most effort in the decommissioning will be during the last two years. Both Ljósleiðarinn and Tengir have P2P topology in their fibre networks. [...]. On the other hand, Ljósleiðarinn only offers bitstream access to its fibre to the home. For this reason, as things stand today, it is difficult for new companies to enter the bitstream market in the area where Mila and Ljósleiðarinn have deployed, without deploying their own fibre, while Tengir offers access to dark fibre on its local loop network.

1492. The start-up cost of deploying a new data transfer network, for example for bitstream service, lies in specialised equipment and its installation, which has a relatively short life cycle because of technological advances in this field. One must keep in mind that there can be significant value in specialised facilities with the necessary cabling. The same applies to fibre that has been located in the ground where access networks and trunk line networks connect, particularly at those locations where there are no fibre connections in place.

1493. One must also note that new companies have found it difficult to compete with Mila's bitstream system which has close to national coverage, and which was developed over the past years under different market conditions. Mila also operates an extensive trunk line system, which makes it possible for the company to connect all of the company's access systems across the country. ECOI considers that sunk costs are an entry barrier for new companies on the relevant wholesale markets.

6.1.5.4 Economy of scale

1494. Economy of scale is said to exist in company operations where increased production means a lower total cost for a product or service unit. This is characteristic for technical companies which have relatively high fixed costs and low variable costs. Economy of scale can act both as an entry barrier and as a competitive advantage. Network operators already on

the market endeavour to operate their own networks with maximum efficiency. New network operators need time to develop their operations, gain a customer base and traffic and can thus not expect to enjoy the same economy of scale as those that have operated their electronic communications networks for years.

1495. With respect to the broadband market, the operation of a broadband system constitutes in itself economy of scale in proportion to the size and scope of the bitstream system in the operations of the party in question. This is because of the substantial underlying investment and fixed costs that are for example inherent in the system. Economies also emerge in lower start-up costs because of bulk purchase of equipment and advantageous agreements with manufacturers. In the same way economy of scale can result from the minimum number of repairmen and other staff with appropriate knowledge and specialisation that are needed to provide adequate service. These factors can in some instances be a barrier to entry into the market.

1496. Mila offers services almost nationwide, and, in some areas, it is the only company on the market. Mila has had time to establish itself and acquire business in the regions in question, an option which other companies have not had. Mila has also been purchasing or leasing for the long term, smaller local fibre networks in the countryside, which have mostly been deployed by municipalities with grants from the Telecommunications Fund and has taken over the operations of others or operates bitstream service there. One can assume that this will make it less economic for new companies to enter the market areas in question and achieve minimum economy of scale.

1497. After Vodafone (now Sýn) received access at the beginning of 2011 to fibres owned by NATO, the company increased its offer in municipalities and villages at many locations around the country. The optical fibres in question that are laid all around the country belong to the market for trunk line segment of leased lines, but the company does not operate its own access network, as the company first and foremost purchases Access Option 1 in bitstream. Sýn however developed bitstream service for its own retail in a few countryside networks. As previously stated, Sýn has disappeared from the relevant wholesale market. The Sýn agreement on lease of NATO fibres expired in 2022, and in its place, it was notified on the Ljósleiðarinn website, dated 30 June 2022[351], that the company and the Ministry of Foreign Affairs had agreed on Ljósleiðarinn use of two of eight fibre threads in the NATO fibre cable which lies around Iceland and to the West Fjords. This is a lease of up to 10 years with the possibility of further extension. The undertaking's CEO at that time was quoted as saying that the agreement in question was a watershed for Ljósleiðarinn, which would now be even better equipped to serve its customers. An agreement for the Ljósleiðarinn purchase of various Sýn network systems was endorsed by CA at the end of September 2023. After this purchase, Ljósleiðarinn has stronger opportunities for growth and the companies' opportunities for operating on wholesale markets across the country will increase. Sýn involvement in the relevant wholesale markets is not in place anymore.

1498. Despite the significant development during the past years on the Ljósleiðarinn local loop network, the company still has some way to go to for it to be comparable in size to the Mila local loop network, except in the Capital City Area and at many locations in the

[351] https://www.ljosleidarinn.is/frettir/ljosleidarinn-leigir-tvo-thraedi-i-nato-strengnum.

Southwest part of the country, and also in individual municipalities on Reykjanes and in South and West Iceland. ECOI does not expect significant changes to take place in this respect. Ljósleiðarinn, on the other hand, regards the whole country as its market territory when looking to the long term, but there is no action plan in line with this. ECOI considers it unlikely that the above will happen during the lifetime of this analysis, at least to the extent that it will have a significant impact on the conclusion of the analysis.

1499. ECOI concludes therefore that Mila enjoys economy of scale in most parts of the operation and deployment of bitstream systems which strengthens Mila's position against other companies on the market. This economy of scale can manifest itself as an entry barrier for the latter companies. In the opinion of ECOI, Ljósleiðarinn enjoys considerable economy of scale, but to a lesser extent than Mila.

6.1.5.5 Economy of scope and network effects

1500. Economy of scope is the economy where it is less expensive to manufacture two or more goods together rather than each separately. A lower cost is achieved by jointly using resources in the production. A good example of this is the use of an electronic communications network where a variety of services are offered to consumers. Economy of scope can act both as an entry barrier for new parties and as an advantage in the market over competitors.

1501. As has previously been mentioned, Mila has the only local loop network (copper and fibre) and bitstream service in the country, which covers almost the whole country. The company had 49% market share at national level at the end of 2022 on market 3a and 52% on market 3b. The company has been gaining significant ground, with respect to market share in wholesale of bitstream connections over fibre and had about 42% market share there at the end of 2022, after having had 28% share at the end of 2020 and 15% at the end of 2018, but the share had been negligible up until 2016. Ljósleiðarinn had 43% market share at the end of 2022 on market 3a at national level and had 45% market share on market 3b. Tengir had 6% market share at the end of 2022 at national level on market 3a and had just under 2% share on market 3b. ECOI considers that during the lifetime of the analysis, Mila's share in bitstream service over fibre local loops will continue to increase at the cost of the shares of Ljósleiðarinn, Tengir and other fibre operators. Mila also increasingly offers bitstream wholesale service on fibre local loops owned by others.

1502. Mila has a network system that reaches virtually the whole country that was initially developed for fixed line telephone. Mila comprehensive network systems offer services throughout the whole country almost independent of the user's geographic location. It is possible to assert that this position of this company can act as an entry barrier to new companies that do not have such a widely distributed bitstream system or breadth of service offer.

1503. It is clear from the above discussion that Mila is the company that operates in most areas of electronic communications service at wholesale level. Mila owns electronic communications backbone systems, with close to national coverage and operates bitstream systems on its backbone systems, and also on fibre networks owned by other parties, such as

Tengir and most countryside networks. On the wholesale market, Mila has a trunk line network and access network that has close to national coverage, from which this other electronic communications companies, from which both retail companies purchase service now and then, in order to provide electronic communications service on the retail market, and also as a component of their own wholesale offer. Mila also operates a mobile phone distribution system, which was previously owned by Siminn. The service offer and economy of scope in the above-mentioned understanding with Siminn is therefore substantial in electronic communications service at wholesale level, both in that the company offers a variety of services in this field in addition to the fact that it has a large share of most markets.

1504. In paragraph 1 of Article 19 of Regulation no. 556/2023 on market analysis in the field of electronic locations, there is discussion on factors other than market share, which can have an impact on market power. In item k there is, for example, discussion on network effects. There it states that network effects can be direct or indirect. There it states that direct network effects are in place when the value of a product or service for consumers results from increased use of others such product/service, while indirect network effects occur when such increased value results from increased use of an additional product or additional service.

1505. On some markets, some companies become more attractive in the eyes of consumers as the total number of their customers increases. Such circumstances occur on markets where more parties use the procurement in question or purchase the service in question. What is called network effects can then be generated. Here one can mention electronic communications markets and for the purpose of illustration markets for credit cards and the software market. One can see quite clearly that before credit cards were commonly used it would have been difficult to convince companies to get a credit card reader and consumers to get a credit card. In time, these two systems grow in size and thus become more valuable. The more people that use the service, the more valuable it becomes for consumers. The same can be said about those that sell goods and service, mutatis mutandis. If the scope and network of transactions is very large, it is difficult to enter the market. If network effects are strong enough, the market can gradually develop into having only one network with resulting monopoly. The risk of this would be generally greater if substantial economy of scale resulted from development of the network where there were no products available with good substitutability for the network product.

1506. The main electronic communications companies on the retail market, have in recent years placed great emphasis on acquiring customers by offering popular TV services, bundled with electronic communications service.[352] In CA Decision no. 24/2023, *Síminn hf. request for revision of the Settlement between the company and the Competition Authority as prescribed in Decision no. 6/2015,* it is stated that Siminn enjoys substantial dominance on potential markets for bundles of electronic communications and TV service (particularly triple play). It is stated in that Decision that Sýn is however the only party that offers a bundle that is a four play. There is clearly oligopoly in this field and the Siminn share has been about twofold or threefold compared to other competitors during the years 2016 to 2022 as is stated in the above Decision by the SE.

[352] There is further discussion on bundles in CA Decision no. 24/2023, *Síminn hf. request for revision of the Settlement between the company and the Competition Authority as prescribed in Decision no. 6/2015*.

1507. The main Mila customer on the retail market for electronic communications services is Siminn, which has offered home phone, Internet and TV service in a bundle with what the company calls its Heimilispakki. Siminn began offering Heimilispakki in the autumn of 2015 and with this package it has, if anything, strengthened its position on the electronic communications market in recent years. Reference is made to Section 6.1.3.2 on the wholesale agreement between Siminn and Mila. With increased popularity of Siminn bundles on the retail market, the company's network effects have increased in the minds of consumers, which again strengthens the Mila position on the wholesale market, where vertical integration impact of the companies remains despite the sale of Mila, see discussion on vertical integration in Section 6.1.5.9 later in this document.

1508. The position of Sýn in Internet service at retail level is similar to that of Siminn with respect to product offer, but significantly weaker with respect to market share, and also weaker when it comes to mobile and fixed line telephone service. In addition to this, the company has disappeared from the bitstream market. The company offers substantial TV service with its electronic communications service in bundles and enjoys economy of scope for this reason, though less than Siminn enjoys.

1509. To a certain extent one can say that Ljósleiðarinn enjoys economy of scope because of its ownership ties with OR. There are agreements between OR and Ljósleiðarinn that OR handle a large part of the necessary support services for the operation of Ljósleiðarinn, for example all the company's invoicing is handled by OR along with a large part of its book-keeping. Ljósleiðarinn also has access to facilities in OR buildings in its utility territory. Ljósleiðarinn thus enjoys economy of scope to an extent that is not available to companies other than Mila at such a scale. Reference is made to Sections 6.1.3.3, 6.1.3.4 and 6.1.3.7 on the wholesale agreements between Ljósleiðarinn and Siminn, Sýn and Nova.

1510. There is nothing to indicate that other network operators enjoy economy of scope on wholesale markets to any extent as they are much smaller and generally limited to specific urban areas or rural areas in the countryside.

1511. ECOI considers that most economy of scope exists in Mila's electronic communications services, which newer companies on the market do not enjoy to the same degree. As is clear from the above discussion, Mila is the infrastructure company that operates in most fields of electronic communications service. This particularly applies after the transfer of systems from Siminn to Mila in the run-up to the Siminn sale of Mila to Ardian. This applies even if the purchase by Ljósleiðarinn of the Sýn trunk line network, is taken into account. The above specified purchase by Ljósleiðarinn is mainly intended to service two of eight fibre threads in the NATO fibre cable which lies around Iceland to the West Fjords, to which the Ministry of Foreign Affairs granted the company use of on 30 June 2022. Of the above specified eight fibre threads in the NATO cable, five are owned by Mila.[353] Despite the Ljósleiðarinn use of two threads in the NATO cable, Mila economy of scope in service offer over trunk line and local loop networks is significantly more than that of other companies in this country. Of the companies that enjoy economy of scope, Mila is much larger and has more scope in its offer

[353] See news item from Ministry of Foreign Affairs: https://www.stjornarradid.is/efst-a-baugi/frettir/stok-frett/2022/07/01/Samid-um-hagnytingu-ljosleidarathrada/.

in the field of electronic communications services at wholesale level than other companies, and in addition to this the company operates a mobile phone distribution system.

1512. ECOI therefore believes that even though other companies enjoy economy of scale and network effects to some degree, they are not equal and for this reason it is only the Mila economy of scope and network effects that are considered to constitute a potential entry barrier.

6.1.5.6 Access to capital

1513. Access to capital can have a deciding influence on the possibilities for a company on a competitive market. This is particularly the case if substantial initial investments are required. Financially strong companies with good access to capital, other things being equal, are in a better position and can more easily protect themselves from competition than comparable companies that do not have as good access to capital.

1514. The difference between companies, with respect to access to capital could constitute an entry barrier. Good access to capital can both constitute an entry barrier and can indicate market power.

1515. Conditions on financial markets have improved significantly from 2008 when the international financial recession occurred and when the financial recession in this country was particularly difficult and had an impact on all employment in the country. Siminn, Mila, Sýn and Ljósleiðarinn have all gone through recapitalisation, subsequent to the bank crash of 2008 and one can therefore say that their financial strength has increased in recent years. The operational environment of the companies has nevertheless started to deteriorate since the middle of 2021, as inflation has increased, and the companies are struggling with high interest rates. Finance costs can therefore increase significantly in companies with a high level of debt and the high interest rates can also lead to the companies' decreasing investments.

1516. Access to capital has in general become less constrained for companies on the electronic communications market with an improving economic situation in recent years and one can for example note that subsequent to the Siminn sale of Mila to Ardian France SA, the company refinanced a Mila long term loan with an ISK 6 billion loan, and with an ISK 2 billion credit line. Mila refinanced the company's long-term loan in 2021, where the long-term loan from Siminn to Mila was settled and a new loan taken for the amount of ISK 20 billion. After the sale of Mila to Ardian France SA, the company was again refinanced where the company's long-term loan was settled and a new loan taken from the owner of the company, i.e. Ardian France SA. The owners of Mila have also announced in the media[354] that the company plans rapid development of electronic communications infrastructure in this country and that it will set aside approximately ISK 30 billion for this purpose during the next five years. The objective is for 5G electronic communications systems to cover 90% of the country within five years and emphasis will be placed on deploying fibre in rural areas.

1517. Ljósleiðarinn is now working on preparations for increasing company share capital, which will in all likelihood be sold to new shareholders and it will among other things be used

[354] https://www.mbl.is/frettir/burdargrein/2022/09/17/fjarfesta_fyrir_30_milljarda/.

to change the company's financial structure, which will include reducing debt, and also development of a new round Iceland cable. Vodafone (now Sýn) funded the purchase of specified assets of 365 miðlar hf. with a long-term loan to the amount of ISK 4.7 billion in 2017.

1518. On 28 February 2024, Ljósleiðarinn sent a notification[355] to Nasdaq Iceland concerning the company's annual statement for 2023 entitled "Temporary slowdown on Ljósleiðarinn investments". The notification states among other things but there will be a slackening in Ljósleiðarinn investments until results are in hand from the company's share capital increase, as the company was operated with an ISK 570 million deficit in 2023 compared with a loss of ISK 87 million for the year before that. Company revenue increased by 13% year-on-year and reached ISK 4.3 billion in 2023; company assets were a little over ISK 37 billion the equity ratio at the turn of year was 34.7%.

1519. According to the notification, there is authorisation from Orkuveita Reykjavíkur, which is the owner of the company, to increase share capital, the sale of which is in force until the end of 2024 and Ljósleiðarinn has held promotional meetings with domestic and foreign investors on the market. The Ljósleiðarinn increase in share capital is intended to strengthen the company's financial position in connection with investment in Sýn trunk line network and with continuing deployment.

1520. In the company's annual statement for the year 2023, it is stated in the endorsement by independent accountants under item "comment" that without making a reservation on their opinion, the company accountants wish to draw attention to the board's report and to note no. 20 on the company's operational capacity. In note no. 20 in the company's annual statement, it is stated among other things that management has submitted plans that allow for growth in the near future which means that it is therefore clear that the company needs new capital to support the growth anticipated by management. The company is now working on gaining new shareholders and if this work is delayed, the parent company will increase its share in the company at market price and thus ensure continuity of operations.

1521. There is therefore considerable uncertainty about Ljósleiðarinn plans for development in the near future subsequent to the company publishing annual accounts review for the year 2023 and to the comments from its accountants to the information provided in note no. 20 on the company's operational capacity. This information therefore confirms the ECOI assessment used as grounds in its market analysis, with respect to Ljósleiðarinn plans, to the effect that the company's deployment plans are subject to considerable uncertainty. Because of this uncertainty, certain caution has to be exercised when the Ljósleiðarinn position in the near future is predicted, with respect to the company's deployment plans and to access to capital.

1522.It is a very expensive measure to deploy a network as extensive as the local loop network and bitstream system owned by Mila today. The same can be said about an access network comparable to what Ljósleiðarinn operates today. The Míla local loop network was built to a large extent during the period of monopoly and state control, particularly the copper

[355] https://www.globenewswire.com/news-release/2024/02/28/2837052/0/is/T%C3%ADmabundi%C3%B0-h%C3%A6gt-%C3%A1-fj%C3%A1rfestingum-Lj%C3%B3slei%C3%B0arans.html

network. The development of the Ljósleiðarinn network is mostly completed in the OR utilities' territory, though it could become denser in some areas. Increasing population density and the community's increased need for electronic communications service are factors in this development. Ljósleiðarinn is involved in projects for the enlargement of its deployment area, as is stated in Section 5.5.2.2 on the deployment of networks. Ljósleiðarinn also plans to develop service across the country through connections on the NATO round Iceland cable. A Ljósleiðarinn share offer has been in preparation for some time where Ljósleiðarinn plans to use new share capital among other things to pay off a loan for deployment of the company's round Iceland cable. The CA investigation of the merger related to the Ljósleiðarinn purchase of the Sýn trunk line network in December 2022 was closed at the end of September 2023. It is difficult for ECOI to predict the result of a planned share offer, including the interest that investors will show, as only a minority of shares will be offered, while the majority will remain in public ownership. A change of CEO at Ljósleiðarinn happened recently, where the new CEO took over 1 October 2023. This means that there is considerable uncertainty around Ljósleiðarinn and about the company's future plans at this moment in time.

1523. Tengir in Akureyri has and still is deploying fibre network in Eyjafjörður area and more widely in North Iceland, but this deployment is proportionately less advanced than in the Capital City Area. It is clear that access to capital for deploying access network will continue to be a competitive barrier because of the high investment costs, as can be expected, particularly in more sparsely populated communities.

1524. Finance for new investments is more easily available to operating companies that have a proven track record in deployment and operation of networks, and one can assume that lenders will require at least 35% on funding and other conditions. It requires considerable capital to deploy an access network and bitstream system comparable to that which Mila owns or with the network that Ljósleiðarinn has already deployed, and in addition to this, it would take many years to deploy such networks. In order to do this, access to capital is necessary. In addition to this, it must be considered extremely unlikely that there are financial grounds for more than two fibre networks or bitstream systems in this country in any given area, and at some locations for more than one. An important issue with respect to financing a local loop network and bitstream system is that such finance needs to be very long-term, as electronic communications networks and bitstream systems require an extended period of time to repay capital outlay. This increases the importance of companies having easy access to capital and/or have already financed projects.

1525. One must however note that as has been previously stated, it is not necessary to have a local loop network and bitstream system with national coverage to operate on this market. It is also a fact that if one looks at the network operators that have entered the local loop market or bitstream market in recent years, none of them aims to operate a network with national coverage, except possibly Ljósleiðarinn, though ECOI considers there to be not much likelihood that this will be realised in the lifetime of this analysis. Network operators are even related to relevant utility companies that see an advantage in connecting their market territory with fibre. The same applies to individual municipalities.

1526. It is however clear that in order to be viable on the relevant market, a company needs to have significant market share and thus coverage on a local loop network and bitstream

system. Companies other than Mila, Ljósleiðarinn and Tengir have very limited coverage and their joint market share is only just under 3% of the local loop market and about 3.5% if one only considers fibre local loops, and in addition to this Mila has been purchasing many such networks in recent times or ensured long-time control over them. Mila has also taken over the operation of more such networks where the company operates a bitstream system. In order to reach more users a company has to develop a wider and larger local loop network and bitstream system than smaller companies currently have, and this requires access to capital. Companies other than Mila, Ljósleiðarinn and Tengir have very limited bitstream service and their joint market share is only just under 1.5% of the bitstream market and just over 1.5% if one only considers bitstream over fibre local loops.

1527. In the opinion of ECOI it is extremely unlikely that there could be financial grounds for more than two fibre networks or bitstream systems in this country if one takes into account investments in fixed operational assets of the past years, which to a significant extent are attributed to fibre local loops and related equipment, including bitstream equipment.

1528. For the above reasons, it is ECOI's belief that because deploying access networks and bitstream systems requires such substantial financing that access to capital is an entry barrier for new companies on this market. One must consider that Mila and Ljósleiðarinn enjoy an advantage in this respect over their competitors on the relevant markets.

6.1.5.7 Barriers to expansion

1529. A market with significant potential for growth is much more attractive to new operators than a stagnant (mature) market. It is probable that undertakings contemplating entry into a stagnant market must mostly lure customers away from established operators. Where there are limits to a market's potential to grow and to offer more extensive services than those existing on the market, entry barriers may exist.

1530. Copper local loops have already been deployed to almost every single residence and company in the country and bitstream systems with national coverage on copper local loops which severely limit the market's growth potential as all significant entry for new companies must be directed at competing with the existing bitstream systems and with companies such as Ljósleiðarinn, Tengir, Snerpa and Austurljós, though to a lesser degree. The growth possibilities available on the wholesale market of us first and foremost in bitstream systems on fibre networks in those areas where there are only copper lines are in place. Mila has been expanding its fibre system significantly during the past years as has previously been stated.

1531. The growth, which has been in broadband roll-out in past years, is in the development of bitstream systems on fibre local loops. The Mila fibre network was at the end of 2022 connected to about 120,000 homes in the country and the largest part of this is in the Ljósleiðarinn operational territory. It is therefore clear that Mila will, during the lifetime of the analysis, continue to conduct very vigorous fibre deployment. Ljósleiðarinn had at the same time deployed a similar number of fibre local loops as Mila, but they are limited to the Southwest corner of the country. Ljósleiðarinn plans for further fibre deployment appear rather smaller in scope than Mila plans. Ljósleiðarinn appears at this point in time to mainly be involved in joint fibre projects with Mila, such as in Reykjanesbær, Sveitarfélagið Árborg and and in Vík í Mýrdal in Mýrdalshreppur and then Kirkjubæjarklaustur in Skaftárhreppur in

South Iceland. Tengir has modest plans for increasing connections in its operational territory. The same can be said for the Snerpa fibre network in the West Fjords and of Austurljós in Egilsstaðir and neighbouring area in East Iceland. Eygló in Vestmannaeyjabær, a company owned by the municipality, has commenced fibre deployment across the whole municipality, which will take three years.

1532. About 50 small local fibre access networks have been deployed with state aid (Telecommunications Fund). The project covered a total of 6,300 addresses and in 2023 there were only a few tens of addresses that remain to be connected, so the project is to all intents and purposes completed. The municipalities in question have in the most cases made an agreement with a specific electronic communications company, Mila in the large majority of instances, to operate bitstream equipment, such that the service provider can provide service for the end users in question. ECOI considers that there is a likelihood that Mila will strengthen its position on such networks during the lifetime of the analysis. Ljósleiðarinn has purchased a network in Mýrdalshreppur and can, with its access to the NATO round Iceland cable, have increased opportunities for growth with such involvement in smaller networks in the countryside.

1533. Extensive deployment of bitstream systems on fibre local loops in the most densely populated areas has a very significant impact on growth potential for local companies. It must be considered almost impossible for other companies to see an advantage in deploying local loops to residences and companies as such service is already on offer on fibre and copper local loops, not to mention areas where dual fibre systems exist.

1534. The existence of older bitstream systems means that the installation of new bitstream systems will always need to compete with the existing ones. In the light of substitutability between bitstream service on copper local loops and fibre local loops, this significantly impairs new and smaller companies' possibilities for growth on the relevant wholesale markets.

1535. It is the ECOI conclusion that growth possibilities in the field of deployment and operation of local loop and bitstream systems are limited and that the lack of growth possibilities is likely to act as a barrier for new and smaller companies on the relevant market.

6.1.5.8 Developed Sales and service systems

1536. Well-developed service systems can act as an entry barrier for new parties and as a competitive advantage. This particularly applies on markets where substantial costs are tied up in the development of distribution and sales systems or where all the companies have made exclusive agreements with the largest and/or most important distribution parties on the market.

1537. Service systems can represent a large investment for new companies that would like to establish themselves on a given market. The presence of established operators that have perhaps mostly written off their expenses can represent an entry barrier for new operators. Companies that have efficient service systems at their disposal can therefore have a competitive advantage over new market participants.

1538. Investment in service and information systems is not directly proportional to its number of customers or to its total sales but this investment expense is proportionally higher per customer in smaller companies. Therefore, an investment in an efficient service system represents economy of scale. Older companies have for example developed service systems and line book-keeping over a period of many years and decades, while new companies must develop such systems from the ground up.

1539. Efficient service systems are the foundation on which customer services rest, as customers normally communicate with the company through its service systems. It is through the service systems that sales are registered, ordered, activated and the charges collected through invoicing. It is difficult to see how a company can maintain reliable operations and a sufficiently high level of service to build up a convincing position on a service market without such systems.

1540. During past decades, and while the company was owned by Siminn, Mila developed service system and line book-keeping that was useful for the company. One must assume that Mila could continue to use the order- and invoicing system that was developed within the Siminn Group and its experience of maintaining and expanding such systems.

1541. At the same time one can say that Ljósleiðarinn benefits from being related to OR and from having access to its service systems. The same can be said about Sýn, but that company does not operate on the relevant wholesale markets anymore. One must consider that Tengir enjoys a well-developed service system, though its economy of scale is less than the service systems of Mila and Ljósleiðarinn. It must be considered unlikely that other companies that have commenced deployment of their fibre and bitstream service and companies that plan operations on the relevant market have the same access to such developed service systems that these larger companies have.

1542. In the opinion of ECOI, investment in service systems can represent an entry barrier for smaller electronic communications companies on the relevant wholesale markets, and for new companies.

6.1.5.9 Vertical integration

1543. Vertical integration exists where the same party operates on more than one production and/or sales level, for example he manufactures goods, sells them to another party in wholesale and also sells the goods himself at retail level. A company that integrates varying operations in this manner in the value-added chain can by virtue of its position on the wholesale or retail markets, erect barriers to competition on the market in order to strengthen its position against competitors.

1544. Vertical integration from the point of view of an electronic communications company has certain advantages as the company can combine all the services in question under one umbrella and for example use the same service systems for both the wholesale and retail parts. In addition to this, a company with vertical integration can relatively easily discriminate against competitors on the retail market because of its position on the wholesale market or make it difficult for competitors on the relevant wholesale markets, for example, when it does not offer its retail service on the networks of its competitors at wholesale level. Such retail

service can be in the form of electronic communications service, TV service or bundles of such services.

1545. Though subsequent to the Siminn sale of Mila, the company, for the most part, only operates in wholesale service, while Siminn operates both in wholesale and retail service, this does not change the fact that Mila will continue to be Siminn's main supplier for an extended period of time and will also be Siminn's only supplier for certain types of service. At the beginning of 2021, the largest part of that wholesale service remaining at Siminn, subsequent to the Settlement with the CA in 2013, which was reviewed 2015, was transferred to Mila, such as the IP-MPLS network, the Internet gateway, international gateway and the RAN part of the mobile network. Siminn is by far Mila's largest customer as sales to Siminn represent over 70% of Mila's total revenue on average in recent years.

1546. In CA Decision no. 16/2023, *Ardian purchase of all Mila ehf. share capital from Siminn,* the following is stated in paragraph 4.5 in the Decision text, regarding the Siminn obligation to purchase wholesale service from Mila:

> *a) "Siminn is only obliged to purchase 80% of its wholesale needs for broadband connections to residences, on the one hand for local loop lease and on the other for bitstream service, over fibre connections or xDSL copper connections, in total, from Mila. With this arrangement, Siminn has full freedom to direct business to Mila competitors with respect to other and remaining total needs of the company.*
>
> *b) After five years, Siminn is only obliged to purchase 80% of its total need for data transfer over leased lines for Mila fixed line service. This covers both terminating segments and trunk line segments, see more specifically in items a and b of Article 7 of the Settlement. When this arrangement has come into force, Siminn has full freedom to direct business to Mila competitors with respect to other and remaining total needs of the company."*

1547. The wholesale agreement initially constituted a comprehensive exclusive right for Mila to provide Siminn with all the wholesale service that Siminn required in order to be able to sell electronic communications service in retail on the relevant retail market for an extended period of time. The Mila exclusivity right was limited to 80% in the above specified CA decision, which must however be considered a significant proportion of the company's total needs on the relevant wholesale markets. With the above specified Siminn obligations, vertical integration in the commercial relationship of the company with Mila is retained to a significant degree. Today Siminn purchases approximately [...]% of its bitstream service in fixed line networks from Mila, and the remainder from Ljósleiðarinn. According to data from electronic communications companies, it comes to light that Siminn has not purchased such service from Tengir, except to a very limited degree, despite the fact that Tengir has repeatedly sought such business with Siminn [...]. According to the above, Siminn has only about 10% latitude to purchase from parties other than Mila, during the coming 13-14 years, at least.

1548. In the case of the Ljósleiðarinn fibre local loops, vertical integration is even greater regarding the relevant wholesale market. Ljósleiðarinn actually does not sell access to other electronic communications companies to its own local loops but only to bitstream. This is an

instance of almost entirely internal sales on the relevant wholesale markets where the difference between local loops and bitstream is not particularly distinct to outside parties. Customers can generally not purchase access to local loops alone but must also purchase access to bitstream. This is however not always the case as companies have received access to dark fibre on the corporate market, but companies that lease local loops from Ljósleiðarinn are relatively few. Tengir is also a vertically integrated company in the same manner with respect to use of its own local loops for its bitstream service, while the largest number of Tengir local loops are however delivered to Mila as dark fibre on which Mila builds an extensive GPON bitstream service in the Tengir operational territory.

1549. Snerpa and Austurljós are actually the only electronic communications companies that operate on the relevant wholesale markets and related retail market (to some extent) and are therefore deemed to be purely vertically integrated electronic communications companies as Snerpa and Austurljós use their own local loops and bitstream service for their retail services. But this is a case of local operators. Snerpa operates in part of the West Fjords and is very small in comparison with Mila and Ljósleiðarinn and actually also in comparison with Tengir. Austurljós operates in East Iceland is an even smaller company, with staff of only 4, i.e. an owner/manager, a technician and two service staff.

1550. ECOI considers that the characteristics of vertical integration on the relevant markets in this case are likely to continue to be a source of entry barriers for new companies to the market, despite the Siminn sale of Mila in 2022 which was completed with a Settlement, see the above specified CA Decision no. 16/2023. In the CA Settlement with Ardian from 15 September 2022[356] there were limitations imposed on the Mila monopoly to transact with Siminn, as previously described in the words of the CA Decision in the merger case. The Settlement in question limits to some extent the vertical integration between Mila and Siminn, but it remains that Siminn is obliged to purchase at least 80% of the company's total needs from Mila on the relevant wholesale markets. In the opinion of ECOI, the obligation has the characteristics of vertical integration, as it limits to a significant degree the commercial freedom of Siminn and thus competition from current and potential Mila competitors.

1551. In the CA Decision no. 24/2023, request by Siminn hf. for review of the Settlement between the company and the Competition Authority from 2015, which is stated in CA Decision no. 6/2015, the among other things, discusses vertical integration between Siminn and Mila, subsequent to the sale of Mila by Siminn. On the subject of the above, the following is stated in the above specified CA Decision:

- *"As is argued here above in Section 3, Siminn still has a significantly strong position on important markets in this case. On most of the markets on which Siminn operates, its share is high compared with other competitors. In other areas, i.e. in voice telephony, Internet connections, in parts of TV markets, bundles markets and in the sale of Siminn Sport/English football, Siminn share was the highest and, in most instances, twice or three times that of the nearest competitor. In subscription TV, Siminn has the second-highest share, where Sýn*

[356] See Ardian settlement with the Competition Authority: https://www.samkeppni.is/media/almennar-myndir/Ardian-Mila-SE-satt-150922.pdf.

share is higher. On the mobile phone market, Siminn share is similar to the Nova share.

- *Case data indicates that the current shared interests of Siminn and Mila to at least a certain degree exhibit the characteristics of vertical integration, see further discussion in section 4 here above. The effects of this on the infrastructure market were counteracted with conditions imposed on wholesale agreements and on Mila conduct in the future. Having taken into account submitted data and views in this case, the Commission Authority considers it important to protect competition on the retail and as appropriate wholesale markets in an analogous manner."*

1552. In the above CA Decision no. 24/2023, the conclusion was reached that it was not timely to conclude that vertical integration still prevailed between Siminn and Mila despite the severance of ownership ties between the companies and despite the sale of the company to Ardian, see the following decision of the CA:

> *"Despite the sale of Mila and that the direct ownership relationship between the two companies has been severed, a wide-reaching wholesale agreement was still in force between Siminn and Mila, and this is discussed in detail in the Decision no. 16/2023. In the opinion of CA, these agreements constitute a strong connection of interests between the companies that could manifest themselves in various ways. It was therefore at a minimum, not timely is assert that the impact of vertical integration no longer existed."*

1553. With all of the above in mind, it is the assessment of ECOI that it is not timely to assert that connections of interests that may be equated with vertical in integration no longer prevail on the relevant wholesale markets in this analysis, that can limit possible competition at wholesale level during the lifetime of the analysis. Mila is also vertically integrated on all or most levels of the value chain of electronic communications service, and competitors, partners or other electronic communications companies are to a large degree dependent on Mila on the relevant wholesale markets of this analysis as previously stated. Ljósleiðarinn vertical integration is possibly even greater with respect to the relevant wholesale markets as Ljósleiðarinn in reality does not sell other electronic communications companies access to its own local loops, but rather to bitstream. Tengir is also a vertically integrated company in the same manner with respect to use of its own local loops for its own bitstream service. Snerpa is a vertically integrated company, but it is a small local company. The same can be said about Austurljós, which is even smaller company than Snerpa.

6.1.5.10 Conclusions concerning entry barriers in the relevant markets

1554. In Section 6.5.1, entry barriers were discussed, where an entry barrier is a synonym for various elements that have an impact on companies' market power. The entry barriers can on the one hand result from cost or demand conditions that create asymmetric competitive conditions between operating parties and new parties, that hinder or prevent the entry of new parties to a market. On the other hand, there are entry barriers that are not based on economic reasons, but that result rather from legislation or administrative practices or case

law that have a direct impact on access conditions and/or the position of operators on the relevant market. A conclusion on assessment of significant market power hinges, among other things on how easy it is to enter a relevant market, see Article 20 of the Regulation on market analysis in the field of electronic communications. It is therefore important that ECOI assesses those entry barriers that are in place on the relevant markets and assesses the extent to which they hinder active competition. By the nature of things, entry barriers to electronic communications markets are often substantial, for example as a result of technical barriers or where access to a market requires large investment in infrastructure that can take a long time to prove profitable.

1555. Companies enjoy economies of scope when they can save costs through increased efficiency that results from manufacture, distribution and selling of two or more products instead of one. This economy can for example be in sharing of procurements and manufacturing equipment. When a company that is already established on a market enjoys economy of scope (particularly if it has a significant market share), this can constitute an entry barrier for new competitors, then intend to enter the market and manufacture, for example just one product. Even though the cost structure is as efficient as it is possible to achieve, they hardly achieve the same economies as the company that is incumbent and the produces a greater number of products. In this connection one takes, among other things, into account various entry barriers and the scope of electronic communications networks, including on the relevant markets in this analysis. Sales and marketing systems are also important, and whether the electronic communications company in question can offer the same customers varied service because of access to a broad product offer, i.e. economy of scope, etc. are taken into account.

1556. As is clear from the above discussion, Mila is the infrastructure company that operates in most fields of wholesale electronic communications service. This particularly applies, subsequent to the transfer of the systems in question from Siminn to Mila, as explained above. More specifically, Mila service constitutes local loop lease on copper and fibre and also data transfer over local loops, including bitstream service and leased line service. Mila has a trunk line network with national coverage which comprises five threads of eight from what is called the NATO fibre cable and from that cable, there are leased lines to inhabited regions and local loops to residences, companies and institutions all across the country. With the transfer of Siminn systems, to Mila, the company increased its service offer significantly. This refers mainly to IP-MPLS data transfer network (Multi-Protocol Label Switching) and to the mobile phone distribution system (Radio Access Network, RAN) and also to the service related to these systems, including Internet service (Internet gateway). In addition to this, Mila operates passive and active mobile phone infrastructure at many locations in the country.

1557. Ljósleiðarinn has also its own fibre trunk line network which lies from Reykjavík to municipalities in Suðurnes and east to Landeyjasandur through Hveragerði, Selfoss, Þorlákshöfn, Hvolsvöllur and to the Westman Islands. Also, from Reykjavík in a north-westerly direction to Akranes, Borgarnes, Hvanneyri and Bifröst. The Ljósleiðarinn access network reached about 71% of residences and companies in the country at the end of 2022. That company only operates an access network and system, i.e. wholesale fibre local loops and the accompanying bitstream access in the Capital City Area and in the neighbouring inhabited regions in question. Ljósleiðarinn has thus not operated in other fields of electronic

communications up to this point in time. CA has endorsed the Ljósleiðarinn purchase of the Sýn trunk line network, where this purchase will be used by Ljósleiðarinn to support its expected service offer with the use of two threads in the NATO cable that were allocated to the company on 30 June 2022, as stated above. Ljósleiðarinn has thus not enjoyed the same economies of scope as Mila in infrastructure service.

1558. It must be considered clear that if the company intends to enter the relevant market and develop service on its own local loop and/or bitstream system, then it needs to develop facilities that are difficult to duplicate. It is not only necessary to incur substantial costs in developing a distribution system and infrastructure, as in addition to this it is extremely important to find space for hosting the company's equipment, particularly for interconnection of its own equipment with networks and systems of other parties. This applies both to rural areas and also urban areas where Mila has provided access to facilities that according to the company is not in short supply at this point in time. It is worth pointing out for example that Sýn has been withdrawing from operating its own bitstream system in favour of purchasing bitstream access from Mila, Ljósleiðarinn and Tengir. Sýn, which is the second largest player on the retail market for broadband service has thus been descending the investment ladder. In the same way, Siminn has significantly wound down its service at wholesale level with the transfer of electronic communications systems to Mila in the run-up to the Siminn sale of Mila to Ardian as previously stated. Instead, Siminn purchases the relevant wholesale access almost exclusively from Mila and this transfer of systems has strengthened the Mila position at wholesale level. Control of infrastructure is therefore considered to be a significant entry barrier in the opinion of ECOI.

1559. Shortage of facilities at Mila is not normally a problem today according to the company, and in addition to this, available space will increase with the decommissioning of the voice telephony system, that is now being finished. For this reason, lack of facilities in premises is not considered to be a barrier to competition, given that obligations on access to the premises are in place, but this could be an access barrier if obligations were not in place.

1560. For new companies planning to deploy their own local loop and/or bitstream system, one must consider that sunk costs from the investment represent a significant entry barrier. This particularly applies at locations where more than one system has already been deployed on the pre-existing fibre and copper local loops, and also at many locations in rural areas where there is only one fixed line network in place, particularly where the is a fibre network.

1561. Mila enjoys economies of scale and scope that competitors cannot foreseeably match during the lifetime of the analysis. It is inevitable that new companies on the market would find it difficult to compete under such circumstances and this creates a significant barrier to entry.

1562. ECOI considers that access to capital will always be a limiting factor because of how costly and time-consuming it is to enter and become a significant participant on the bitstream market. Access to capital is therefore considered to be a significant entry barrier to the relevant market.

1563. It is the opinion of ECOI that possibilities for growth have lessened significantly in recent years on the relevant market and that they will be meagre during the lifetime of this

analysis. This is among other things because of how widespread the fibre connections are in the most populous and densely built-up communities.

1564. The extensive service systems of Mila and Ljósleiðarinn can give the companies an advantage over new, smaller companies and require analogous systems in these companies.

1565. It is clear from the discussion that vertical integration has specific advantages for electronic communications companies where the company can combine all the services in question under one umbrella and for example use the same service systems for both the wholesale and retail elements. In the same way, a company with vertical integration can discriminate against competitors on the retail market because of its position on the wholesale market or make it difficult for competitors on the relevant wholesale markets, for example, when it does not offer its retail service on the networks of its competitors at wholesale level. In Section 6.1.5.9 it is considered that although subsequent to the Siminn sale of Mila, the latter, for the most part, only operates in wholesale service, while Siminn operates both in wholesale and retail service, this does not change the fact that Mila will continue to be Siminn's main supplier for an extended period and will also be Siminn's only supplier for certain types of service. It was also taken into consideration that in the CA Decision no. 24/2023, the conclusion was reached that it was not timely to conclude that vertical integration still prevailed between Siminn and Mila despite the severance of ownership ties between the companies.

1566. ECOI considers that one can discern the characteristics of vertical integration between Mila and Siminn, that is likely to continue to be a form of entry barrier for new companies to the market, despite the Siminn sale of Míla in 2022, which was completed with a Settlement. It is established that with the Ardian Settlement with CA from 15 September 2022, limitations were imposed on the Mila exclusive right to transact with Siminn. The vertical integration between Mila and Siminn was to some extent mitigated, but it remains that Siminn is nevertheless obliged to purchase at least 80% of the company's total needs from Mila on the relevant wholesale markets. The obligation has in the opinion of ECOI, the characteristics of vertical integration, as it limits to a significant degree the commercial freedom of Siminn and thus competition from current and potential Mila competitors. All of the above leads to the ECOI view that commercial connections and the wholesale agreement that the company made with Siminn when selling the company to Ardian, manifests characteristics of vertical integration, at least in part, and as previously stated, and those connections constitute to some degree an entry barrier.

1567. It should be noted that entry barriers are lower for companies that plan small local deployment. A number of municipalities and/or companies have deployed access networks with state aid and are already operating in the countryside. Such networks are mostly owned by local municipalities and/or utility companies and to a limited extent have been developed on competitive grounds, rather as community projects, among other things for the purpose of supporting regional development. This aside, Mila has been purchasing many of them in recent times, leasing them long-term or at least providing bitstream service over them. These local loop networks will however never have a significant impact on the wholesale market in question, except possibly on a very local basis and in addition to this they will not enjoy economies of scale or scope. In addition to this, the smallest networks do not operate bitstream systems but rather make a general agreement with an active electronic

communications company on that, and then usually with Mila. Currently, about 6,300 addresses have been connected through the project “Iceland Digital Connected”, in the most rural areas, while the remaining tens of connections of the project (which commenced 2016) was to be completed in 2023. This represents about 4% of connected spaces in the country. Mila has now gained control over a considerable proportion of those spaces. ECOI believes that the entry of smaller companies in sparsely populated communities does not have significant impact on the market as a whole.

1568. With the above in mind, ECOI concludes that barriers exist for new companies entering the relevant wholesale markets, which strengthen the position of Mila and Ljósleiðarinn on the relevant market, and also to some extent of Tengir, Austurljós and Snerpa in their operating territories.

6.1.6 Competition problems on the market in question

1569. The main objective of the market analysis is to investigate whether competition is active on electronic communications markets and to react to this with appropriate measures should it prove not to be the case.

1570. In the analysis of the wholesale market for local access with fixed connection (market 3a) for central access with a fixed line connection for mass-market products (market 3b) one can identify five factors that decide long-term profitability of companies. These factors are:

1) Countervailing buying power of purchasers with a strong position.

2) Product diversification/bundling.

3) Potential competition.

4) Pressure from substitute products.

5) Customer choice and potential costs of switching or amending commercial obligations.

6.1.6.1 Customer countervailing buying power

1571. Buyers with a strong negotiating position can influence competition and can limit sellers' possibilities to operate without taking into consideration competitors and customers. A strong negotiating position exists primarily when a customer buys a large portion of an operator’s production, is well informed of other offerings, can switch to another operator without significant expense and even has the potential to commence production of a comparable product/service.

1572. When it is kept in mind that Siminn is the largest lessee of Mila bitstream access it is unlikely that other smaller lessees can constrain to any significant degree Mila’s possibilities to operate without taking its customers into consideration (other than Siminn) to a greater or lesser degree. With respect to the retail market and to users, large users, that is to say those that have many local loops into a building, have a certain countervailing buying power which possibly affords them a discount from the normal retail price. On the other hand, Mila is not to any significant degree dependent on companies on the retail market because Siminn is the

company's largest customer with about [...]% of Mila revenue coming from Siminn, and this diminishes the countervailing buying power of other customers.

1573. Ljósleiðarinn generally does not offer other parties' direct access to its local loops, except to a limited extent on the corporate market, but owns itself all the equipment that is connected to the local loops and sells access to bitstream. The company thus operates almost exclusively on the wholesale market for bitstream access. Ljósleiðarinn hardly operates on the retail market for electronic communications services, apart from selling occasional corporate connections to its network. The company had about 45% market share with reference to the number of bitstream connections at the end of 2022 at national level against 52% for Mila. For some considerable time, Ljósleiðarinn sold connections to its fibre system directly to consumers without any other service, but now this is done through service providers who service the users in question on the Ljósleiðarinn system. The company therefore no longer has direct transactions with residential users in this regard, as do, for example, Tengir and Snerpa.

1574. It is clear that a customer only has significant countervailing buying power when he has the possibility of dealing with another party for lease of local loop and/or bitstream access or has built such systems itself. This is however not possible in large regions of the country in the current situation, or it is at least not profitable.

1575. The relevant wholesale markets in this country are characterised by binding long-term wholesale agreements, as between Siminn and Mila, subsequent to the sale of Mila to Ardian, as previously stated, where Siminn is by far the largest purchaser of Mila bitstream access. There is now a long-term agreement between Sýn and Ljósleiðarinn subsequent to CA endorsing the merger, in connection with the Ljósleiðarinn purchase of Sýn electronic communications networks at the end of September 2023. The binding there is however less, and in addition to this, Sýn has a much smaller share of the retail market than Siminn. Countervailing buying power of a purchaser with such a large share, like Siminn, in a seller's wholesale would under normal circumstances be considered very substantial. One must therefore take into account the commercial connections between Siminn and Mila and the fact that the wholesale agreement between Mila and Siminn covers up to 80% of Siminn needs for service at wholesale level, but is in fact a higher percentage today, which undeniably limits the possibilities of competition from Mila competitors at wholesale level. Such a large share of total Siminn wholesale needs is bound to Mila, undeniably links the interests of the companies at both wholesale and retail levels. It cannot be seen that countervailing buying power of purchasers, other than Siminn vis-à-vis Mila is substantial.

1576. The situation is similar with the lease of local loops at Ljósleiðarinn which almost exclusively has its own internal sales as access to local loops is generally not sold separately with that company, although there are examples of this to certain larger companies, as previously stated. Ljósleiðarinn does not operate directly on the retail market, at least not for residential connections, as Ljósleiðarinn connections are used for broadband service that parties such as Vodafone, Nova og Hringdu sell on to users. In August 2021, Siminn began to sell connections on the Ljósleiðarinn fibre network. In the opinion of ECOI, this will be to a rather small degree during the lifetime of the analysis and Siminn will continue to have the most part of its connections on the Mila local loop network.

1577. ECOI considers that Sýn countervailing buying power vis-à-vis Ljósleiðarinn has been very significant, as the majority of Sýn bitstream connections have been on Ljósleiðarinn systems where Sýn purchases about [...] of the connections sold by Ljósleiðarinn. Sýn is the second largest retailer in the country, with about 25% market share at a national level at the end of 2022, when one has taken into account the above specified mobile network solutions, and with a much greater share in the Ljósleiðarinn operational territory. Towards the end of 2022, Sýn and Ljósleiðarinn renewed the service agreement between the companies in connection with the Ljósleiðarinn purchase of Sýn electronic communications networks, where a specific minimum Sýn purchase from Ljósleiðarinn is prescribed. This is however less binding than between Siminn and Mila, and in addition to this, Sýn is a much smaller party on the retail market than Siminn. With the making of this service agreement, one considers that Sýn countervailing buying power vis-à-vis Ljósleiðarinn has decreased from what it was before.

1578. ECOI conclusion is that countervailing buying power, that is to say of electronic communications companies other than Siminn, is subject to limitations vis-à-vis Mila, because of the special position of that company resulting from the commercial relationship between Mila and Siminn and from the very substantial obligations on transactions between these companies. The large share held by Siminn in retail also generally weakens customers' positions. Sýn countervailing buying power vis-à-vis Ljósleiðarinn cannot be considered substantial after a long-term service agreement was established between the companies.

6.1.6.2 Product diversification/bundling

1579. Product diversification refers to how the consumer defines products and distinguishes between similar products. Clear product diversification in a company's offer can create fidelity in customers and can equally complicate entry for new parties into the market, contrary to what happens when the product offer is more homogeneous. Strong brand names have a comparable effect.

1580. A company that is dominant on one market can leverage its position to bundle products on that market with products on another market with offers that competitors have difficulty emulating. If competitors do not have the possibility of making comparable offers, then this strengthens the dominant position of the company on the former market and creates a competitive advantage on the latter. An advantage of this kind may need to be examined when market power on the latter market is assessed.

1581. Mila is the only electronic communications company operating on the relevant wholesale markets in this country that owns and operates a mobile phone distribution system (RAN), and in addition to this the company owns and operates the only trunk line system with national coverage in this country. The company therefore has the opportunity to bundle wholesale services in a manner that competitors on the relevant wholesale markets do not have. With the Settlement between parties to the merger which was signed in September 2022, CA endorsed the purchase of Mila by Ardian, subject to conditions. The investigation in the merger case showed the Mila ability and intention to increasingly offer combined products and services, i.e. by tying or bundling types of services that are or were normally offered individually, or were as the case may be, not previously on offer in Mila operations.

In order to counteract the damaging impact of the merger in this respect, i.e. the position enjoyed by Mila and the commercial incentives inherent in that position, parties to the agreement proposed conditions for a ban on bundling or tying that inhibited competition, and for a obligation to differentiate for almost all wholesale services/products in Mila operations. The condition constituted Mila being obliged to separate individual products in its integrated service offer and to not make it a condition to also purchase other products if a customer purchased one or more products from the company. The condition prevents Mila from leveraging its economies of scope by offering more services together and thus increasing customer fidelity with service bundles, in such a manner that company´s competitors cannot emulate.

1582. Mila has the unique position on this market to have strong connections with Siminn from the time that the companies were in common ownership and subsequently with very substantial commercial connections after their ownership connections were severed with the sale of Mila to Ardian. Síminn is ubiquitous on the market in this country and has a trademark developed over decades, for an extended period of time as a company with a monopoly in most areas of the electronic communications. In this instance Mila has a good position but one has to keep in mind that the relevant markets are wholesale markets where one can assume that the strength of a trademark is not as important as on the general consumer market.

1583. With the CA Decision no. 25/2020, the Authority came to the conclusion that Siminn had breached the provision on bundling in the Settlement between the company and the CA from 2015, by marketing English football through the Heimilispakkinn. The Appellate Committee for Competition confirmed that part of the case with ruling no. 1/2020, on 13 January 2021, but the District Court annulled this ruling with its judgement on 11 October 2022, but the case was appealed to the National Court which confirmed the judgement of the District Court on 16 February 2024. ECOI does not have information on if the judgement of the National Court has or will be appealed to the Supreme Court. In addition to the above, CA has made a Provisional Decision on 28 July 2023 related to Siminn marketing of English football, see CA Decision no. 30/2023, *Probable breach by Siminn hf. against the Competition Act - Provisional Decision.* The Siminn probable breach of the Competition Act was in its having denied Nova wholesale and distribution of Siminn Sport, which contains transmissions from the English Premier league football, i.e. English football. One could also point out that with ECOI Decision no. 10/2018, which was mainly confirmed by the judgement of the District Court of Reykjavik on 1 July 2020, the conclusion was reached that Siminn had in an unlawful manner directed the business of customers of its media provider to a related electronic communications company, i.e. Mila. The case was appealed to the National Court which confirmed the ECOI decision which was subsequently appealed to the Supreme Court which concluded that the case should be referred once again to the District Court for further material procedure because of faults in case procedure in lower court levels. Recently, the District Court of Reykjavik confirmed the initial Decision of ECOI from 2018, unless regarding the fine, and that Decision was not appealed.

1584. Siminn is Mila’s largest customer and commercial connections between the companies are substantial and close, see provision on transaction lock-in between Siminn and Mila in the wholesale agreement, subsequent to the sale of Mila to Ardian. Siminn bundling in retail service on the Mila access network strengthens Mila’s position significantly on the relevant

wholesale market and is considered to be a barrier to new parties' ability to get a foothold in the wholesale market for central access.

6.1.6.3 Potential competition

1585. In Article 21 of Regulation no. 556/2023 on market analysis in the field of electronic communications, there is discussion on potential competition during implementation of market analysis and assessment of significant market power. There it states:

> *"Substantial entry barriers are of less consequence on markets characterised by major technical advances, particularly in the case of the advent of new technology that makes it possible for parties to provide varying service that can offer competition for companies with significant market power.*
>
> *Innovation by parties that are not yet operating on electronic communications markets can create competitive pressure on electronic communications companies that are incumbent on the market. ECOI shall assess the likelihood that companies that are not active on the relevant market can in the mid-term decide to enter the market.*
>
> *ECOI shall regard companies that are in a position to switch or increase the service/production in the event of small and non-transitory price increases, as potential competitors, even though they do not produce the relevant product or offer the relevant service.*
>
> *Entry to a market is more likely when potentially new parties are already operating on related markets or provide service that is needed in order to provide the relevant retail service or substitute service on the retail market.*
>
> *The ability to achieve minimum cost efficiency level of operations can be important for assessing whether entry to a market is likely. ECOI shall take into account economies of scale and scope, network effects, the importance of access to limited resources and sunk cost in deployment of electronic communications networks.*
>
> *ECOI assesses whether market power of existing electronic communications companies can be subject to competitive pressure from products or service outside the relevant market and underlying retail market or markets, such as because of a product/service provided by providers of digital service requires that each user has access to electronic communications service or electronic communications networks but does not provide its users with access to such service itself (OTT service).*
>
> *When ECOI has deemed that competitive pressure resulting from products/service pursuant to paragraph 6 is not sufficient for active competition to be considered to prevail on the relevant retail market, or to act as indirect competitive pressure at wholesale level in the definition of the relevant product or service market, it is obligatory to assess such potential competitive pressure when assessing significant market power. One must take into account that where such parties do not offer wholesale service themselves, they do not generally exert competitive pressure on electronic communications companies at wholesale level."*

1586. Potential competition is decided by the opportunities new companies have to enter the market in the mid-term. Should they have opportunities to enter the market, this can impact tariffs and price structure of incumbent companies and can also limit their possibilities to maintain higher prices and can support innovation. If new competitors can be expected to

enter then this will lessen the tendency of incumbents to abuse their market power. It is necessary to examine this criterion from the point of view of entry barriers (see Section 6.1.5). There is normally a correlation between entry barriers and a lack of potential competition.

1587. When new companies enter a market, the reason is often that they aim to acquire incumbents' market share and profits. This risk exercises restraint on incumbents and competition to which they try to react in some way or another. One example of this is their endeavours to increase economy of scale and reduce unit costs. Increased variety in the form of quality or trademarks is also a measure to counter competition. High investment costs provide resistance, particularly where they involve reinvestment in existing assets (switching cost). In addition to this, limited access to distribution channels can be problematic for competitors, for example, a lack of their own trunk line connections between regions in the country or on economic price for access to such connections from other electronic communications companies. Companies who are the first ones on the market can often leverage their experience and knowledge as an advantage over competitors who come later. Access to resources (for example frequencies), government action and technical changes can also impact the ability and interest of new companies to commence operations.

1588. It has been stated here above that ECOI considers that a new economic and developed bitstream system would require considerable investment which would be to a great extent sunk costs. This applies even more in the case of new local loops, such as deployment of fibre networks. Particularly if the intention is to achieve economy of scale and market share on the relevant markets. Economies of scale and density that are characteristics of local loop and bitstream systems and apply particularly to the Mila access system, which has close to the national coverage, increase entry barriers for new companies and for all the companies today that operate on the local level. In the same way, access to local loops is limited.

1589. Mila have operated VDSL for many years and by using error correction vectoring technology, the company has been authorised to withdraw access to part of the local loop, as two VDSL providers cannot operate on parallel local loops as the error correction reacts to such circumstances. The obligation for VULA access to the Mila VDSL system was to resolve this limitation to access to local loops, but electronic communications companies in this country have not shown great interest in that solution, but rather first and foremost purchase bitstream access to the Mila copper system through Access Options 1 and 3. As stated above, Mila has recently been decommissioning its copper network, in parallel with vigorous fibre development, and plans to complete the decommissioning the end of 2028, were most of the effort in decommissioning will be in the last two years. As the Mila fibre network is deployed with PON topology, access to fibre local loops is difficult to implement and it cannot be seen how a new player could be provided with such access side-by-side with Mila to configure its own bitstream equipment.

1590. Ljósleiðarinn and Tengir however have developed extensive networks in their operational territories, each in the main urban nuclei of these regions. Snerpa has deployed fibre local loops in Ísafjörður, Bolungarvík and at many locations in the West Fjords; Eygló has announced plans to deploy fibre to the whole of Vestmannaeyjabær within the next 2-3 years, and Austurljós is operating in Egilsstaðir and surrounding area. There are therefore few large urban nuclei remaining where new competition can take a foothold and it is difficult to see

how more than one fibre network has the possibility of income at such locations, as is discussed in Section 6.1.5.6.

1591. ECOI concludes that there is little likelihood that new parties will enter and commence competition on the wholesale markets for local-loop or bitstream access with incumbent network operators, particularly at national level. Small local network operators concentrate rather on providing inhabitants in their areas with access to fibre where such a possibility has been highly unlikely without their intervention, rather than contemplate competing with Mila. Local networks have therefore come into existence as community projects to support regional development, and not to enter into direct competition with other electronic communications companies. Such small, local parties will generally furthermore not operate a bitstream system but generally have made an agreement with Mila, and to a lesser degree with Tengir, that those companies operate a bitstream system at that location. An opportunity could however possibly open for Ljósleiðarinn now that the company has acquired access to two threads in the NATO cable, but there is still a significant difference in position between Ljósleiðarinn and Mila with respect access to own trunk lines from the NATO cable to urban nuclei that may be tens or even hundreds of kilometres from the NATO cable in question.

1592. In addition to this there is nothing to indicate that other network solutions like wireless connections will make much difference in the near future, although it is expected that such solutions will to some extent replace fixed line connections, as is already the case.

1593. Possible competition with Mila at a national level is thus not on the horizon during the period of validity of this analysis, although Ljósleiðarinn will doubtless exert some competitive pressure on Mila in the countryside. This could also encourage Mila to speed up fibre deployment in those areas in the countryside that do not yet have fibre. Mila has already commenced fibre deployment in almost all such urban nuclei, which makes the entry of Ljósleiðarinn less likely. It is more likely that the development will continue to be such that Mila will purchase local fibre networks if they are available and increase the density of its fibre networks and bitstream systems, both in areas where others have deployed fibre and in areas where no one has yet deployed a fibre network.

6.1.6.4 Pressure from substitute products

1594. One can assume that on markets characterised by significant innovation, it is more difficult for companies to maintain and leverage their market power than on markets where there is little innovation. Technical developments that result in substitute products on the market can thus function as potential competition with incumbent companies and can weaken their dominant market position.

1595. Substitute products were discussed in Section 3 here above, which dealt with competitive conditions on related retail market. It was stated there among other things that although various kinds of new technology had entered the equation in recent years, bitstream access over copper and fibre local loops were the products that constituted the large majority among consumers. As is discussed in Section 3.2.4.1, consumers now in sufficient numbers see mobile network service over 4G/4.5G and 5G mobile networks through electricity mains

connected network routers at a fixed place of use, as substitute service for fixed line connections over fibre, cable system or copper network where VDSL equipment has been installed, and that they thus belong to the same retail market.

1596. In this country there is a widely distributed bitstream system on the Míla copper local loop network and significant development has taken place in developing bitstream systems on fibre local loops. For this reason, one can consider the relevant market to be mature in the understanding that a significant increase is not expected in the total number of local loops of the types existing today, though one can expect the development to continue where copper local loops gradually decrease and are replaced by fibre local loops. This will furthermore lead to a decline in the number of bitstream connections over copper, though, to a lesser degree than on Market 3a, as on Market 3a there is still quite a number of copper connections that are not for Internet service, such as PSTN, telephones in lifts etc., though such local loops have decreased significantly in recent years. In the opinion of ECOI, bitstream connections over copper local loops will still be in operation to a some degree throughout the lifetime of this analysis.

1597. In addition to fixed line connections, it is considered that mobile connections over 4G/4.5 G and 5G mobile networks over mains connected routers at a fixed place of use represent substitute service for fixed line connections and therefore belong to wholesale market 3b and related retail markets. They do not, however, belong to market 3a.

1598. It is the assessment of ECOI that on market 3b there is some competitive pressure from mobile network solutions, that will increasingly provide substitutability for traditional fixed line network solutions during the lifetime of the analysis. Such, on the other hand, is not the case on market 3a.

6.1.6.5 Customer freedom of choice and possible switching costs/impact of transaction lock-in

1599. If a service provider has a dominant market position, limitations or costs to consumers of switching provider company can enhance that provider's opportunities to behave without concern for the market. Such limitations can be commercial, technical or financial in nature, but they can also be a consequence of the user trusting established service providers more than new ones and being unwilling to take the risk of switching providers.

1600. One has to take into account the fact that in large areas of the country Míla is the only network operator that service providers can deal with. It is also a fact that despite the development of new bitstream systems, Míla has had its system in use since the inception of Internet use and it is thus inevitable that most service providers have taken this into account and tried to adapt their companies at the outset to access Míla's copper network, and subsequently access the company's fibre network.

1601. To replace systems in order to be able to transfer to another network, such as connecting to fibre local loops, can be costly and time-consuming. Parties to the market have to a large extent avoided this by dealing with Ljósleiðarinn, which sells them bitstream access to the fibre network, which means that the companies do not need to purchase the connection equipment needed to connect directly to their local loops. One must however

keep in mind that with this, the companies descend in the value chain and the control they have over the service they provide diminishes.

1602. ECOI believes that because of the long history and extensive Mila local loop network, both copper and fibre networks, and the bitstream system with close to national coverage that is connected both to the company's own local loops and to local loops owned by other parties such as Tengir and the large number of local networks, and as the company can even be the only company on the market in very large areas, Mila has a specific competitive advantage in this respect. One can also note that, according to the ECOI consumer survey, Siminn customers are less likely than those of other service providers to switch and vice versa, and as previously stated, the large majority of Siminn customers are on the Mila local loop network.

6.1.6.6 Summary and conclusion regarding competition on the relevant wholesale markets

1603. It is clear that the main objective of the market analysis is to investigate whether competition is active on electronic communications markets and to react to this with appropriate measures should it prove not to be the case. When assessing competition on the relevant markets, a number of varying factors were taken into account.

1604. In Section 6.1.6.1 strong countervailing buying power can influence competition and can limit sellers' possibilities to operate without taking into consideration competitors and customers. A strong negotiating position exists primarily when a customer buys a large portion of an operator's production, is well informed of other offerings, can switch to another operator without significant expense, and even has the potential to commence production of a comparable product/service. ECOI conclusion was that countervailing buying power of companies other than Siminn, is subject to limitations vis-à-vis Mila, because of the special position of that company resulting from the commercial relationship between Mila and Siminn and from the very substantial obligations on transactions between these companies. The large share held by Siminn in retail also generally weakens customers' positions. Sýn countervailing buying power is however appreciable vis-à-vis Ljósleiðarinn.

1605. In Section 6.1.6.2, product diversification/bundling on the relevant markets were taken into account. There was discussion in that section to the effect that Siminn bundling of service in retail on the Mila access network strengthens the Mila position significantly on the relevant wholesale market. Such bundling is deemed a barrier for new parties to the wholesale market for central access.

1606. There was discussion on potential competition in Section 6.1.6.3, when it was suggested that it was probably difficult for new parties to commence competition with the incumbent network operators on the wholesale markets for local loops or bitstream access, particularly at a national level. Local network operators were generally serving their inhabitants in each area rather than commencing competition with Mila at a national level. There was also the fact that such small and local parties were generally not operating bitstream systems. From the above, one may conclude that possible competition with Mila at national level is not on the horizon during the period of validity of this analysis.

1607. In Section 6.1.6.4 and 6.1.6.5, there was discussion on the one hand on pressure from substitute service and on the other hand on customer choice and on potential switching costs/transaction lock-in. With respect to pressure from substitute service, it is the assessment of ECOI that on market 3b there is some competitive pressure from mobile network solutions, that will increasingly provide substitutability for traditional fixed line network solutions during the lifetime of the analysis. On market 3a, ECOI assessment is that there is competitive pressure from mobile network solutions in an indirect manner, but it is not sufficient for the conclusion to be reached that mobile network solutions can belong to the relevant market, but ECOI will take this indirect pressure into account when assessing significant market power on individual geographic markets.

1608. With respect to customer choice and potential switching costs/transaction lock-in, ECOI came to the conclusion that because of the long history and extensive Mila local loop network and the very numerous local networks, Mila had a specific competitive advantage. One can also note that, according to the ECOI consumer survey, Siminn customers are less likely than those of other service providers to switch and vice versa, and as previously stated, the large majority of Siminn customers are on the Mila local loop network.

1609. All of the above indicates that active competition does not prevail on the wholesale market for local access with a fixed connection (market 3a), or for central access with a fixed connection for mass produced products (market 3b) at a national level. As was previously stated, the conclusion was reached in Sections 5.5.3 and 5.6.3 that ECOI considered there to be reason to segment the geographic market the relevant wholesale market in this country into 38 markets on market 3a and into 43 markets on market 3b. An assessment will be specifically made on whether competitive conditions in each individual area require that an undertaking be designated as having significant market power, in Sections 6.2 and 6.3.

6.2 Assessment of significant market power on market 3a

6.2.1 Introduction

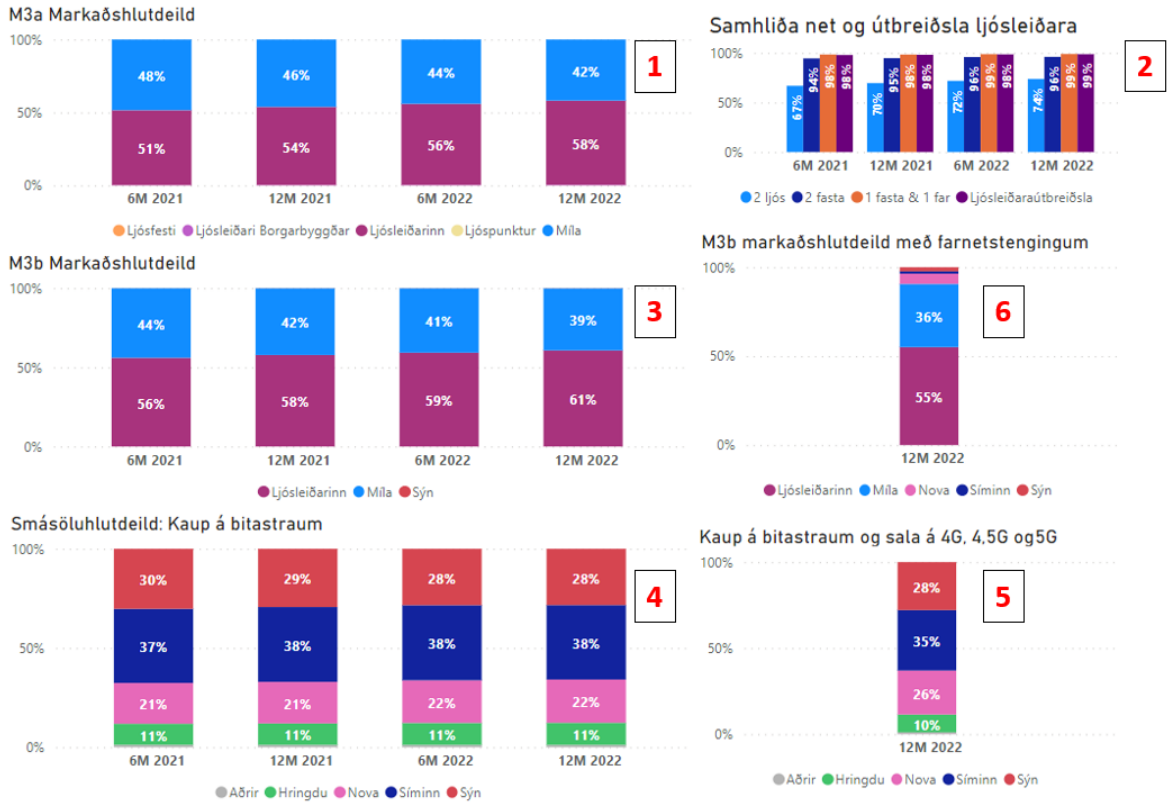
1610. When assessing significant market power in the 38 geographic markets in market 3a, ECOI considers it important to take into account the factors specified below, and as appropriate it may be necessary to take more factors into account where there is considerable doubt as to whether a party should be deemed to have significant market power or not, and ECOI also considered it unnecessary to discuss all factors in those areas where the conclusion was clear. Where there is significant doubt about the conclusion, ECOI will also apply a forward-looking approach and endeavour to predict development of competition during the lifetime of the analysis with respect to deployment of electronic communications networks, market share and whether significant market power will pertain throughout the planned lifetime of the analysis or whether it is likely that active competition will come into being in the relevant area.

1611. The above specified main factors are as follows:

1. Market share on the relevant wholesale market and as appropriate, on retail market;
2. Deployment of electronic communications networks, including parallel networks;

3. Control of facilities that are difficult to duplicate;
4. Total size and strength of electronic communications companies;
5. Potential competition;
6. Countervailing buying power;
7. Vertical integration or its equivalent;
8. Long-term access agreement related to relevant market;

1612. The presentation of the status of each municipality or area that municipalities are deemed to belong to is illustrated graphically in the following manner, and in the illustration, Area A is used for explanatory purposes. Data used by ECOI and presented here, comes from the electronic communications companies, both with respect to deployment of networks, and also with respect to numbers of customers in wholesale and retail. This also applies to assessment of deployment of mobile networks, 4G, 4.5 G and 5G, where signal strength is considered adequate for a good connection indoors. Information in Registers Iceland about the number of residences and companies in the country's municipalities is also the basis for scope of coverage in the relevant municipality.



1613. First marked as "1" in the graphical illustration, there is a graph showing market share of parties that operate local loop networks on fixed lines in the relevant area, which shows the proportion of local loops in use by the parties in question at any given time and that comprise wholesale market 3a. Coverage of local networks is another size, as it is seldom the case that all of a party's local loops are in use. Development of market share at six monthly

intervals is shown that demonstrates the status of each point in time from halfway through 2021 until the position at the end of 2022, i.e. four points in time.

1614. The graph marked “2” on the graphical illustration shows the coverage of networks and fibre in the relevant area and the development of coverage over the same four points in time. The first column shows the proportion of residences and workplaces in the area that have access to two fibre networks. The next column shows the proportion of residences in workplaces that have access to two fixed line networks, where the networks are from two different parties. The Mila copper network and fibre network are thus considered here to be a single fixed line network in the understanding of this proportion. The third column, the orange one, shows the proportion of residences and workplaces in the area that have access to at least one fixed line network and one mobile network from two different parties. When considering whether there is a mobile network accessible to the residence or workplace, only 4G, 4.5 G and 5G are considered. A signal strength for acceptable indoor use is also taken into account. Mila fixed line network and Mila mobile network distribution system, which was previously within Siminn mobile network systems, are therefore not considered to be separate networks on this column of the graph. If a Mila mobile network distribution system reaches a location where there is only a fixed line network from a party other than Mila, such a location would be considered to be part of the whole of the area. The fourth column, the purple one, shows the total deployment of fibre in the area, with the proportion of residences and companies that have access to any fibre network.

1615. Marked “3” on the graphical illustration is the development of market share over the same period in bitstream service on fixed line networks. Local loops can be in use even where bitstream service is not active on the local loop. This particularly applies to older types of service on copper local loops, such as traditional voice telephony. This means there is not the same total that is divided into proportions on market 3a on the one hand 3b on the other hand. Company use of its own bitstream system for its own retail is considered to be wholesale bitstream in the relevant area and for this reason is shown in this graph.

1616. The fourth part of the graphical illustration shows how bitstream service from graph “3” is divided between retailers that provides service to consumers over fixed lines and therefore shows the retail share on the market of service on fixed line. One must keep in mind that retailers can do business with more than one bitstream system. This means that there is not direct correlation between shares in wholesale on 3b and retail share.

1617. The fifth part of the graphical illustration adds the number of customers through mobile network routers to the number of customers in bitstream service on fixed lines from the fourth part. As data on use of mains connected network routers, are only available for one point in time, in April 2023, there is no data about their development. Although the counting was done after the new year, these data are considered illustrative for the position and at the end of 2022 and here the number of such network routers that one may consider having been used at fixed places of use are added to the number in retail on fixed line networks. This column shows the retail share with the addition of the number of customers over fixed line service and over mobile routers that are at a fixed location.

1618. As self-supply of mobile phone networks of service to customers on the systems is included in wholesale on the relevant bitstream market 3b, there is in the sixth part of the

graphical installation a column showing shares when the number in mobile network service is included in the number in wholesale bitstream fixed line networks “3”. Some mobile phone companies provide wholesale access to the mobile network service for resale to a third party. Such retail is shown in the fifth part, as retail of the reseller in question, and in this sixth part as wholesale of the mobile phone operator.

1619. When market share is estimated, development of market share at half yearly intervals from mid-2021 up to the status at the end of 2022, is take into account, that is to say at four points in time. ECOI is also gathered information from electronic communications companies about the status in mid-2023, but the information was not available when the preliminary draft of assessment of significant market power was submitted to national consultation on 15 September 2023. ECOI decided on the other hand not to embark on the work of revising the whole market analysis with these figures, but examined nevertheless, changes in each individual municipality. In Appendix C one can however see market share in all geographic markets from mid-2021 up to the status in mid-2023, at five points in time. There one can also find a conclusion on coverage of networks in mid-2023.

1620. On market 3a, ECOI changed its conclusion on evaluation of significant market power in Súðavíkurhreppur and in Vopnafjarðarhreppur from the conclusion published in national consultation, and those amendments were published in a separate national consultation on 29 November 2023. In the discussion on these two municipalities, information is also published for mid-2023 in addition to the information from 2021 and 2022. The conclusion on network coverage in mid-2023 was however not yet available when the consultation took place. Nor has ECOI new information about connections through mobile network routers but has added those connections to the fixed line connections for the end of June 2023, in the same manner as was done for fixed line network connections for the end of 2022 in specific municipalities. Information on connections through mobile network routers was from April 2023 and that information is therefore closer to information from June 2023 than December 2022.

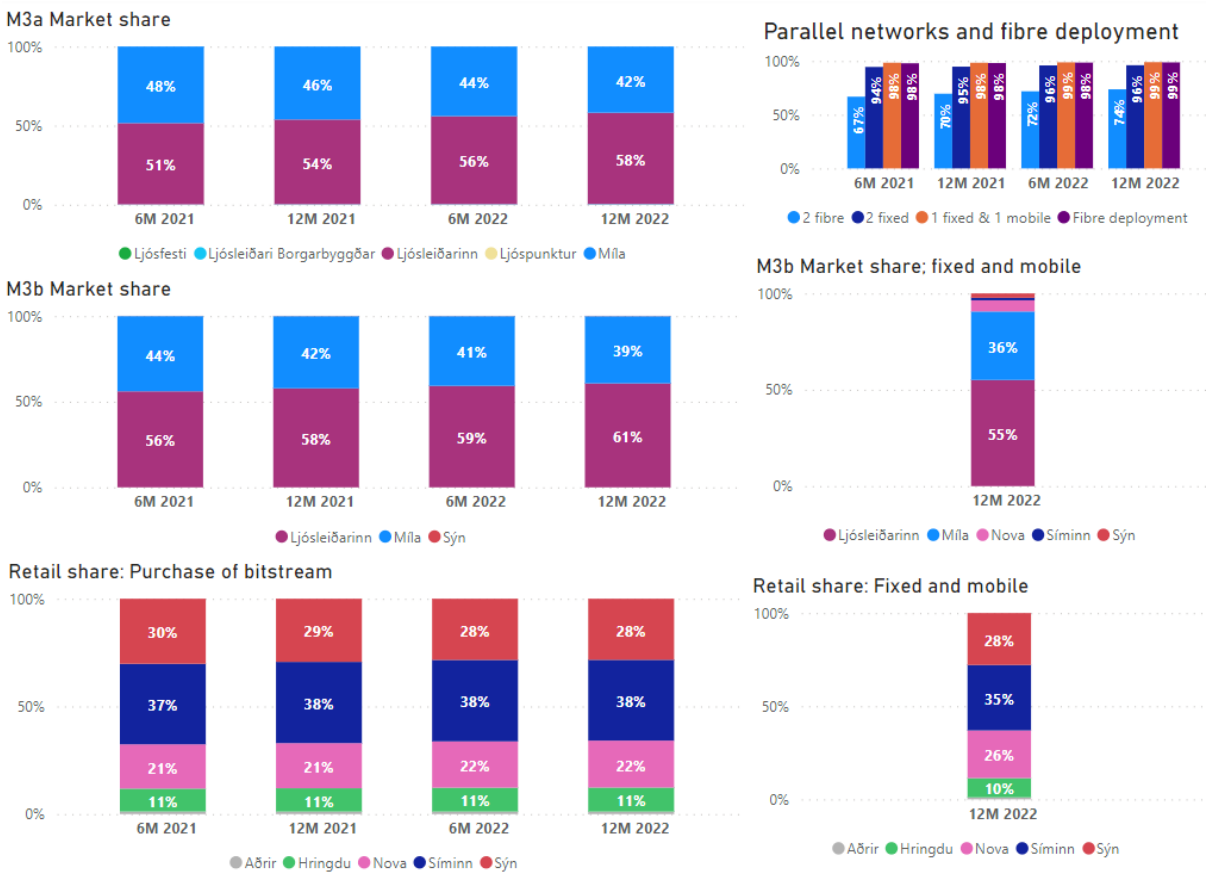
1621. There were also a number of changes to markets strength of Mila and Ljósleiðarinn in Seltjarnarnesbær, so information is also published on this for mid-2023. This change called for a closer examination by ECOI, but the conclusion on significant market power was however unchanged. ECOI considers there to be no grounds to change the conclusion or discussion on other areas/municipalities regarding development of market power of companies, as this would not have changed the conclusions in those instances and would have delayed the market analysis by a number of weeks.

6.2.2 Area A

1622. The following 8 municipalities are included under Area A:

- Akraneskaupstaður
- Borgarbyggð
- Garðabær

- Hafnarfjarðarkaupstaður
- Hveragerðisbær
- Kópavogsbær
- Mosfellsbær
- The City of Reykjavík



1623. In Area A, the total number of connected local loops was about 103,000 at the end of 2022. There is very substantial deployment of fibre and copper local loops in the area and also a large and growing deployment of parallel fibre. Access to mobile networks is also very substantial. Ljósleiðarinn fibre in this area reaches 98% of residences and workplaces at the end of 2022 and 74% of residences and workplaces have access to Mila fibre at the same time.

1624. ECOI expects that Mila will continue its fibre roll-out in the area during the lifetime of the analysis where [...] of connected Mila local loops are still copper local loops, and Mila aims to continue fibre roll-out in the area according to the company's deployment plans. Given the Mila plans that the company reported to ECOI, the company's fibre deployment will have reached [...]% in the area at the end of 2025 and probably even higher at the end of the planned lifetime of the analysis at the end of 2028.

1625. There is not much usage of mobile network routers in this area in comparison with many others, where the share of connections over mobile network routers is however about 9% of bitstream connections in the municipalities.

1626. These municipalities are characterised by vigorous and varied retail competition where no retailer enjoys dominance and where the retailer with the highest share has 35% of the market followed by one with 28% and the third with slightly less. The competition situation at retail level is therefore good in the area in question by Icelandic standards.

1627. Two strong parties operate on wholesale markets, i.e., Mila and Ljósleiðarinn, where neither party is considered to have market dominance in the opinion of ECOI. On the market for access to local loops the shares of these parties are quite similar, i.e. 58% for Ljósleiðarinn against 42% for Mila. Parallel network coverage by two fixed line networks is also substantial Ireland is on the increase, at 74% at the end of 2022. Coverage by two fixed line networks was also very substantial, i.e. 96% or 99% if one considers distribution of one fixed line network and one mobile network. As shown in the figure here above, Ljósleiðarinn market share had been increasing at the cost of Mila in recent times. As is stated in section 5.5.2.5, there are however various indications that the Mila position could strengthen rather than weaken in this area during the lifetime of the analysis. Reference is made to that discussion.

1628. In paragraph 4 of Article 18 of the regulation on market analysis in the field of electronic communications it states that significantly high market share of one company over a significant period of time, or greater than 50%, is considered to be a strong indication of significant market power, except in exceptional circumstances. Market share could on the other hand only act as a strong indication of the above if competitors cannot increase their offer sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5, it is important to keep in mind that under certain circumstances, a company with a high market share cannot operate to a significant degree without concern for customers with a strong bargaining position, for example if the countervailing buying power is substantial. It is clear that retailers such as Nova, Hringdu and to some extent Sýn have the option of moving to the Mila network if Ljósleiðarinn tries to abuse its strength in the area in question. In addition to this, parties like Siminn, Sýn and Nova could place more emphasis on the mobile network solution in question under such circumstances.

1629. In paragraph 7 of the above specified provision, it states that if market share is high, but under 50%, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be conducted before an opinion is reached on the existence of significant market power. ECOI considers this also to apply if market share is over 50%, particularly in duopolies or oligopolies, as the 50% boundary does not axiomatically lead to a case of significant market power. It is for example clear that in duopolies, one of the companies could have a little over 50% and the other a little under 50%. It is quite another matter than where one company has around 50% and, for example, many other companies have low market shares. This means that market share is only one of many criteria to take into account when assessing market power.

1630. In the case of a duopoly, it is not axiomatic that the above specified difference in market share leads automatically to the company with the higher market share being deemed to have a dominant position. In the opinion of ECOI, there needs to be a significantly greater difference in market share between parties than is the case in this geographic market for it to be likely that this is a case of significant market power. The EU Commission, for example, raised objections to the DBA plans for such in a Danish case that is recounted in section 5.1.10.7 here above. This was the municipality Ikast, where Energi Ikast Fibernet had 67% market share and is a wholesale-only company. Subsequent to serious objections from the Commission, DBA withdrew these plans and deemed that effective competition pertained on the relevant market.

1631. Mila's financial strength is significant, and the company has every capability to provide Ljósleiðarinn with hard competition in the area. As stated above, it is likely that Mila share will increase during the lifetime of the analysis as the company's fibre deployment progresses. In addition to this, Mila is making strong efforts to gain Nova as a customer on its fixed line networks and ECOI considers it likely that this will happen during the lifetime of the analysis, although it is difficult to predict the extent to which this will happen. It would not need a large number of Nova customers that have been on the Ljósleiðarinn fibre network, to switch to Mila network for the difference that exists today in market shares to decrease, or even disappear entirely. Sýn also has the opportunity to migrate to an increasing degree from the Ljósleiðarinn network to the Mila network, though to a lesser degree than with Nova. When Mila is released from obligations in these municipalities, subject to this market analysis, it is not outside the realms of possibility that the company could become increasingly active in the competition.

1632. As discussed in section 6.1.3.8 (Summary and conclusions on the main long-term access agreements) and in 6.1.5.9 (Vertical integration), Mila has a long-term agreement with Siminn, the largest reseller on a related retail market in this area. For the time being it is not possible to exclude that the characteristics of vertical integration and extensive commercial connections between the companies still exists, which strengthens Mila's position in the area.

1633. In addition to this, countervailing buying power vis-à-vis Mila is limited in the area, but is significant vis-à-vis Ljósleiðarinn by Sýn, Nova and Hringdu. It is also likely that the increase in the number of Siminn customers on the Ljósleiðarinn network which has been the case during the last 2 years will diminish somewhat during the lifetime of the analysis, Mila fibre deployment progresses and Siminn latitude to purchase from parties other than Mila will diminish. The development in market share on the relevant wholesale market that has taken place in recent times in this area may therefore be quickly reversed, and in a significant manner. Mila opportunities for advancement appear to be greater than those of Ljósleiðarinn in this area on the relevant market.

1634. Given the above, and particularly the good position on the related retail market in this area and the high parallel coverage of fixed line networks, and also if one only takes into account parallel coverage of fibre networks, ECOI considers there to be no grounds, neither on the basis of the current situation or from a forward-looking perspective, to designate Ljósleiðarinn as having significant market power on the relevant geographic market.

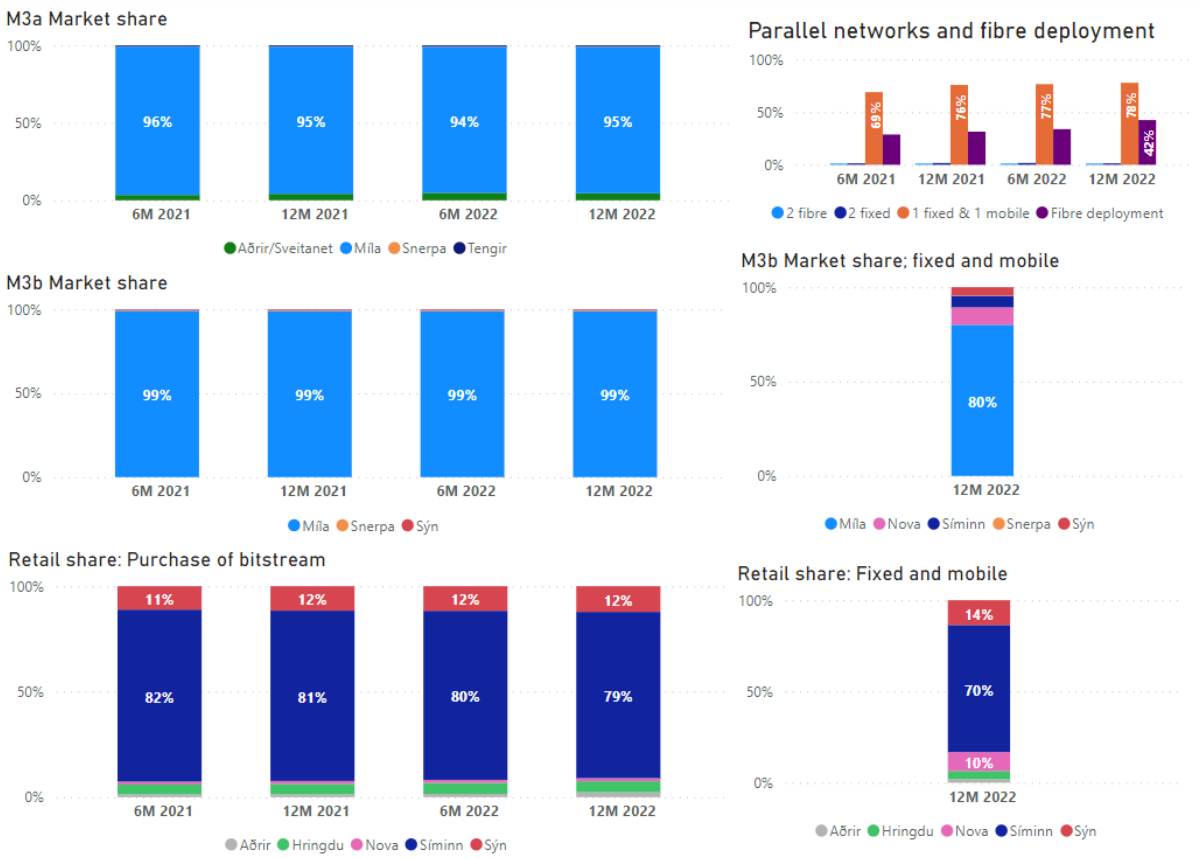
1635. ECOI therefore considers that effective competition does prevail on market 3a in those municipalities belonging to Area A and that this will be the case throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this area.

6.2.3 Area B

1636. The following 15 municipalities are included under Area B:

- Fjarðabyggð
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Tálknafjarðarhreppur
- Vesturbyggð[357]

[357] Part of the fibre local loops that are registered as being owned by Vesturbyggð are jointly owned by Vesturbyggð and Míla. Mila has control of most local loops that are jointly owned by Mila and Vesturbyggð, as those local loops are directly connected to the Mila trunk line and it is not possible to connect them in another manner under current circumstances.



1637. In Area B, the total number of connected local loops was about 8,700 at the end of 2022. Fibre deployment in the area is about 42% and is increasing slowly. On the other hand, parallel coverage of fixed line networks is almost none. Mila fibre in this area reaches 36% of residences and workplaces at the end of 2022, while other network operators have very limited deployment.

1638. A large proportion of active Mila local loops in this area are copper local loops, i.e. 62%, but they are on the decline, probably in step with Mila fibre deployment. Mila market's share is steadily around 95% in this area and there is nothing to indicate that it will decrease significantly during the period of validity of this decision.

1639. Use of mobile phone routers is quite substantial in this area, and the share of connections over mobile network routers is on average about 19% of bitstream connections in the area.

1640. In municipalities categorised under Area B, a common factor is that Siminn enjoys a dominant share in retail of Internet connections, about 70% on average, and Mila is almost ubiquitous in both wholesale of bitstream service and access to local loops with close to 100% market share, on average, on both wholesale markets. The impact of a long-term agreement between Siminn and Mila it is also clearly evident in this area.

1641. Although there is some access to mobile networks, this access does not significantly alter the market shares of Siminn and Mila, and nor is it likely to do this during the lifetime of the analysis.

1642. With the above in mind, the competitive situation is therefore not at all good in this area, neither at retail level nor at wholesale level, and there are no expectations that this will improve significantly during the expected lifetime of the analysis.

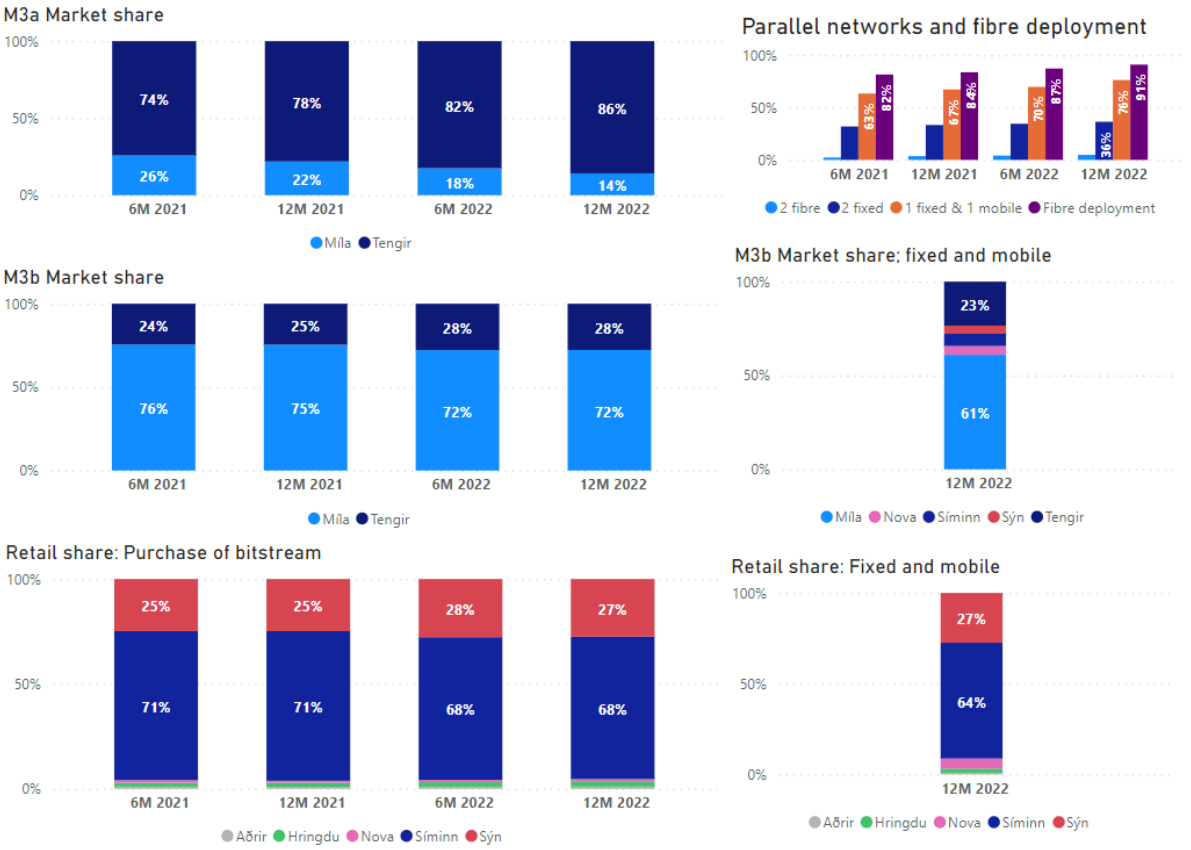
1643. One must also consider it unlikely that potential competition in this area is likely to change the situation significantly. Mila has facilities that are difficult and expensive to duplicate in these rather sparsely populated municipalities. Nor is there any strong countervailing buying power of any party that can curtail Mila market power, nor is it likely that such countervailing buying power will be in place during the lifetime of the analysis.

1644. With the above in mind, ECOI considers it clear that Mila has significant market power in this area and that this will be the case throughout the expected lifetime of the analysis. Appropriate obligations will be imposed on Mila in this area.

6.2.4 Area C

1645. The following 6 municipalities belong to Area C:

- Dalvíkurbyggð
- Eyjafjarðarsveit
- Grýtubakkahreppur
- Hörgársveit
- Svalbarðsstrandarhreppur
- Þingeyjarsveit



1646. In Area C, the total number of connected local loops was about 2,150 in these 6 municipalities at the end of 2022. Fibre deployment in the area is about 91% and is increasing. Parallel coverage of fixed line networks is rather small at about 36%, while parallel coverage of fibre is very small at about 5%. Ljósleiðarinn fibre in this area reached 90% of residences and workplaces at the end of 2022 and only 5% of residences and workplaces had access to Mila fibre at the same time.

1647. Tengir local loops are solely fibre. The largest proportion of active Mila local loops in this area are copper local loops, which are on the decline, while active Mila fibre local loops are very few and are increasing slowly, so ECOI cannot see that there will be substantial changes there during the expected lifetime of the analysis.

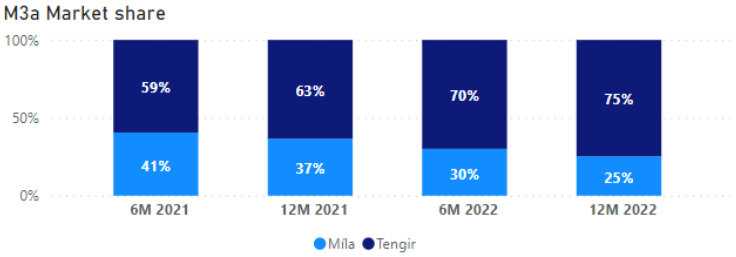
1648. Tengir market share has been on the increase on the relevant wholesale market in this area where it was 86% at the end of 2022 and there is nothing to indicate that it will diminish significantly during the period of validity of this decision. One can rather expect Tengir's position to strengthen as Mila appears not to have any plans for fibre deployment in the area and has been the largest bitstream provider on the Tengir network. Tengir facilities in the area are difficult to duplicate and this is hardly financially profitable in an area with such a small population, which is also partly rural. Mila has access to Tengir fibre local loops in this area and has installed its bitstream on the Tengir network and Mila appears to consider its interests well served with this arrangement, as the Mila market share is very high on market 3b in this area.

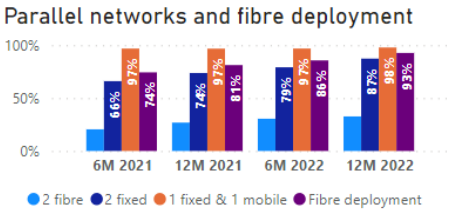
1649. There is some use of mobile network routers in this area, and the share of connections over mobile network routers is on average about 16% of bitstream connections in the area.

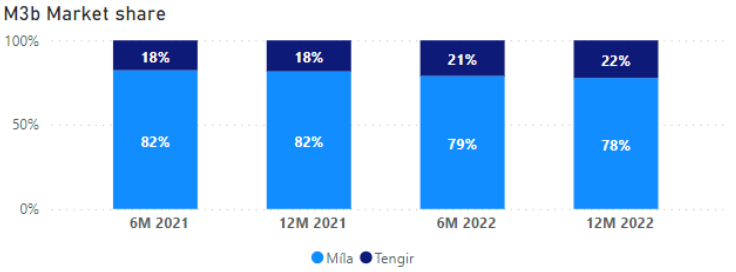
1650. In this area, the status of competition on the retail market is good, where Siminn had 64% market share at the end of 2022 and the next party had 27%, while others had very small shares.

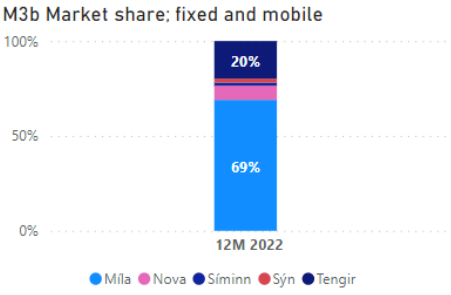
1651. Having taken this into account, ECOI considers that Tengir has significant market power on market 3a and that it is necessary to impose appropriate obligations on Mila on the relevant market.

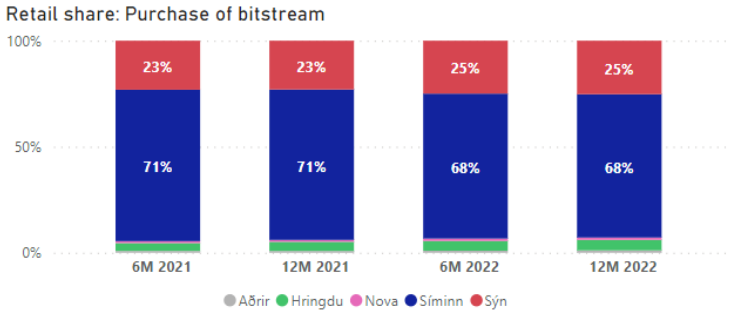
6.2.5 Akureyrarbær

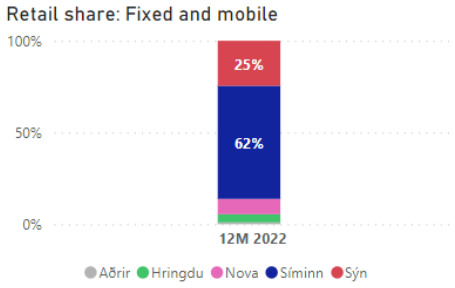












1652. In Akureyrarbær, the total number of connected local loops was about 8,500 at the end of 2022. Tengir has conducted substantial fibre deployment in the municipality for many years and the company's fibre deployment had reached about 92% of residences and workplaces at the end of 2022. There has been significant uptake of the Tengir fibre where the company's market share on market 3a has been on the increase and was 75% at the end of 2022 while having been 59% in mid-year 2021.

1653. Mila has also conducted fibre deployment in the municipality and had reached 33% at the end of 2022. ECOI expects the Mila will continue its fibre deployment in the area but a significant part of Mila local loops are copper local loops. [...]. There appears not to be much uptake of the Mila fibre network in the area and it seems that local people show Tengir great loyalty and this is not expected to change significantly during the expected lifetime of the

analysis. Tengir facilities in the area are thus difficult to duplicate, particularly as a result of the above specified fidelity local residents show Tengir, and one may thus expect that Mila fibre deployment in the area is not as financially profitable as could be expected for such an urban area. It is therefore likely that Mila investment in fibre local loops in the area will take a longer time to provide a return than will be the case with Tengir.

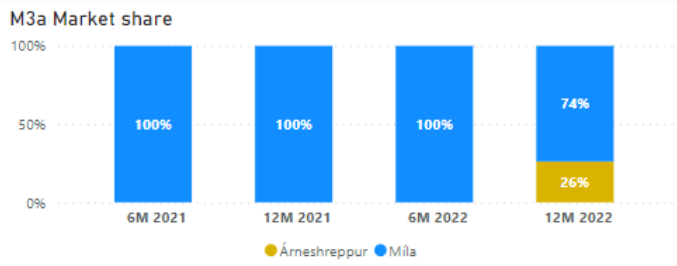
1654. There is some use of mobile network routers in Akureyrarbær, where the proportion of connections over mobile network routers is about 11% of bitstream connections in the municipality.

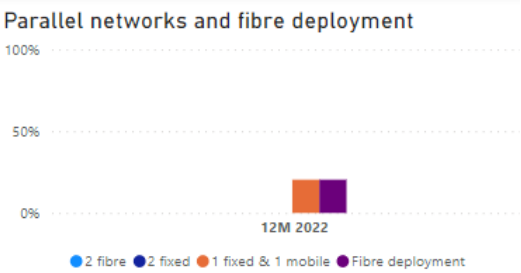
1655. Circumstances in Akureyri are at this point in time similar to those that apply in Area C. On the other hand, deployment of two parallel fibre networks has been growing in recent years and will continue to grow on the basis of the above specified Mila plans. Mila is the same time, a large user of Tengir local loops.

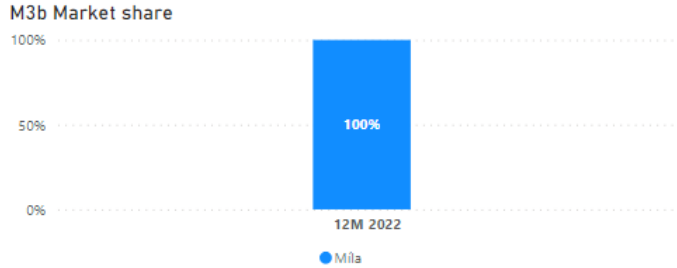
1656. Nor is the status of competition on the retail market good in this area, where Siminn had 62% market share at the end of 2022 and the next party had 25%, while others had very small shares.

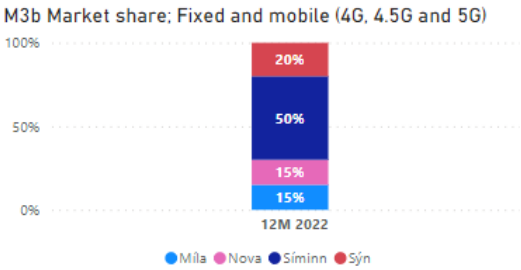
1657. Having taken this into account, ECOI considers that Tengir has significant market power on market 3a and that it is necessary to impose appropriate obligations on Tengir on the relevant market.

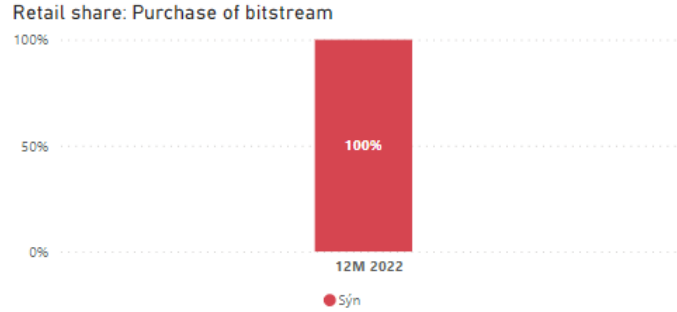
6.2.6 Árneshreppur

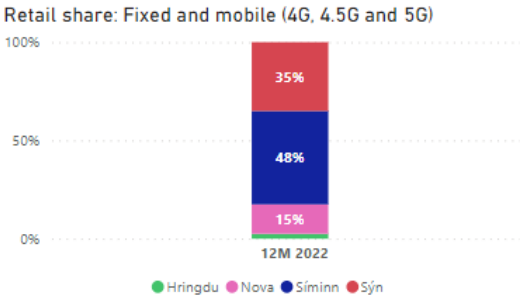












1658. In Árneshreppur in the West Fjords, the total number of connected local loops was 23 at the end of 2022. Árneshreppur municipality has commenced fibre deployment in the municipality and its deployment had reached about 20% of residences and workplaces at the end of 2022. ECOI expects that Árneshreppur will deploy fibre to most residences in the municipality, and this is a state-supported initiative. Some residences are so remote that it will not be possible to lay fibre to them, because of the high cost. Mila provides bitstream over the Árneshreppur fibre and in recent data from Mila on residences that have a possibility of fibre connection with Mila, it is possible to connect 26 real estate numbers[358]. It is expected that the municipality's fibre network will fully replace the Mila copper network before long.

1659. There is considerable use of mobile network routers in Árneshreppur, where the proportion of connections over mobile network routers is about 85% of bitstream connections in the municipality in the year 2022. The explanation for this is that bitstream service on fixed line networks was not on offer until the municipality fibre connections went on sale. One can expect volatility in retail shares when bitstream and Internet service over fibre is offered to all residences and workplaces in the municipality, and retail competition was quite effective in the municipality at the end of 2022, where the largest party had 48% market share and the next after that had 35%.

1660. In the case of FICORA, the Finnish NRA, from 2018[359] that relates to analysis of markets 3a and 3b, it was among other things stated that, apart from the designation of 21 electronic indications companies as having significant market power in specific areas, about 50 local networks were operated in 2017 that were owned by cooperatives or municipalities that had deployed fibre in the countryside, i.e. in areas where fibre networks of the party with market dominance did not reach. Most of these networks were not vertically integrated. They variously sold wholesale access to the networks to a number of electronic communications companies that operated at retail level or had chosen one party to provide service on the networks for a specific period of time subsequent to an auction. Many of them had received state support and therefore hard to provide access are the reasonable price, with the non-discrimination as a guiding light. Those few parties that operated vertically integrated, offered on the other hand wholesale access to other electronic communications companies.

1661. The EU Commission initially raised among other things, objections to the FICORA plan to refrain from considering the designation of the small country networks as having significant market power and as appropriate imposing obligations on them. In the opinion of the Commission, FICORA should make a better investigation of their market behaviour, particularly pricing and access conditions. For this reason, FICORA withdrew its original draft, and conducted a further analysis of these country networks.

1662. FICORA did not however alter its prior plans to refrain from designating the small country networks in Finland as having significant market power in their areas but conducted a detailed analysis of them. Eventually, the Commission accepted FICORA arguments. In the opinion of the Commission, these networks generally followed an open business model with respect to access. As the majority of them had received state support for the development, they were bound by obligations that resulted from state support rules, among other things

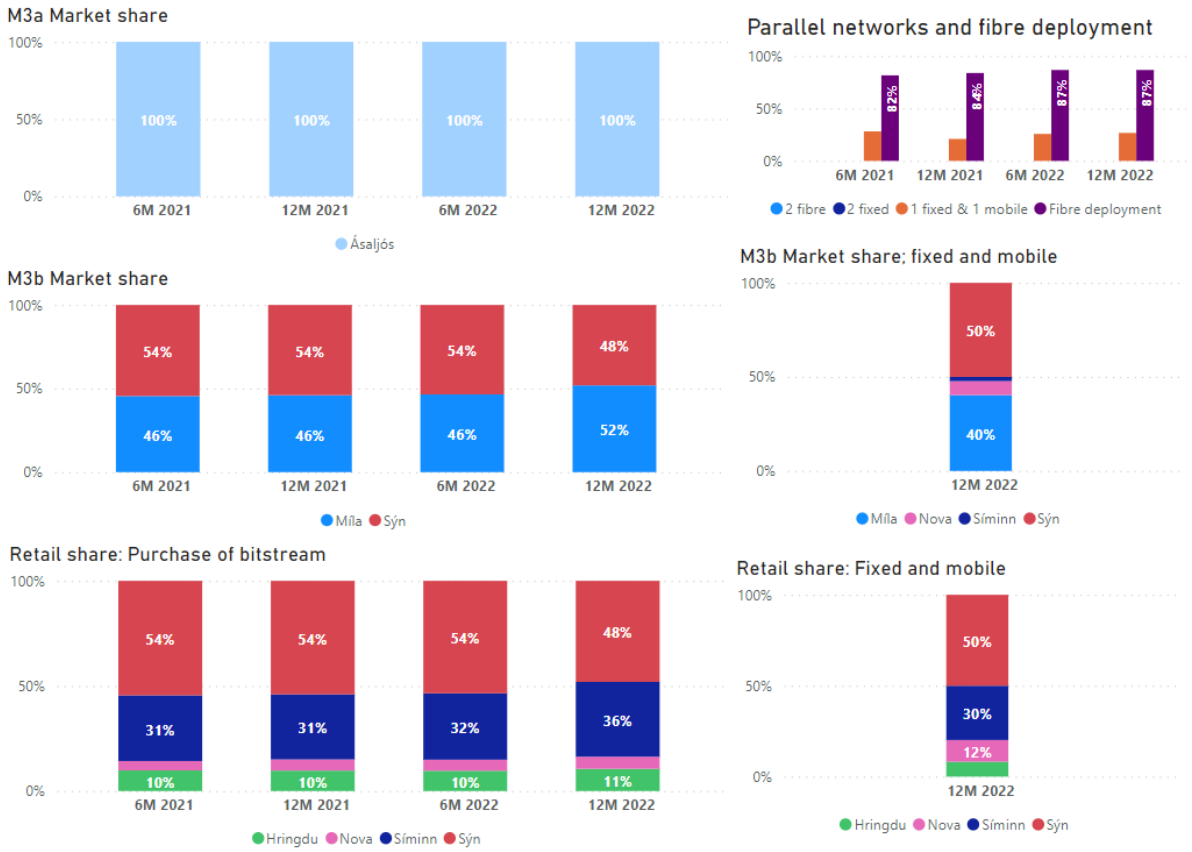
[358] https://www.mila.is/framkvaemdir/aaetlanir-ljosleidara-og-ljosnets/.
[359] See FI/2018/2052 and 2053.

for open access, non-discrimination, and fair pricing. FICORA pointed out that some of these rural networks had increased their market share significantly in the relevant areas but considered this not to be sufficient reason to designate them (or some of them) as having significant market power. The FICORA then repeated that the behaviour of these parties on the market was significantly different from traditional electronic communications companies that have the main objective of maximising profit and operating therefore in a totally different manner than small local electronic communications networks that served community objectives in sparsely populated municipalities.[360]

1663. With reference to all of the above the ECOI considers there to be no grounds to designate the fibre networks of the municipality in question as having significant market power. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this remote and sparsely populated area. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila has strong countervailing buying power vis-à-vis the network as the only operator of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be lifted.

[360] Countryside networks in this document refers to small local electronic communications networks owned by municipalities or companies owned by municipalities, that serve community objectives in sparsely populated municipalities and that differentiate themselves from traditional electronic communications companies that are operated with maximising profit hours their guiding light.

6.2.7 Ásahreppur



1664. In Ásahreppur in South Iceland, the total number of connected local loops was about 100 at the end of 2022 and they are all owned by Ásaljós which is fully owned by Ásahreppur. Ásahreppur was one of the first municipalities to deploy fibre to its area and this fibre network has been operated as an open network where Mila and Ljosleidarinn operate bitstream service. The Ásahreppur fibre deployment reached about 76% of residences and workplaces at the end of 2022. ECOI does not expect that another network operator will embark on fibre deployment in the municipality during the period of validity of this market analysis.

1665. There is some use of mobile network routers in the municipality, where the share of connections over mobile network routers is about 22% of bitstream connections in the municipality, which most likely may be explained by use in summer houses.

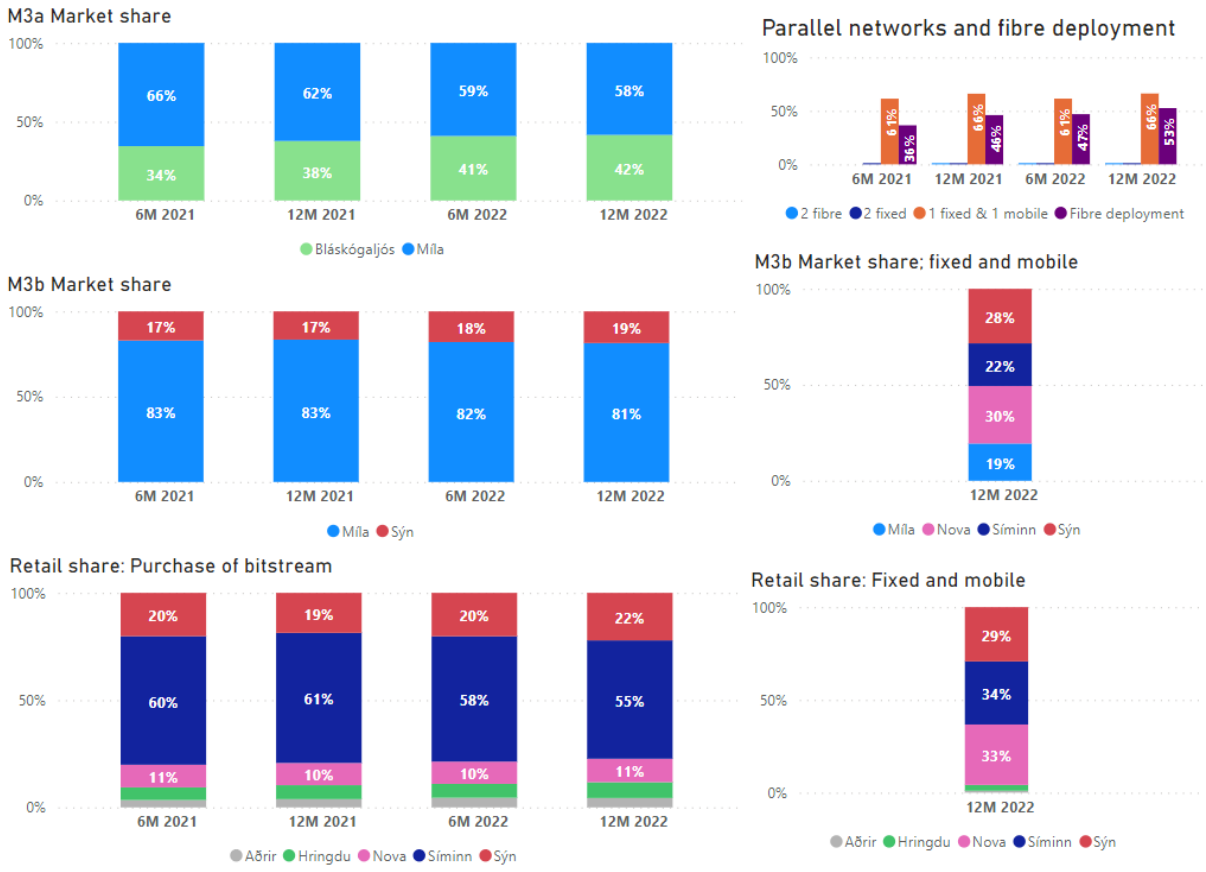
1666. Míla and Ljosleidarinn both operate bitstream service on the Ásaljós network where the shares of the companies are even and stable. The impact of mobile networks on retail and wholesale are tangible, but do not have a deciding influence.

1667. The development of a fibre network in the municipality is completed and Mila has decommissioned its copper network at that location. One must consider there to be no likelihood of parallel coverage of another fibre network in this sparsely populated municipality with few inhabitants.

1668. The status of retail competition was reasonable in the municipality at the end of 2022, where the largest party had 50% share and the next had 30%.

1669. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila and Ljosleidarinn have strong countervailing buying power vis-à-vis the network as the only operators of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be lifted.

6.2.8 Bláskógabyggð



1670. In Bláskógabyggð in South Iceland, the total number of connected local loops was about 450 at the end of 2022. This is a region with a large summerhouse area, and also with three small urban nuclei, i.e. Laugarvatn, Reykholt and Laugarás. There is a local state-supported

fibre network owned by the municipality, Bláskógarljós, which reached 34% of residences and workplaces at the end of 2022. The Bláskógarljós fibre network has been operated as an open network, where Mila and Sýn have operated bitstream service on the network. Parallel coverage of two fixed line networks in the municipality is negligible. Mila fibre deployment in the municipality was about 19% at the end of 2022 and fibre deployment has increased slowly. ECOI does not expect further parallel coverage of fibre networks in the municipality during the period of validity of this market analysis, as there are no financial grounds for doubling fibre local loops to rural areas.

1671. Copper local loops are a large part of Mila local loops, but they are on a steady decline. There is much use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 76% of bitstream connections in the municipality. This mostly results from the number of summerhouses in the municipality where summerhouses are almost four times as many as residences and workplaces, but the number of summerhouses is significantly higher than the number of connections over mobile network routers. In the opinion of ECOI, there is therefore little indirect competitive impact from mobile networks on this local loop market. One must keep in mind that it is the ECOI conclusion that such solutions do not belong to the market 3a in question, but rather only at retail level and on market 3b.

1672. Urban nuclei in the municipality are, as previously stated Laugarvatn, Reykholt and Laugarás and Mila owns fibre that reaches these locations and Mila also has fibre local loops to part of the residences and workplaces in Laugarvatn and Reykholt. Fibre deployment in the municipality is furthermore specified in the Mila plans[361]. ECOI considers that Mila is the most likely party to continue fibre deployment in the municipality in order to replace copper local loops operated by the company, though it must be considered unlikely that parallel fibre networks will be deployed in the most rural areas.

1673. The position of retail competition is good in this municipality. The largest party has 34% market share, the next has 33% in the third house 29%.

1674. On market 3a, Mila has 58% market share while Bláskógaljós has 42% market share. The Mila share has been on the decline and was 66% in mid-year 2021. As Bláskógaljós fibre deployment is completed, it is the assessment of ECOI that one cannot expect the Mila share to decline much more during the expected lifetime of the analysis and in the opinion of ECOI will still be in excess of 50% at the end of the expected lifetime of the analysis.

1675. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. Apart from the fact that the company is only the second largest party on the market in question, with something under 50% market share, there is no real likelihood that the municipality will abuse its network against the interests of consumers or of wholesale transactions in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to

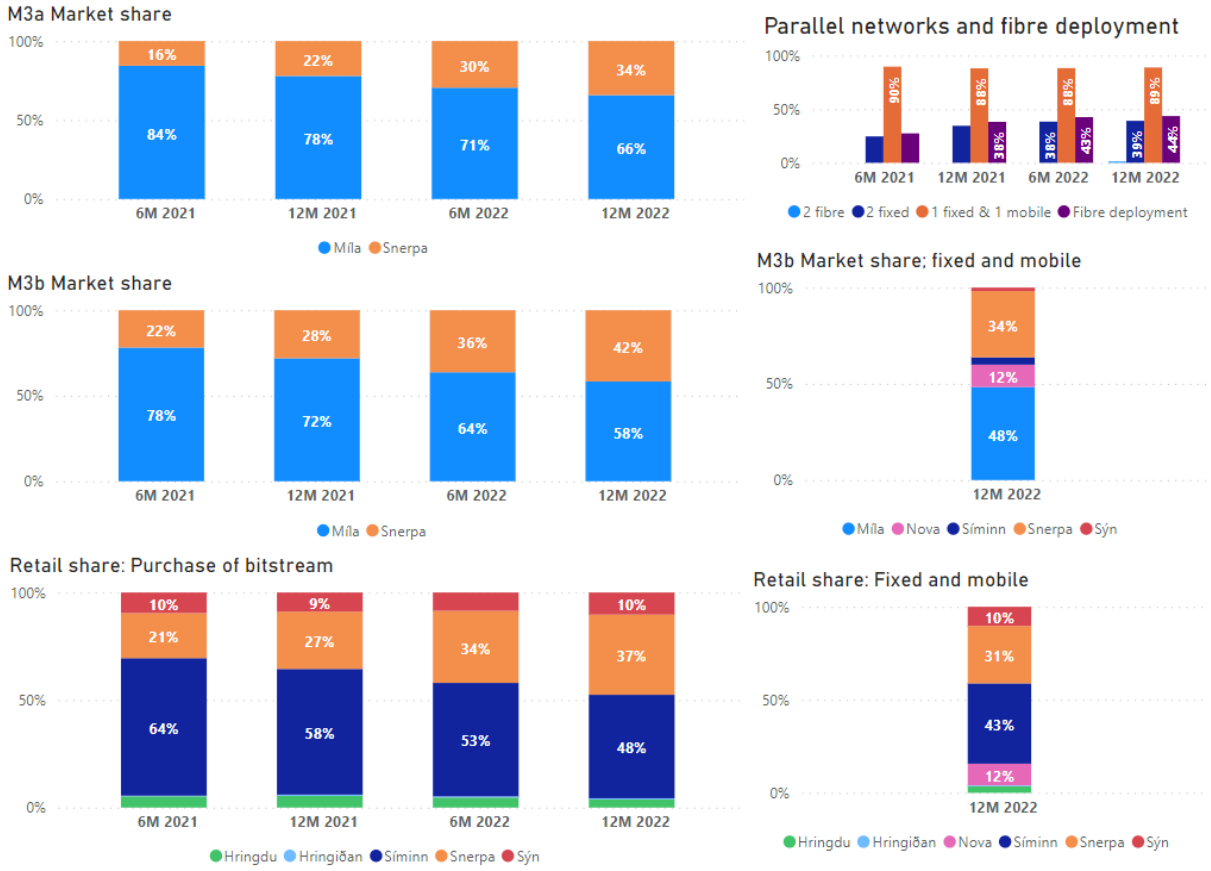
[361] See https://www.mila.is/framkvaemdir/aaetlanir-ljosleidara-og-ljosnets/.

support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila and Sýn and then Ljósleiðarinn, as the Ljósleiðarinn purchase of the Sýn network has been endorsed by the Competition Authority, have strong countervailing buying power vis-à-vis the network as the only operators of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district.

1676. On the other hand, ECOI considers that Mila has significant market power in the municipality in question. Mila has 58% market share which ECOI believes will not go below 50% before the end of the expected lifetime of the analysis. The fixed line networks of Mila and Bláskógaljós are to a large extent, each in their own area within the municipality and there is negligible parallel network coverage there. In this area, Mila has a fixed line network that is difficult for others to duplicate, and in addition to this there is no indication that any party has strong countervailing buying power vis-à-vis Mila. Then there is the fact that connections of interest between Siminn and Mila have at least in part the characteristics of vertical integration, which can have some impact in this case, where Siminn has the greatest retail market share, though it is somewhat lower than the share of Siminn in many other municipalities in the countryside.

1677. Appropriate obligations will be imposed on Mila on market 3a in Bláskógabyggð.

6.2.9 Bolungarvíkurkaupstaður



1678. In Bolungarvík, the total number of connected local loops was about 400 at the end of year of 2022. Snerpa deployed fibre in the rural area for the municipality and the company has continued to deploy fibre to the urban area. The company's fibre reached 42% of residences and workplaces at the end of 2022. Snerpa has continued fibre deployment in the municipality during the year 2023 and has plans for further deployment in the coming years.

1679. According to information from Snerpa access by other electronic communications companies to the company's fibre is possible but no electronic communications company has yet connected to the company's fibre, although Snerpa has sought business with Mila. Discussions have been ongoing for some time between Snerpa and Mila but have not produced results.

1680. Mila fibre deployment in the municipality was under 3% at the end of 2022, and there are no signs of planned fibre deployment by Mila in the area. ECOI does not expect deployment of parallel fibre networks in the municipality during the period of validity of this market analysis.

1681. Connected Mila local loops are only copper local loops and Snerpa is using half of Mila loops to provide bitstream service. There is some use of mobile network routers, the share of connections over mobile network routers is about 17% of bitstream connections the municipality. The number of connections over mobile network routers is more than the number of summer houses in the area, so one must consider it likely that there is indirect competitive pressure from mobile networks, though it is not substantial.

1682. The few fibres local loops that Mila has deployed in the municipality reach the urban area Bolungarvík. In the opinion of ECOI, the company can decide to deploy fibre to the municipality at short notice, as this is not a populous municipality.

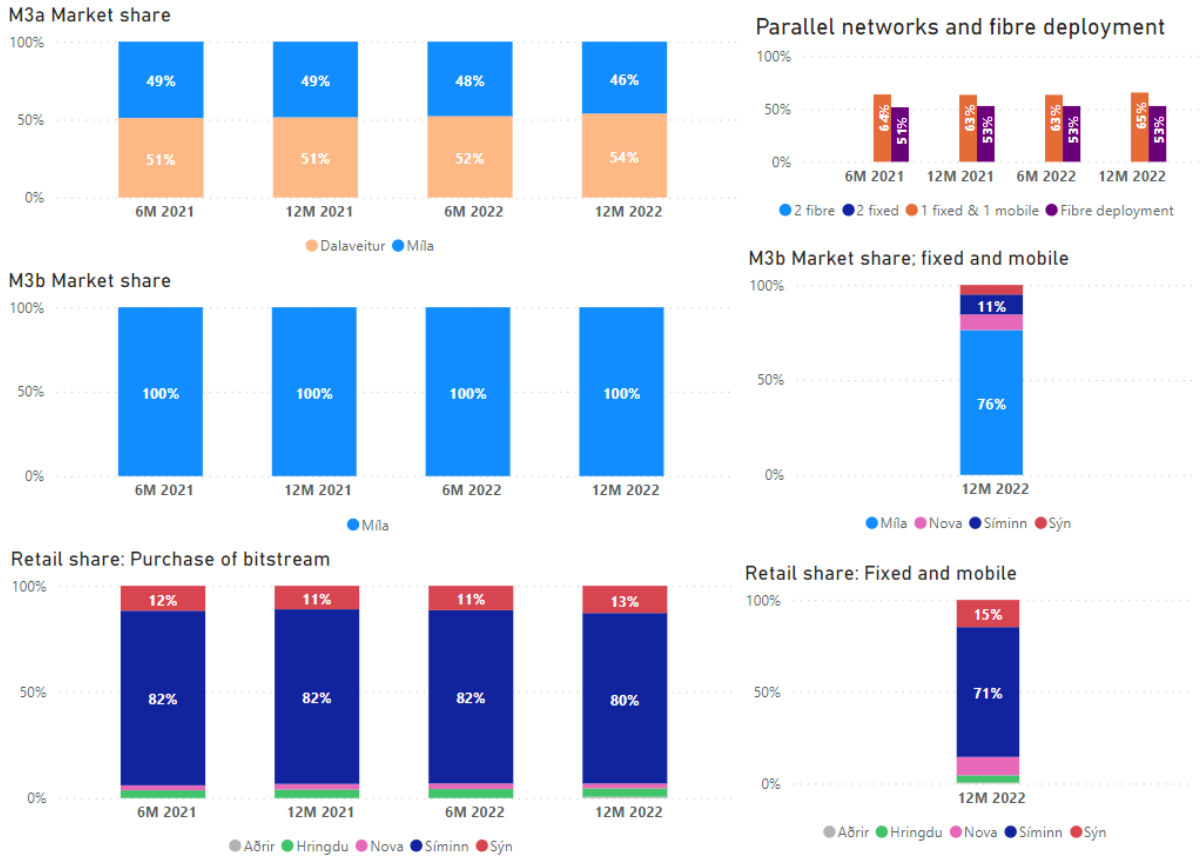
1683. Parallel coverage of fixed line networks was 39% at the end of 2022 and has been increasing with Snerpa fibre roll-out. This means that the parallel coverage of fixed line networks is growing in the municipality and should Snerpa plans come to fruition, deployment of fixed line networks should increase even more in the coming years. Mila market share has been on the decline and had dropped to 66% at the end of 2022, after having been 84% in mid-year 2021.

1684. The situation at retail level is quite good in the municipality. The largest party (Siminn) had 43% are the end of 2022 and the next largest (Snerpa) had 31%, and in addition to this there were two parties with over 10% share. As Snerpa was conducting extensive fibre roll-out in the municipality in the first half of 2023, one could even expect that the shares of Siminn and Snerpa have somewhat declined during the first half of 2023.

1685. At the end of 2022, Mila was the largest party on market 3a in the municipality with 66% share against 34% share of Snerpa. Given the above specified substantial Snerpa fibre roll-out in the municipality during the first half of 2023, one can expect that to have been a significant decline in the shares of the companies during the first half of 2023, as there are many that choose fibre rather than copper, nor a substantial number still settle for copper, and in addition to this, Siminn has a strong attraction as the company has operated for a long time on the market and offers popular bundles, including popular TV material, and Siminn is not on the Snerpa fibre network, neither directly nor through Mila.

1686. Despite the fact that Mila had a significant advantage over Snerpa in the municipality at the end of 2022, on the basis of market share, which may have declined somewhat in the first half of 2023, ECOI considers there to be no reason to maintain designation of Mila as having significant market power in the municipality on the basis of a forward-looking perspective. ECOI considers that effective competition does prevail on market 3a in Bolungarvík and will prevail throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this area.

6.2.10 Dalabyggð



1687. In Dalabyggð, the total number of connected local loops was about 330 at the end of 2022. There is a local state-supported fibre network owned by the municipality, Dalaveitur, which reached 49% of residences and workplaces at the end of 2022. The Dalaveitur fibre network is a state-supported network in rural Dalabyggð and has been operated as an open network. Mila has operated bitstream service on the network.

1688. Mila fibre deployment in the municipality was about 4% at the end of 2022 and fibre deployment has almost stagnated in recent times.

1689. Connected Mila local loops are mostly copper local loops. There is some use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 24% of bitstream connections in the municipality. There are some summer houses in the municipality, but they are significantly more than connections over mobile network routers. ECOI considers that there is no significant degree of indirect competitive pressure from mobile network routers in the municipality.

1690. Mila fibre reaches Búðardalur which is the main urban nucleus in Dalabyggð. It is likely that Mila will continue deploying fibre in Búðardalur but it is difficult to predict about continued deployment in the light of how slow deployment has been [...].

1691. There is no parallel coverage of fixed line networks in the municipality, and it is unlikely that this will change while the analysis is in force.

1692. Dalaveitur has about 54% market share, which has been slowly growing since the middle of 2021 and there are no indications that this share will diminish in the future. ECOI believes that the share will not increase either, as fibre has been rolled out to the countryside. ECOI considers there to be no grounds to designate the fibre network of the municipality in question as having significant market power. Apart from the company's market share, being only just over 50% and where the Mila share is not much less than that, there is no real likelihood that the municipality will abuse its network against the interests of consumers or of wholesale transactions in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila has strong countervailing buying power vis-à-vis the network as the only operator of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district.

1693. The fixed line networks of Mila and Dalaveitur are in addition to this, to a large extent, each in their own area inside the municipality and parallel coverage of fixed line networks is negligible here. In this area, Mila has a fixed line network that is difficult for others to duplicate, and in addition to this there is no indication that any party has strong countervailing buying power vis-à-vis Mila. The connections of interest between Mila and Siminn show at least in part the characteristics of vertical integration which strengthens the Mila position on the relevant municipality, see discussion on vertical integration here above. ECOI considers it therefore necessary to impose appropriate obligations on Mila on market 3a in Dalabyggð.

6.2.11 Eyja- og Miklaholtshreppur



1694. In Eyja- og Miklaholtshreppur, the total number of connected local loops was about 79 at the end of 2022. In this area, there is a local fibre network owned by the municipality, which reached 73% of residences and workplaces at the end of 2022, or 92% if one only counts residences[362]. The fibre network of Eyja- og Miklaholtshreppur was developed by the municipality and enjoyed state support. The fibre network has been operated as an open network, where Mila has operated bitstream service on the network.

1695. Mila fibre deployment in the municipality was less than 2% at the end of 2022 and fibre deployment has stagnated in recent times.

1696. There are very few Mila connected local loops. There is not much use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 7% of bitstream connections in the municipality.

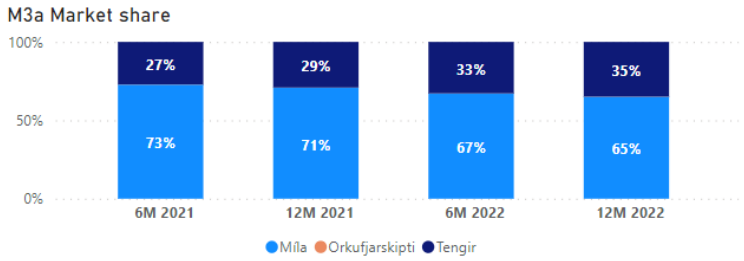
1697. Parallel coverage of fixed line networks in the municipality is negligible and it is unlikely that this will change while the analysis is in force.

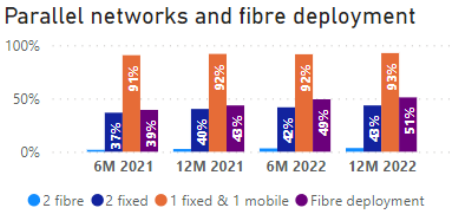
1698. The state of competition at retail level is not good where Siminn has 75% market share, and the next party has 12%.

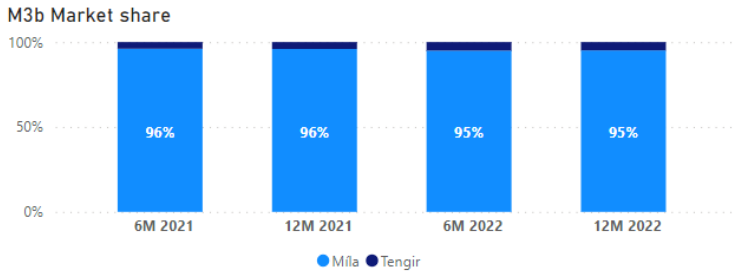
[362] A fibre connection was available for all residences in the municipality at no cost and a connection charge was collected from companies during the project.

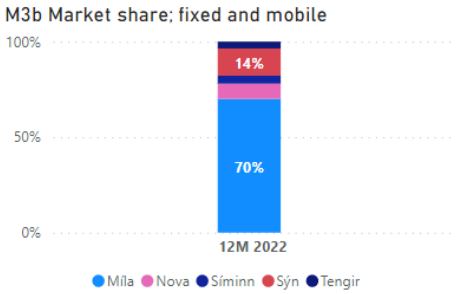
1699. Eyja- og Miklaholtshreppur has 95% market share, and it is not expected that this share will decrease in the future. ECOI however considers there to be no grounds to designate Eyja- og Miklaholtshreppur as having market dominance. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila has strong countervailing buying power vis-à-vis the network as the only operator of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be lifted.

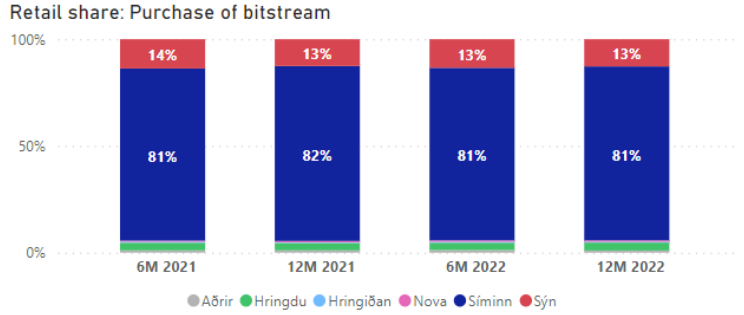
6.2.12 Fjallabyggð

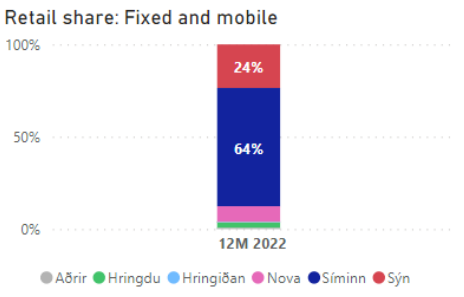












1700. In Fjallabyggð, the total number of connected local loops was about 950 at the end of 2022. There is a fibre network owned by Tengir which reached 46% of residences and

workplaces at the end of 2022. Part of the Tengir fibre network, i.e. rural area, was developed in cooperation with the municipality and enjoyed state support. The Tengir fibre network also reaches Ólafsfjörður and fibre deployment has commenced in Siglufjörður. The Tengir fibre network has been operated as an open network, where Mila and Tengir have operated bitstream service on the network.

1701. Mila fibre deployment in the municipality was less than 8.5% at the end of 2022 and fibre deployment has increased recently. Mila fibre reaches Siglufjörður and Ólafsfjörður and Mila has commenced fibre deployment to residences are and companies in Siglufjörður.

1702. Mila connected local loops in the municipality were mostly copper local loops at the end of 2022. There is some use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 26% of bitstream connections in the municipality. The fact that there is a very small number of summerhouses in the municipality and that fewer than 80% of residences and workplaces use local loops, indicates that residences/companies are using mobile network connections, instead of fixed line connections.

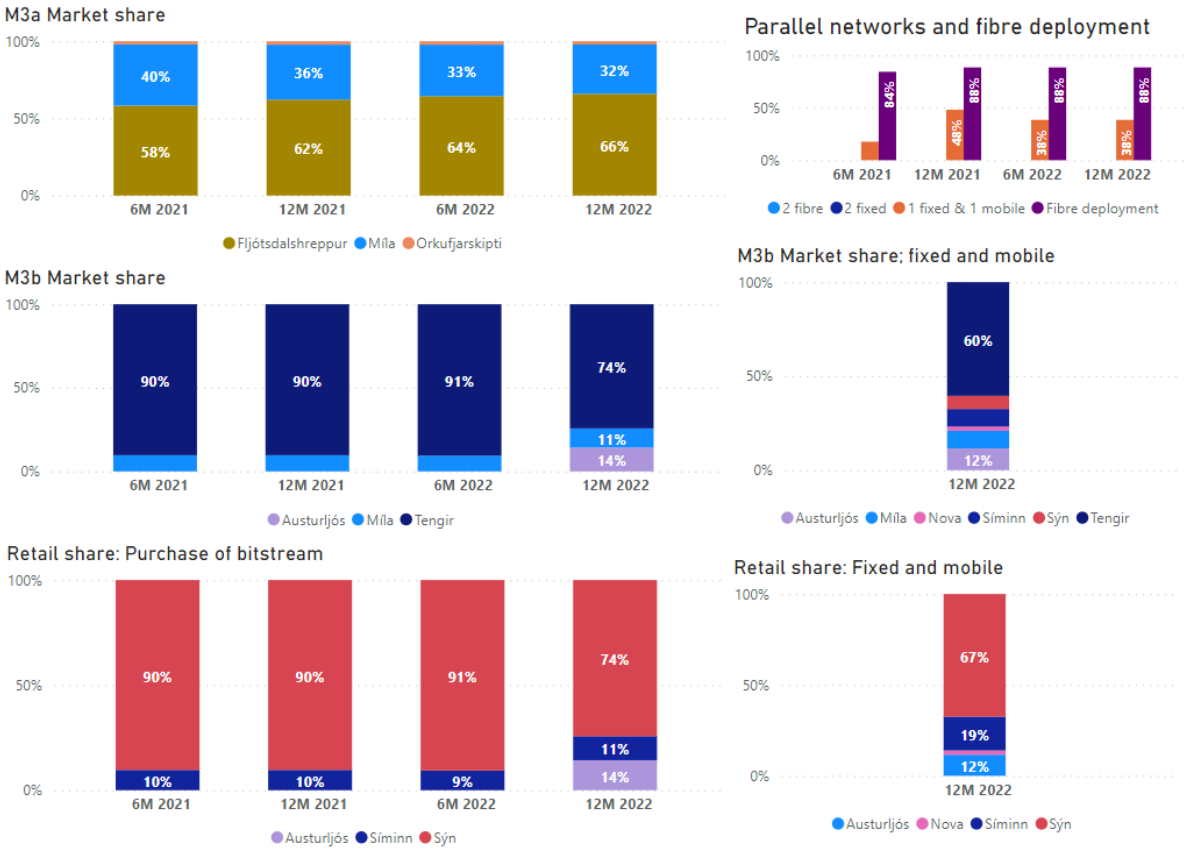
1703. Parallel coverage of fixed line networks has been increasing and was 43% at the end of 2022. One can expect parallel coverage of fibre networks in Siglufjörður, given work being done by Mila and Tengir.

1704. Mila had 65% market share on the relevant wholesale market at the end of 2022 and Mila share has been on the decline in recent times, having been 73% in mid-year 2021. At that location, Tengir has reached 35% market share. ECOI considers it likely that the strong position of Mila will weaken somewhat, although one can expect some continued reduction in share.

1705. The situation at retail level is not good where Siminn has 64% market share, and the next party has 24% share. This means that there is an effect from the connection of interests between Mila and Siminn, which at least in part exhibits the characteristics of vertical integration.

1706. In Fjallabyggð, ECOI assesses the situation such that Mila has significant market power, and that parallel coverage will not increase in such a manner that this position will change during the lifetime of the analysis. This means it is likely that the strong Mila position will continue to prevail for an extended period of time. It cannot be seen that countervailing buying power of any party can significantly impair Mila market power. ECOI considers it therefore necessary to impose appropriate obligations on Mila in the municipality.

6.2.13 Fljótsdalshreppur



1707. In Fljótsdalshreppur, the total number of connected local loops was 47 at the end of 2022 and the municipality is thus one of the least populated municipalities in the country. In this area there is a local fibre network owned by the municipality, which reached 88% of residences and workplaces at the end of 2022, or 97% if one only counts residences. The Fljótsdalshreppur fibre network was built by the municipality. Tengir has operated bitstream service on the network for some time, but Austurljós took over operation of the bitstream service from Tengir in 2023.

1708. Mila has not deployed fibre in the municipality and such fibre roll-out does not appear in Mila official plans. Mila connected local loops in the municipality were thus copper local loops at the end of 2022.

1709. There is a very small number of connected mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 19% of bitstream connections in the municipality. There are very few summerhouses there and the number of mobile network connections is similar in number to the summerhouses. The number of active local loops against the number of residences and workplaces is 90%, which does not indicate indirect impact from mobile networks.

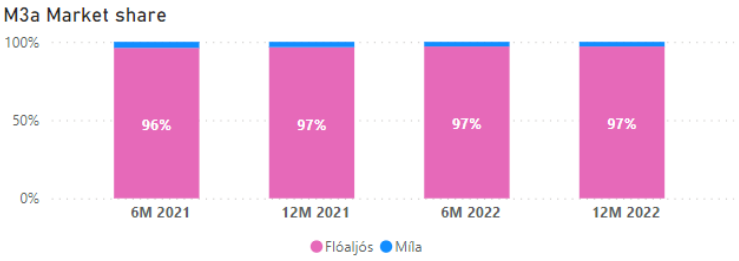
1710. There is no parallel network coverage in the municipality and as there is no urban area in the municipality, ECOI does not expect that this will happen during the period of validity of the analysis.

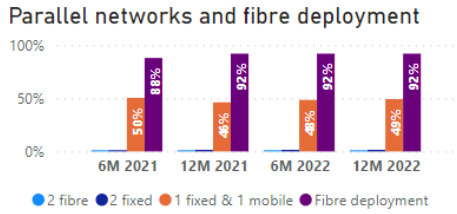
1711. 32% market share on the relevant wholesale market at the end of 2022 and Mila share has been on the decline in recent times, having been 40% in mid-year 2021. ECOI considers it likely that the reduction of Míla share will slow down, one can nevertheless expect some continued reduction in share. The municipality network had on the other hand, 66% market share at the end of 2022 which has been on the increase recently.

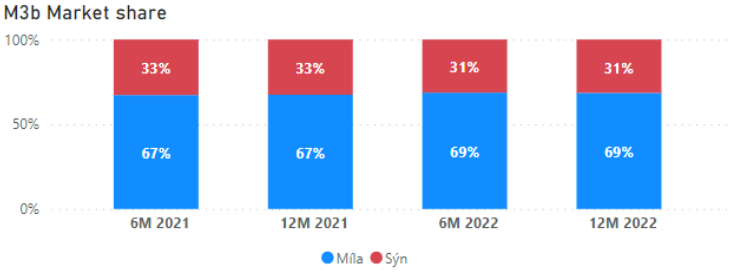
1712. The position on the retail market is not good in the municipality were Sýn has 67% market share against 19% of the next party.

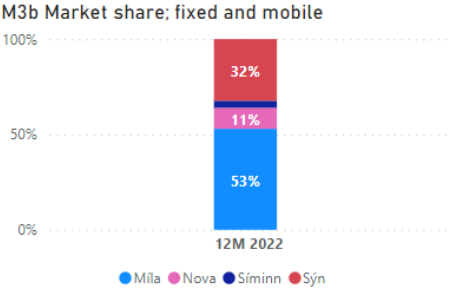
1713. Fljótsdalshreppur has 66% market share, and it is not expected that this share will decrease in the future. ECOI however considers there to be no grounds to designate Fljótsdalshreppur as having market dominance. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Then Austurljós, after the company took over operation of the bitstream system from Tengir in 2023, has strong countervailing buying power vis-à-vis the network as the only operator of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will therefore also be lifted.

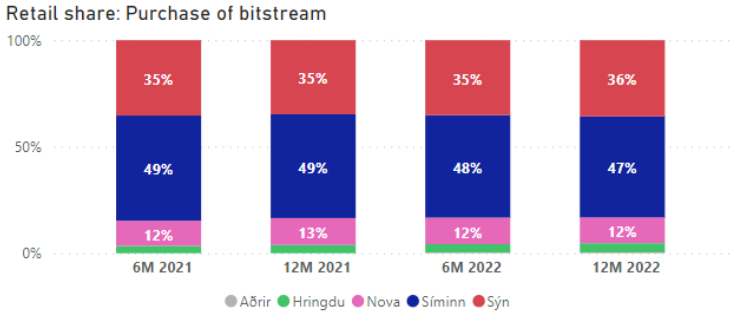
6.2.14 Flóahreppur

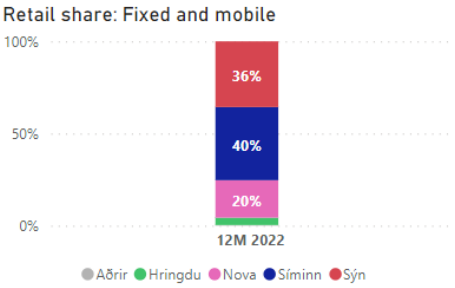












1714. In Flóahreppur, the total number of connected local loops was about 236 at the end of year of 2022. There is a local fibre network, Flóaljós, owned by the municipality which reached 92% of residences and workplaces at the end of 2022. The Flóaljós fibre network was developed by the municipality and also enjoyed state support. The fibre network has been operated as an open network, where Mila and Sýn have operated bitstream service on the network.

1715. Fibre deployment or other parties in the municipality is almost none and fibre deployment has stagnated in recent times.

1716. There are very few Mila connected copper local loops. There is some use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 23% of bitstream connections in the municipality. There is a number of summerhouses in the municipality, but they are more than the number of mobile network connections. In the opinion of ECOI, there is no indirect competitive impact from mobile networks on market 3a, and the proportion of active local loops of residences and workplaces is 90%.

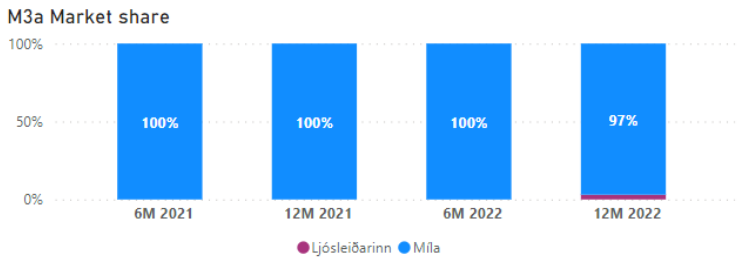
1717. Parallel coverage of fixed line networks in the municipality is negligible and it is unlikely that this will change while the analysis is in force.

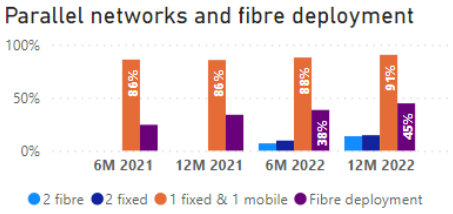
1718. Flóaljós has 97% market share, and it is not expected that this share will decrease in the future.

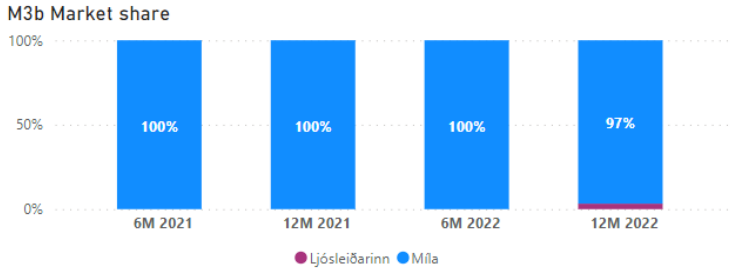
1719. The situation at retail level is quite good in the municipality where Siminn has 40% market share, Sýn 36%, Nova has 20% and others have 4%.

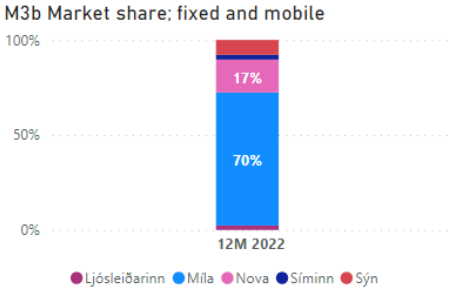
1720. Flóaljós has 97% market share, and it is not expected that this share will decrease in the future. ECOI however considers there to be no grounds to designate Flóaljós as having market dominance. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila and Ljósleiðarinn, after the agreement of Ljosleidarinn's purchase of Syn's network becoming valid, have strong countervailing buying power vis-à-vis the network as the only operators of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this sparsely populated district. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be lifted.

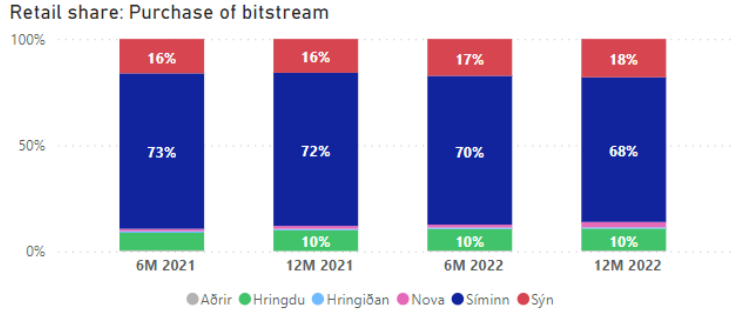
6.2.15 Grindavíkurbær

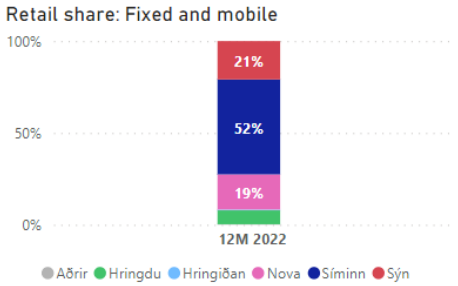












1721. In Grindavíkurbær in Suðurnes the total number of connected local loops was about 1,140 at the end of year of 2022. There is a fibre network owned by Mila which reached 44% of residences and workplaces at the end of 2022. Mila purchased from the municipality the fibre network that was built with a grant from the Telecommunications Fund and that network covers the rural area in the municipality. In the municipality urban nucleus, Grindavík, Mila has commenced fibre deployment.

1722. Ljósleiðarinn and Mila have decided to enter into cooperation for deploying fibre in Grindavík, which was to commence in 2023 but it was only intended to cover the part of Grindavík to which Mila has yet to roll out fibre. The company's fibre reached 15% of residences and workplaces at the end of year of 2022. It is now however clear that the earthquakes and volcanic activity has taken place in Grindavík and surrounding area during the past months and which will doubtless continue for an indefinite period of time, mean that all plans for fibre deployment are not likely to be realised, at least not in the near future and even in the coming years, and the number of active connections in the municipality has probably decreased as a result of damage.

1723. Mila connected copper local loops are a large proportion of Mila local loops in the area, about 60% at the end of 2022. There is considerable use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 28% of bitstream connections in the municipality at the end of 2022. There are on the other hand, very few summerhouses in the municipality, so one can assume that some proportions of residences/companies are using mobile network connections, instead of fixed line network connections.

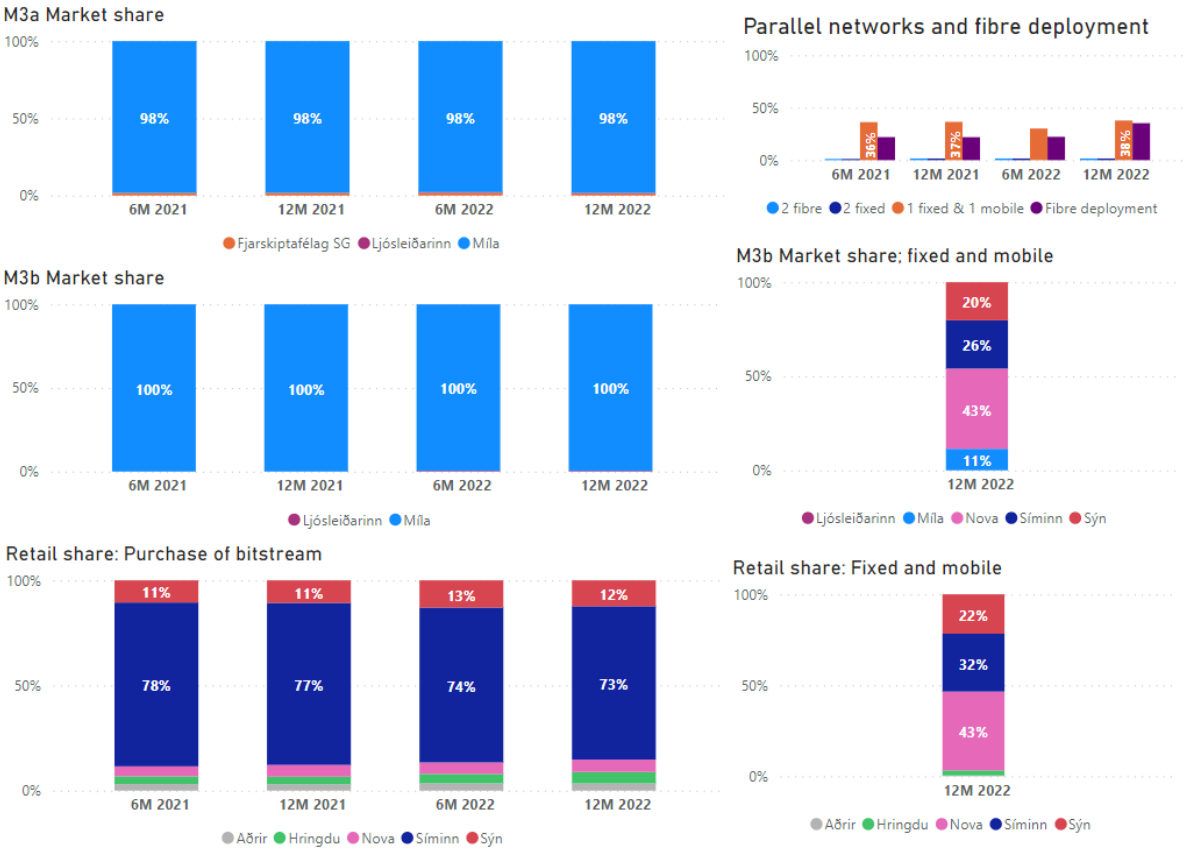
1724. ECOI is not expected that there will be parallel network coverage in the rural area on this one can express that the Mila position there remains unchanged.

1725. Mila had 90% market share at the end of 2022 and 96% in mid-2023 (see Appendix C). Is not expected that the sheer will decrease significantly during the period of validity of this analysis despite a significant reduction in connections.

1726. The situation at retail level is not good in the municipality where Siminn has 52% market share, and the next party has 21% share. This therefore indicates characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens Mila's position in the municipality.

1727. As Mila will continue to have prominence in the municipality's urban areas, ECOI considers that to be every indication that Mila will retain the significant market power that the company has enjoyed in the municipality. ECOI therefore considers it necessary to impose appropriate obligations on Mila in this municipality on the relevant market.

6.2.16 Grímsnes- og Grafningshreppur



1728. In Grímsnes- og Grafningshreppur, the total number of connected local loops was about 224 at the end of year of 2022. There is a fibre network owned by Mila which reached 32% of residences and workplaces at the end of 2022. The fibre network was, at least in part, built in cooperation with the municipality and enjoyed state support. There are not many urban areas in the municipality, Borg and Sólheimar, which have not received fibre roll-out, but there is VDSL service from Mila at those locations [...].

1729. Fibre deployment by other parties in the municipality is almost non-existent.

1730. Mila connected copper local loops are a large proportion of Mila local loops in the area, about 47% at the end of 2022.

1731. Parallel coverage of fixed line networks in the municipality is negligible and it is unlikely that this will change while the analysis is in force.

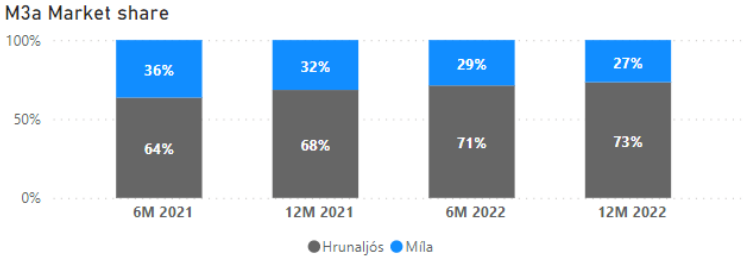
1732. Míla has 98% market share, and it is not expected that this share will decrease in the future.

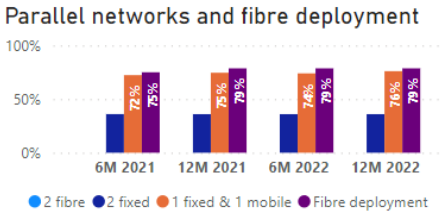
1733. There is much use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 53% of bitstream connections in the municipality. This is mostly because of the number of summerhouses in the municipality, where summerhouses are ten times more numerous than residences and workplaces.

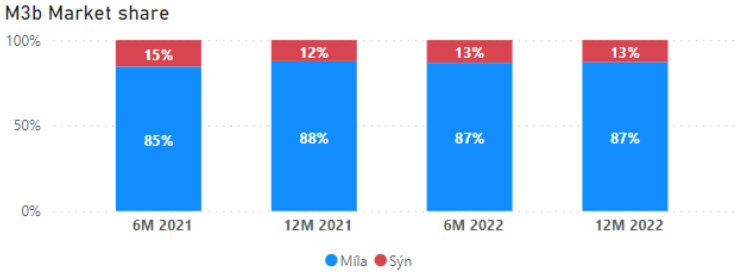
1734. The situation at retail level is quite good in the municipality where Nova has the highest market share at 43%, Siminn is next with 32%, Sýn has 22% and Hringdu has 3%. As previously stated, there is a high incidence of mobile network solutions in this municipality, and if one only considered market share in fixed line networks, Siminn has an overwhelmingly dominant market share.

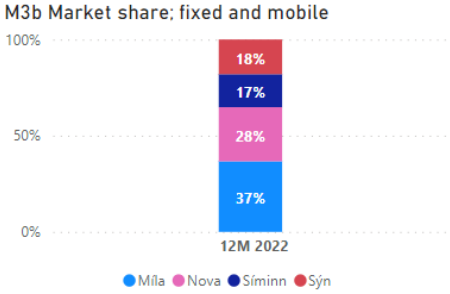
1735. Mila has an overwhelmingly dominant market share on the relevant market, 98%, and this has remained unchanged during recent times. In the municipality there is almost no parallel coverage by fixed line networks, and this is not expected to be the case during the expected lifetime of the analysis. With the above in mind, ECOI maintains the designation of Mila as having significant market power on the relevant wholesale market. ECOI therefore considers it necessary to impose appropriate obligations on Mila in Grímsnes- og Grafningshreppur on the relevant market.

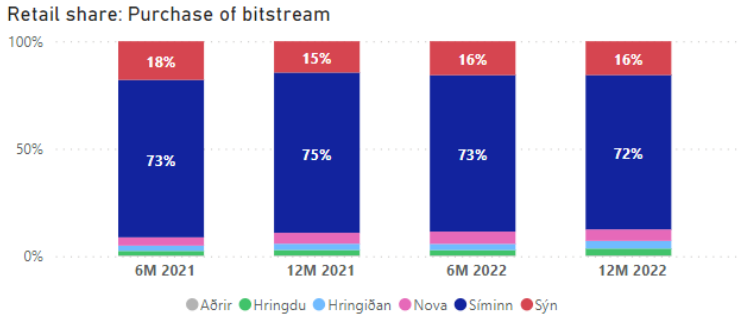
6.2.17 Hrunamannahreppur

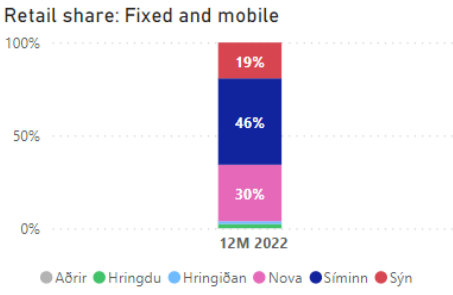












1736. In Hrunamannahreppur in South Iceland, the total number of connected local loops was about 322 at the end of 2022. There is a local fibre network, Hrunaljós, in that area owned by the municipality which reached 76% of residences and workplaces at the end of 2022 and about 92% of homes. The Hrunaljós fibre network was developed by the municipality and enjoyed state support. The fibre network has been operated as an open network, where Mila and Sýn have operated bitstream service on the network.

1737. Fibre deployment by other parties in the municipality is almost non-existent[363]. Fibre deployment in the municipality is 79% when one considers residences and workplaces, but currently 94% of residences have access to fibre. One can therefore say that fibre has been deployed to a large extent in Hrunamannahreppur.

1738. Most Mila local loops are copper local loops, where copper local loops are 25% of local loops in the municipality. There is considerable use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 58% of bitstream connections in the municipality. There are many summerhouses in the municipality, slightly more than the residences and workplaces. In addition to being an agricultural area, with many summerhouses, one can also find a relatively large urban nucleus in the municipality, i.e. Flúðir.

1739. Parallel coverage of fixed line networks in the municipality is negligible and it is unlikely that this will change while the analysis is in force.

1740. The situation at retail level is quite good in the municipality where Siminn has 46% market share, Nova 30%, Sýn 19% and Hringdu has 5%.

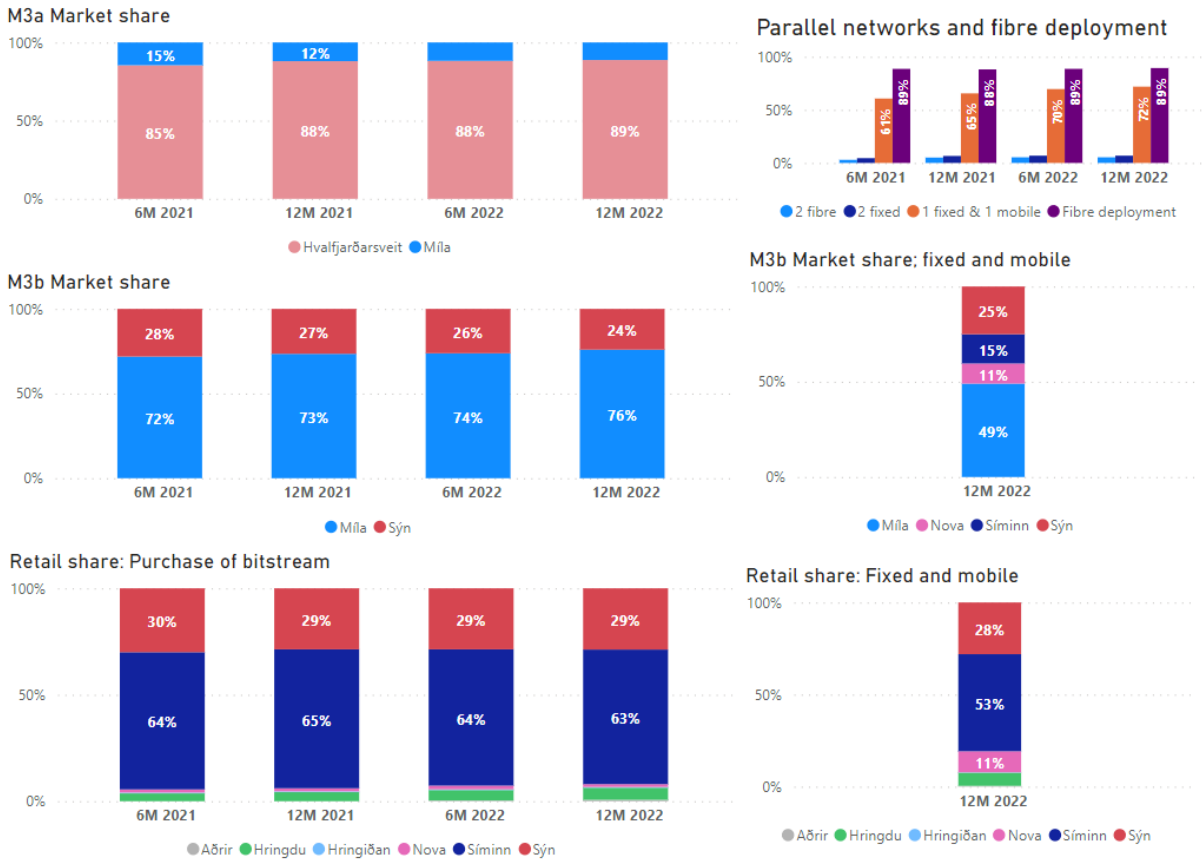
1741. Hrunaljós has 73% market share of the relevant wholesale market, which has been on the increase recently, and it is not expected that this share will decrease in the future.

1742. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila has strong countervailing buying power vis-à-vis the network, as by far the largest bitstream operator in the area. Sýn has also operated bitstream service there, which will transfer to Ljósleiðarinn should the merger take place, and the market share of the system is only 13% of the bitstream market. There is little likelihood that it would be financially feasible to have more bitstream systems in this very sparsely populated area.

1743. ECOI however considers there to be no grounds to designate Hrunaljós as having market dominance on this market. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be lifted.

[363] Míla had [...] active fibre connections at the end of 2022.

6.2.18 Hvalfjarðarsveit



1744. In Hvalfjarðarsveit, the total number of connected local loops was about 303 at the end of year of 2022. There is a fibre network in that area owned by the municipality which reached 68% of residences and workplaces at the end of 2022 and about 90% of residences. The Hvalfjarðarsveit fibre network was built by the municipality. The fibre network has been operated as an open network, where Mila and Sýn have operated bitstream service on the network.

1745. Fibre deployment by other parties in the municipality is small, but Mila does have fibre to 13% of residences and workplaces, while Ljósleiðarinn has 5% to residences and workplaces, and fibre deployment has stagnated recently. Nor can one see that there are plans with Mila or other parties to deploy fibre in the area.

1746. The number of Mila fibre local loops is slowly increasing, although they are not many, while copper local loops are on a rapid decline and were only 4% of local loops in the municipality at the end of 2022. There is considerable use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 35% of bitstream connections in the municipality.

1747. Parallel coverage of fixed line networks in the municipality is very limited and it is unlikely that this will change while the analysis is in force.

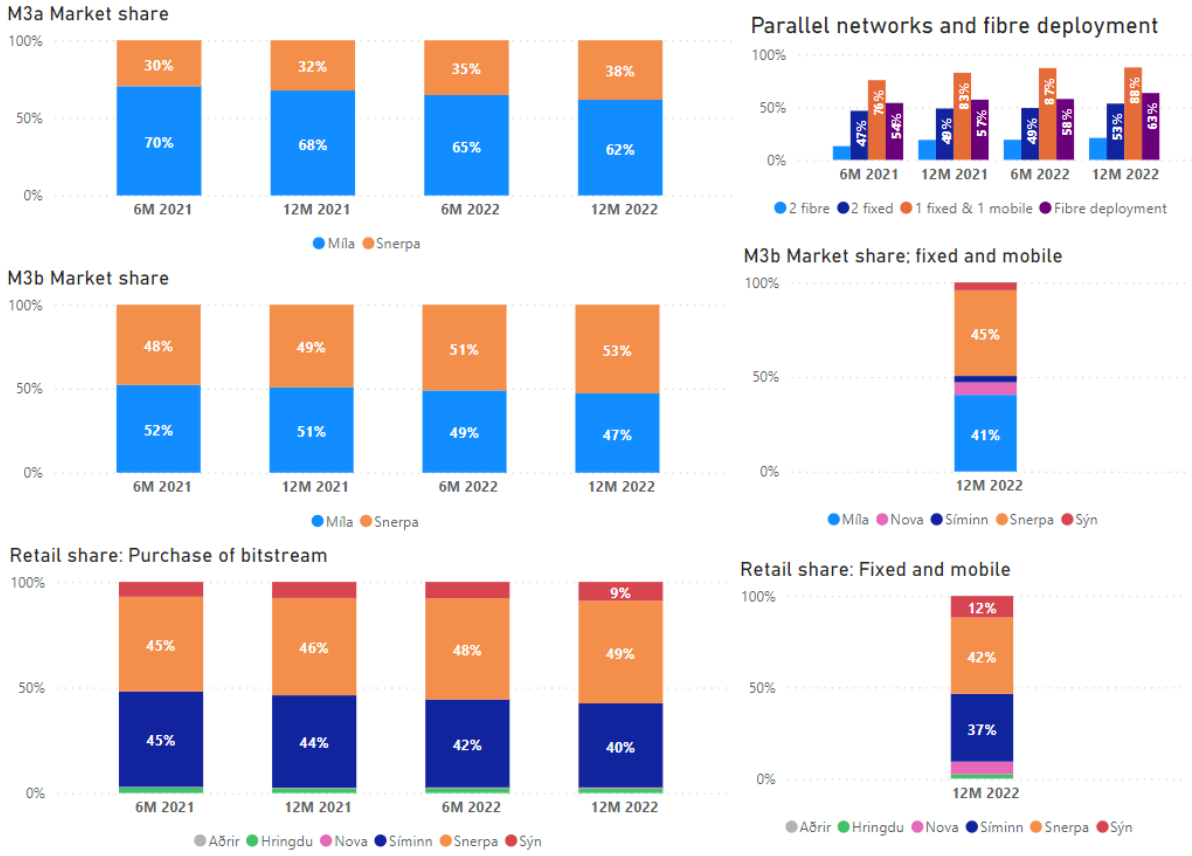
1748. Hvalfjarðarsveit has 89% market share in the relevant market which has increased recently. It is not expected that this share will decrease in the future.

1749. The situation at retail level is not very good, given the description on market share where Siminn has 53%, the next party has 38% in the third has 11%.

1750. Hvalfjarðarsveit has 73% market share of the relevant wholesale market, which has been increasing recently, and it is not expected that this year will decrease in the future. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila has strong countervailing buying power vis-à-vis the network, as by far the largest bitstream operator in the area. Sýn has also operated bitstream service there, which will transfer to Ljósleiðarinn now that the merger has taken place, and the market share of the system is only 24% of the bitstream market. There is little likelihood that it would be financially feasible to have more bitstream systems in this very sparsely populated area.

1751. In the light of the above, ECOI considers there to be no grounds to designate Hvalfjarðarsveit as having market dominance on this market. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will also be lifted.

6.2.19 Ísafjarðarbær



1752. In Ísafjarðarbær, the total number of connected local loops was about 1,760 at the end of year of 2022. Snerpa deployed fibre in the rural area for the municipality and the company has continued to deploy fibre to the urban area. The company's fibre reached 59% of residences and workplaces at the end of year of 2022. According to information from Snerpa, access by other electronic communications companies to the company's fibre is possible but no electronic communications company has yet connected to the company's fibre network.

1753. Mila fibre deployment in the municipality was less than 26% at the end of 2022 and has increased recently.

1754. Connected Mila local loops are to a large extent copper local loops and copper local loops were half of the connected local loops in the municipality at the end of 2022. Snerpa is using Mila local loops to provide bitstream service.

1755. There is some use of mobile network routers, the share of connections over mobile network routers is about 14% of bitstream connections the municipality. The number of connections over mobile network routers is more than the number of summer houses in the area, so one must consider it likely that there is indirect competitive pressure, though it is not substantial.

1756. Parallel coverage of fixed line networks was 53% at the end of 2022 and has slowly increased with Snerpa fibre roll-out, while parallel fibre coverage was at the same time 21%.

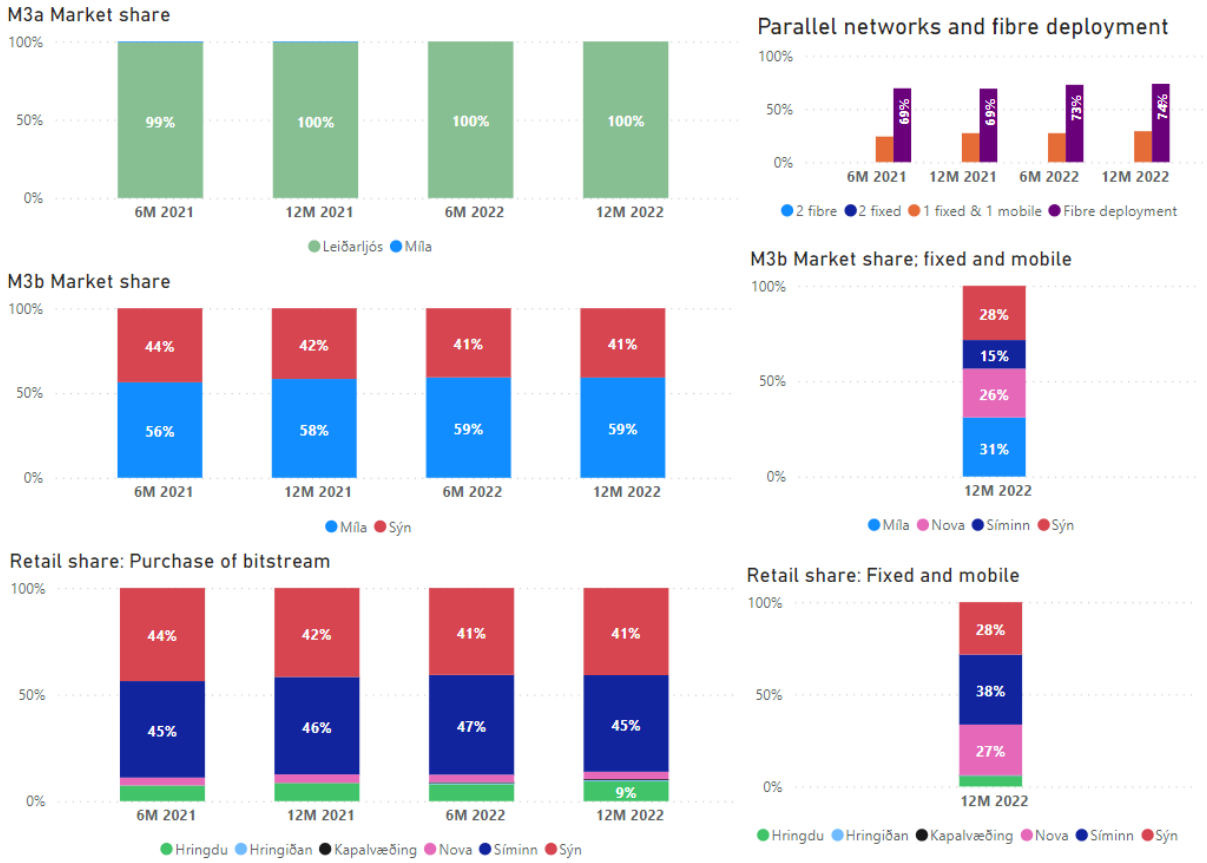
Mila market share has been on the decline and had dropped to 62% at the end of 2022 but was 70% in mid-2021.

1757. As stated in section 6.3.2 here later, Ísafjarðarbær falls under the category of likely competition on market 3b, and Snerpa market share is based partly on access to Mila copper local loops as [...]% bitstream connections at the end of 2022 were based on Snerpa access to the Mila copper network. There is nothing to indicate that the parallel coverage that was commenced in urban Ísafjarðarbær will not continue and at the end of last year, 63% of residences and companies had access to one fibre network while 21% had access to fibre from two network operators.

1758. The situation at retail level is quite good in the municipality where Snerpa has the highest market share, about 42%, while Siminn has 37% market share. The third party then has 12% and others have a total of 9%.

1759. ECOI considers from a forward-looking perspective, that the tendency is towards effective competition on market 3a in Ísafjarðarbær and that this will continue throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this municipality.

6.2.20 Kjósarhreppur



1760. In Kjósarhreppur, the total number of connected local loops was about 204 at the end of year of 2022. There is a local fibre network, Leiðarljós owned by the municipality which reached 74% of residences and workplaces at the end of 2022. The Leiðarljós fibre network

was developed by the municipality and its deployment enjoyed state support. The fibre network has been operated as an open network, where Mila and Sýn have operated bitstream service on the network.

1761. There is no fibre deployment by other parties in the municipality.

1762. There are no longer any copper local loops on offer in the municipality. There is much use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 48% of bitstream connections in the municipality. This is mostly because of the number summer houses in the municipality, where summerhouses are just under 6 times more in number than residences and workplaces. It is worthy of note that a considerable number of summerhouses have fibre in the municipality, i.e. about 28%.

1763. There is no parallel coverage of fixed line networks in the municipality, and it is unlikely that this will change while the analysis is in force.

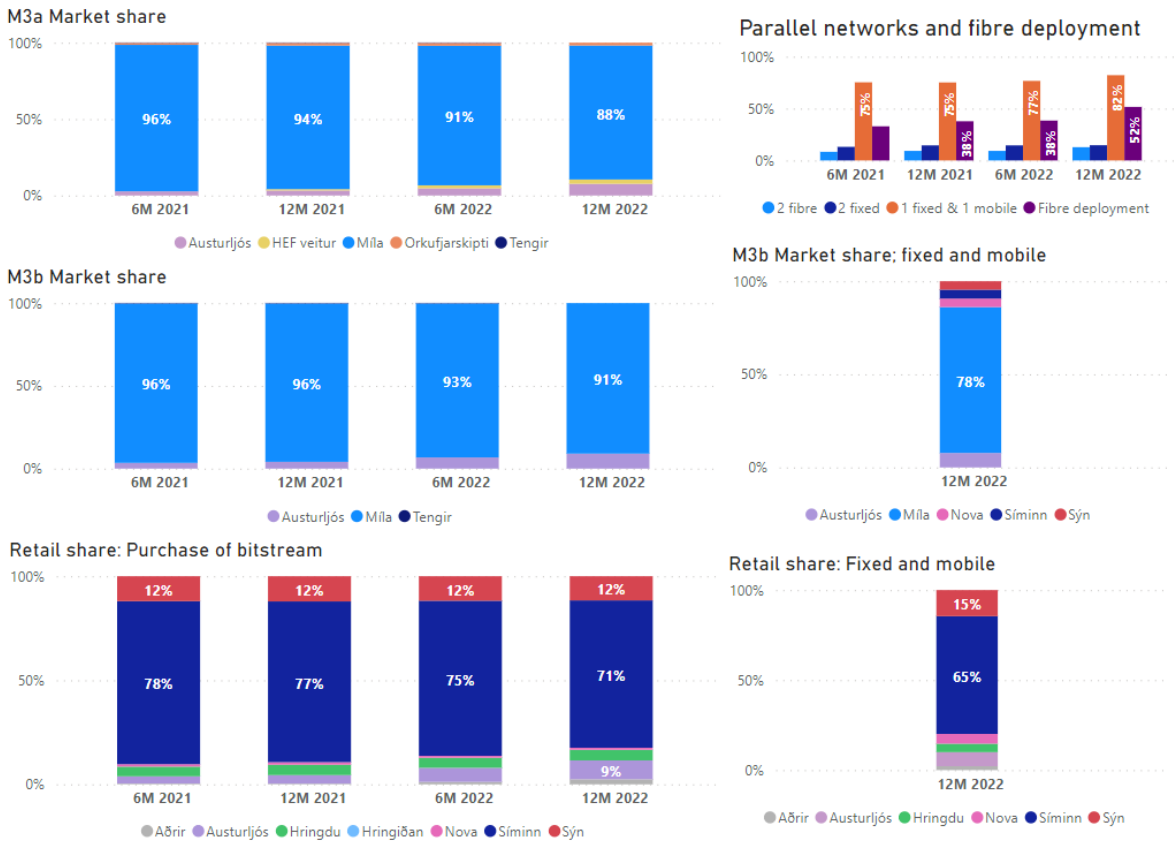
1764. The situation on the retail market is quite good where Siminn has 38% market share, Sýn 28%, Nova has 27% and others have 7%.

1765. Leiðarljós market share is 100% on this market and one cannot expect this to change in the near future. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila and Ljósleiðarinn have strong countervailing buying power vis-à-vis the network as the only operators of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district.[364]

1766. ECOI considers there thus to be no grounds to designate the fibre network of the municipality in question as having significant market power. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will therefore also be lifted.

[364] Sýn bitstream service will probably mostly or entirely be transferred to Ljósleiðarinn if CA endorses the Ljósleiðarinn purchase of the Sýn trunk line network.

6.2.21 Múlaþing



1767. In Múlaþing, the total number of connected local loops was about 2,270 at the end of year of 2022. There is a number of local fibre networks in that area, and Mila is most advanced in fibre roll-out in the municipality where the Mila fibre network reaches 39% of residences and workplaces. Austurljós has also rolled out fibre in the municipality, mainly at Egilsstaðir urban nucleus, and the Austurljós fibre network reaches 14% of residences and workplaces in the municipality. HEF veitur, which is owned by the municipality has also rolled out fibre in the municipality and this company's fibre network reached 10% of residences and workplaces. A network named after Djúpavogshreppur municipality is a small local network in the countryside close to Djúpavík which reaches 1.2% of residences and workplaces in the municipality. This network was deployed in cooperation with Orkufjarskipti and is operated by that company.

1768. Most Mila local loops are copper local loops, where copper local loops are 66% of local loops in the municipality. Mila has plans for further fibre roll-out in the municipality and on the basis of Mila plans. The Mila fibre will reach [...]. In the short-term, Mila plans are limited to Egilsstaðir and Seyðisfjörður.

1769. Múlaþing is an expansive municipality and the main urban nuclei in the municipality are: Egilsstaðir, Seyðisfjörður, Fellabær, Neskaupsstaður, Djúpivogur and Borgarfjörður eystri. Egilsstaðir is the most populous urban nucleus in this area and in Fellabær, Austurljós and HEF veitur have rolled out fibre. They have no plans to roll out fibre outside their territory. Mila on the other hand, has fibre to all of these urban nuclei and VDSL services are also provided to most residences.

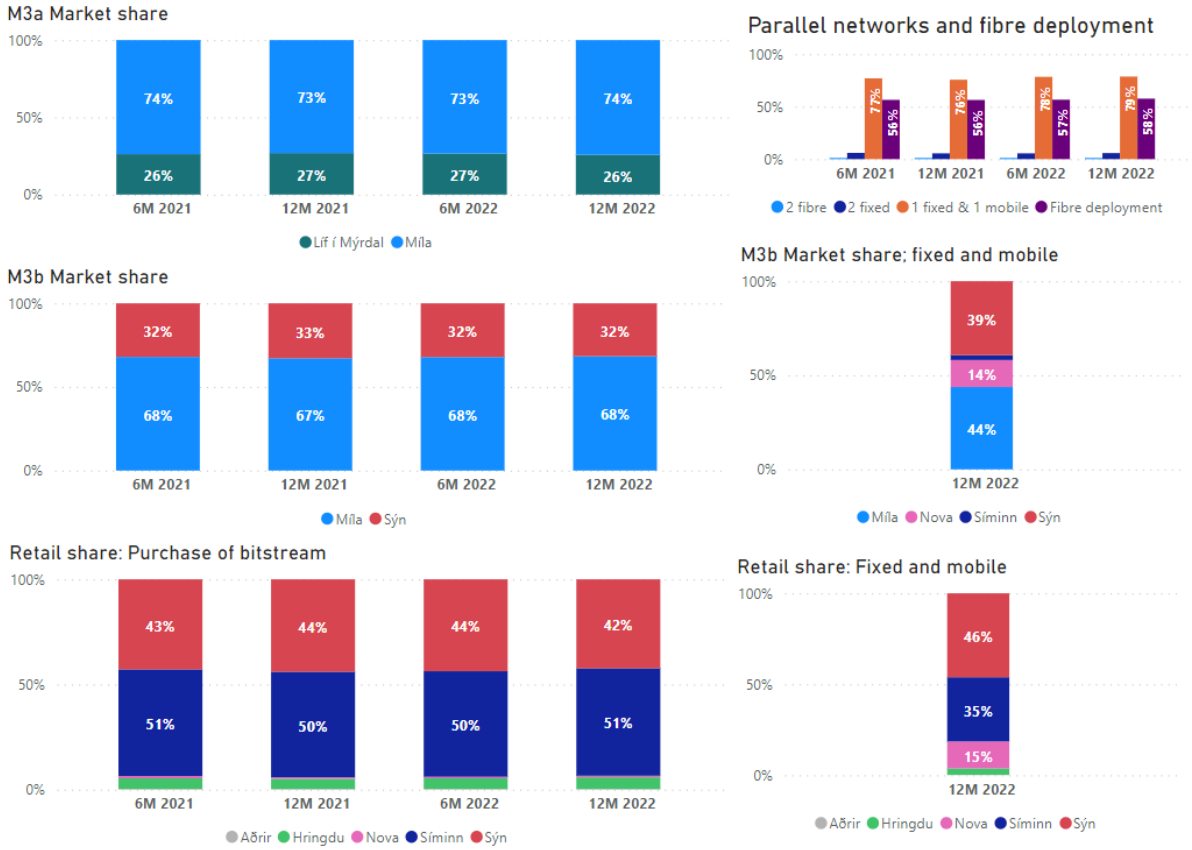
1770. ECOI does not expect that parallel fibre coverage will be in place during the lifetime of the market analysis, except at Egilsstaðir and Fellabær.

1771. There is some use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 14% of bitstream connections in the municipality. There are not many summerhouses in the municipality, a similar number to the number of mobile network connections. In the opinion of ECOI, there is not much indirect competitive impact from mobile networks, but active local loops only reach 87% of residences and workplaces. ECOI however considers that the impact of mobile networks does not have a significant effect on the large Mila market share in the area.

1772. The state of competition at retail level is not good in the municipality where Siminn has 65% market share, and the next party has 18%. This means that there is an effect from interest connections between Mila and Siminn, which at least in part exhibits the characteristics of vertical integration.

1773. ECOI deems Mila to have significant market power in Múlaþing. Parallel coverage of fixed line networks is small and the Mila share in 3a is very large, i.e. 88%, and it is not expected that this will change much during the expected lifetime of the analysis. It cannot be seen that there is any great likelihood that potential competition will change the situation significantly at that location during the lifetime, nor can it be seen that countervailing buying power of any party can significantly impair Mila market power. ECOI therefore considers it necessary to impose appropriate obligations on Mila in this municipality on the relevant market.

6.2.22 Mýrdalshreppur



1774. In Mýrdalshreppur, the total number of connected local loops was about 330 at the end of year of 2022.

1775. Mila operates its copper network there and has commenced fibre deployment in the municipality, where Mila fibre reached 31% of residences at the end of 2022. Mila fibre network has grown in recent months and ECOI expects that Mila fibre deployment will continue. Given Mila plans, one can expect that the Mila network will reach [...].

1776. There is one local fibre network in the municipality, Líf í Mýrdal, which did not enjoy state support and that fibre network reached 28% of residences and workplaces at the end of 2022. Deployment of this network has stagnated and Ljósleiðarinn purchased the network this year.

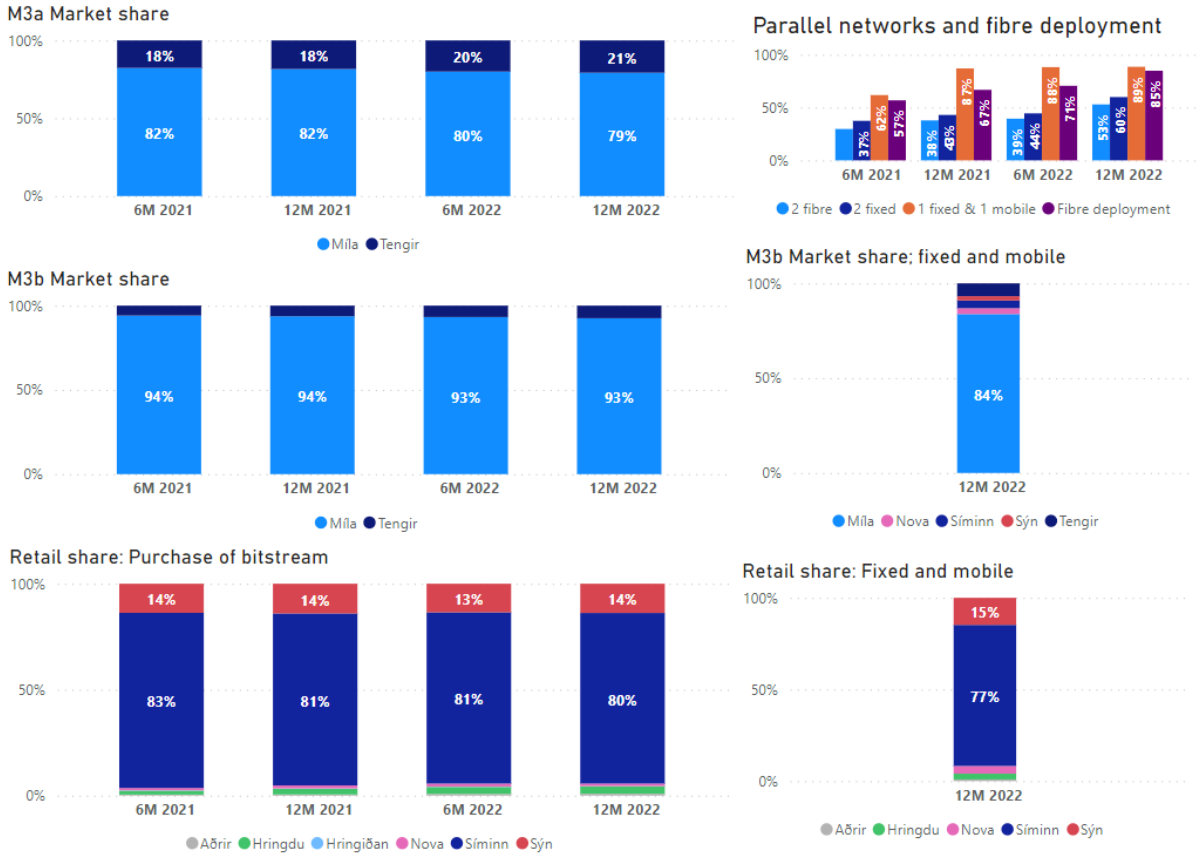
1777. Most Mila local loops are copper local loops, where copper local loops are 53% of local loops in the municipality. There is sizeable use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 36% of bitstream connections in the municipality. There are not many summerhouses in the municipality, fewer than the number of mobile network connections. In the opinion of ECOI, there is no indirect competitive impact from mobile networks, and the proportion of active local loops to residences and workplaces is 84%. ECOI therefore considers that one should take account of this impact when the Mila market share in the area is assessed, although it measures at 74% as it is based to a significant degree on copper local loops and 5G deployment has increased in that location as Siminn, Sýn and Nova have now installed 5G transmitters at Vík.

1778. The urban nucleus in the municipality is Vík í Mýrdal which contains 69% of residences and workplaces in the municipality. Mila has also taken part in fibre roll-out in that area and continued with that project during this year. Ljósleiðarinn requested participation in this project and plans to deploy fibre to [...] addresses in the municipality this year, which is about [...]% of addresses in Vík. ECOI does not have information about Ljósleiðarinn plans for further fibre deployment in Vík, although ECOI considers it likely that it will continue. There is therefore a tendency towards a significant increase in parallel coverage of networks in the municipality.

1779. When one considers retail competition, having taken into account mobile networks, the situation is quite good where Sýn has the highest market share as Sýn had active equipment on the Líf í Mýrdal network, in addition to offering mobile network service.

1780. ECOI considers from a forward-looking perspective, that the tendency is towards effective competition on market 3a in the municipality and that this will continue throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this municipality.

6.2.23 Norðurþing



1781. In Norðurþing, the total number of connected local loops was about 1,380 at the end of 2022.

1782. There is a fibre network owned by Tengir which reached 73% of residences and workplaces at the end of 2022. Part of the Tengir fibre network in the rural area was

developed in cooperation with the municipality and enjoyed state support. Given Tengir deployment plans in the municipality, one can expect that the Tengir network will reach [...]% of residences and workplaces at the end of 2025.

1783. Mila operates its copper network there and has commenced fibre deployment, where Mila fibre reached 64% of residences at the end of 2022. Mila fibre network has grown in recent months and ECOI expects that Mila fibre deployment will continue. Given Mila plans, one can expect that the Mila network will reach [...].

1784. Most Mila local loops are copper local loops, where copper local loops are 42% of local loops in the municipality, but they will decrease in the coming year or years in step with Mila fibre roll-out. There is little use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 9% of bitstream connections in the municipality. There are not many summerhouses in the municipality, a similar number to the number of mobile network connections. In the opinion of ECOI, there is not much indirect competitive impact from mobile networks, but active local loops only reach 89% of residences and workplaces. ECOI however considers that the impact of mobile networks does not have a significant effect on the large Mila market share in the area.

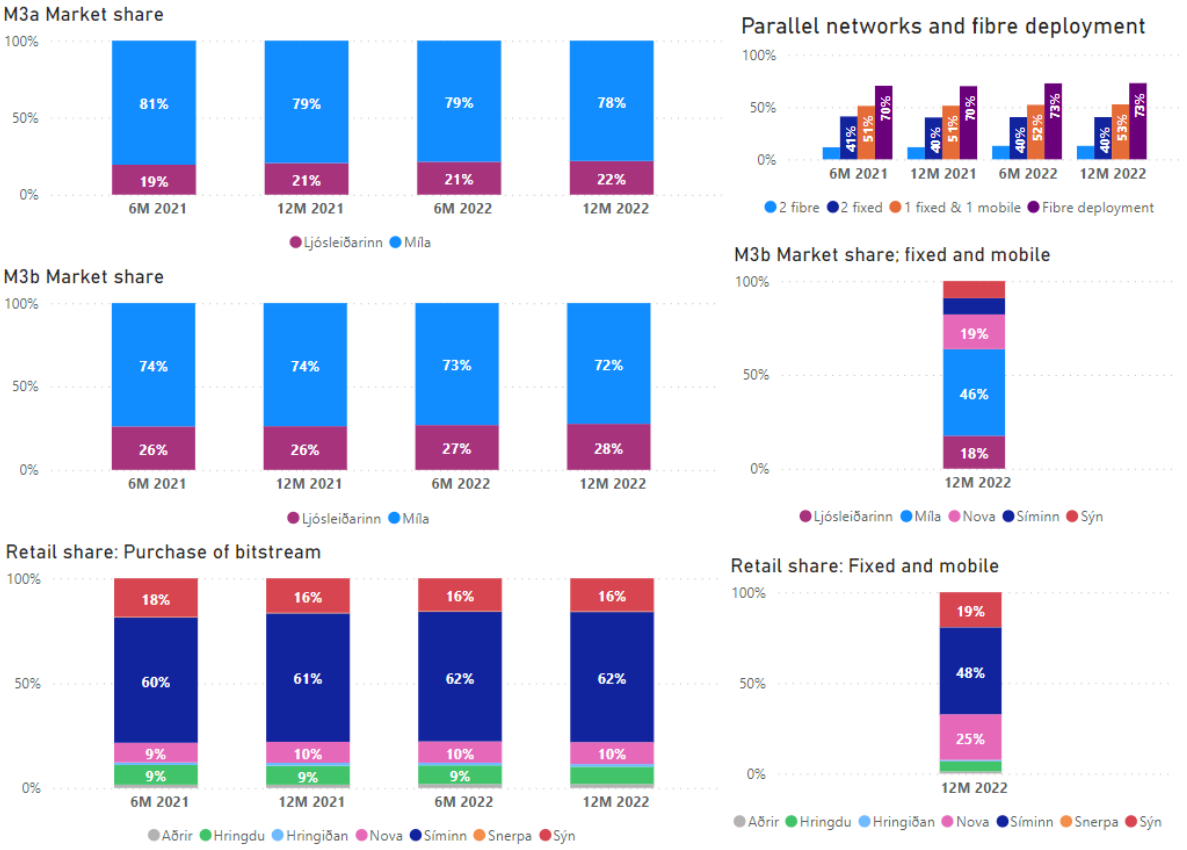
1785. The fibre networks of Mila and Tengir are only in part parallel, after these companies embarked on joint deployment in Húsavík and they are working together on deployment in Raufarhöfn. Uptake appears on the other hand, appears to be more with Mila than with Tengir and Mila has a significantly higher number of active fibre local loops than with Tengir where the Mila market share was 79% at the end of 2022 on the relevant market 3a.

1786. Síminn has been in a dominant position in this area in retail and has not shown interest in purchasing bitstream from Tengir[365] and instead purchases the relevant wholesale service from Mila to the extent possible. In this case, the characteristics of vertical integration identified by ECOI between the companies are manifest. It is therefore unlikely that the Mila position will change significantly while the market analysis is in force.

1787. Having taken the above into account ECOI designates Mila as a company with significant market power on market 3a in Norðurþing and considers it necessary to impose appropriate obligations on Mila in the municipality.

[365] [...].

6.2.24 Rangárþing eystra



1788. In Rangárþing eystra, the total number of connected local loops was just under 800 at the end of 2022.

1789. In that municipality, Mila operates the copper network and also has a fibre network, where Mila fibre reached 45% of residences at the end of 2022. Part of the Mila fibre network in the rural area, was developed in cooperation with the municipality and enjoyed state support. Mila has commenced fibre roll-out in the municipality's urban nucleus, Hvolsvöllur. ECOI expects that Mila deployment of fibre will continue, while the market analysis is in force.

1790. There is a fibre network owned by Ljosleiðarinn which reached 41% of residences and workplaces at the end of 2022. Ljósleiðarinn fibre roll-out only reaches the Hvolsvöllur urban nucleus, and ECOI does not expect further Ljósleiðarinn roll-out in the municipality.

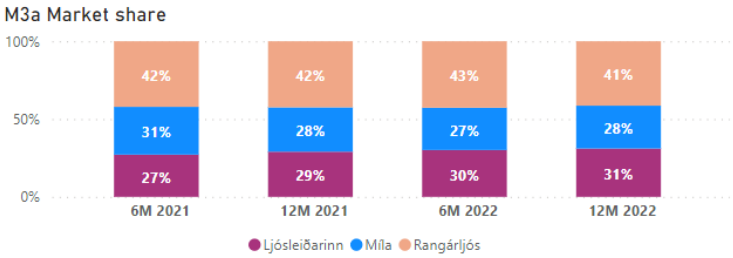
1791. Most Mila local loops are fibre local loops, about 48%, while copper local loops are had dropped to 30% of local loops in the municipality. There is substantial use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 36% of bitstream connections in the municipality. There are many summerhouses in the municipality, a similar number to the number of mobile network connections. In the opinion of ECOI, there is not much indirect competitive impact from mobile networks, and active local loops in residences and workplaces is 92%. ECOI however considers that the impact of mobile networks does not have a significant effect on the large Mila market share in the area.

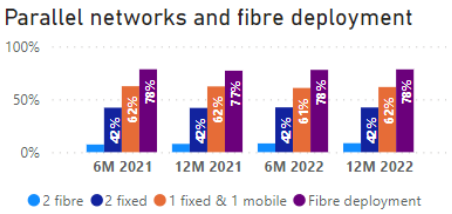
1792. Parallel coverage of fixed line networks is 40%, but that is only in Hvolsvöllur where the Ljósleiðarinn fibre network is in parallel to the Mila network. One can expect that Mila will continue to execute fibre roll-out in Hvolsvöllur during the lifetime of the analysis[366]. During that time, parallel fibre coverage will have been achieved in Hvolsvöllur but not in the rural area.

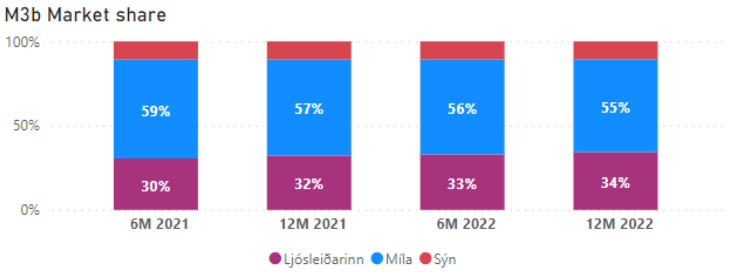
1793. Siminn has been in a rather strong position in the municipality in retail, where it has 48% market share, and the next party has 19%. Siminn is in an even stronger position, 62%, if one only takes into account the share in the fixed line network. This has an impact on the Mila market share in the light of the agreement between them.

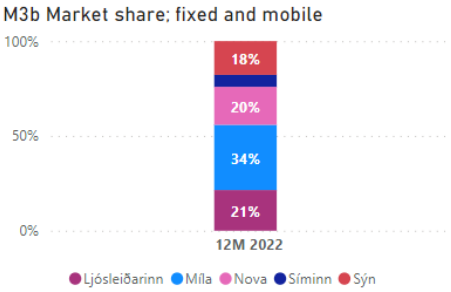
1794. Mila market share in Rangárþing eystra was 78% at the end of 2022 and has not changed much in recent months. ECOI does not expect parallel coverage to increase in the municipality and therefore likely that Mila will retain its strong position on the relevant market for an extended period of time. It cannot be seen that countervailing buying power of any party can significantly impair Mila market power. ECOI therefore assesses that Mila has the position of a company with significant market power in Rangárþing Eystra on market 3a, and that it is unlikely that this position will change during the lifetime of the analysis. ECOI therefore considers it necessary to impose appropriate obligations on Mila in this municipality.

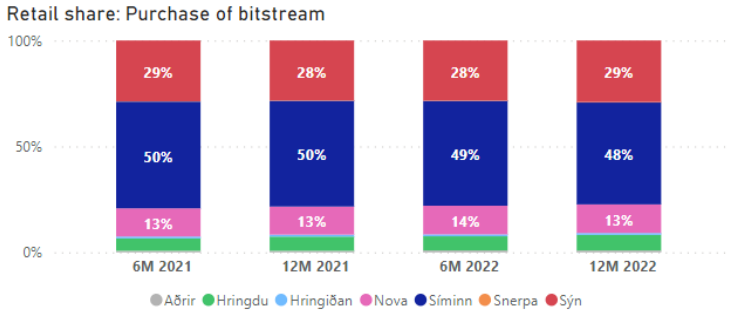
6.2.25 Rangárþing ytra

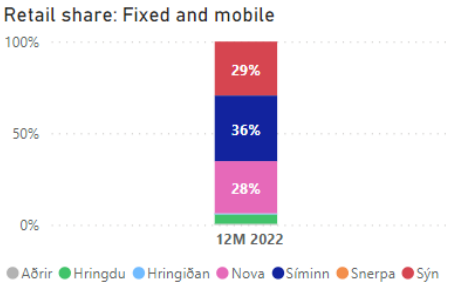












366 [...].

1795. In Rangárþing ytra, the total number of connected local loops was about 740 at the end of year of 2022. At that location there are fibre networks owned by Ljósleiðarinn, Rangárljós, and Mila that had respectively 41%, 35% og 12% fibre deployment to residences and workplaces at the end of 2022. The Rangárljós fibre network was developed by the municipality and its deployment enjoyed state support. The Rangárljós network covers the rural area and two small urban areas, Rauðalækur and Þykkvibær. Ljósleiðarinn has rolled out fibre to most of the largest urban area in the municipality, Hella.

1796. Fibre roll-out progresses slowly in the municipality and ECOI expects that there will only be parallel network coverage in Hella but not in rural areas or in Rauðalækur and Þykkvabær.

1797. Mila operates a copper network in the municipality and connected Mila copper local loops were 23 of the totals of number of local loops in the municipality at the end of 2022, while Mila fibre local loops were just over 4% of the total number of local loops. There is significant use of mobile network routers in the municipality, where the share of connections over mobile network routers is about 37% of bitstream connections in the municipality at the end of 2022. There is quite a number of summerhouses in the municipality, where the number of mobile network connections is significantly less than the number of summerhouses. The number of active local loops against the number of legal residences and workplaces is however only 82%, which indicates some indirect impact from mobile networks.

1798. Rangárljós has 41% market share, but it is not expected this share will diminish significantly while this analysis is in force. Rangárljós operates an open network and ECOI considers there to be no grounds to designate the Rangárljós network of the municipality in question as having significant market power. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Míla, Ljósleiðarinn and Sýn[367] have strong, countervailing buying power against the network as the only operators of bitstream service, which means that there is little likelihood that more bitstream systems could be financially viable in this very sparsely populated district.

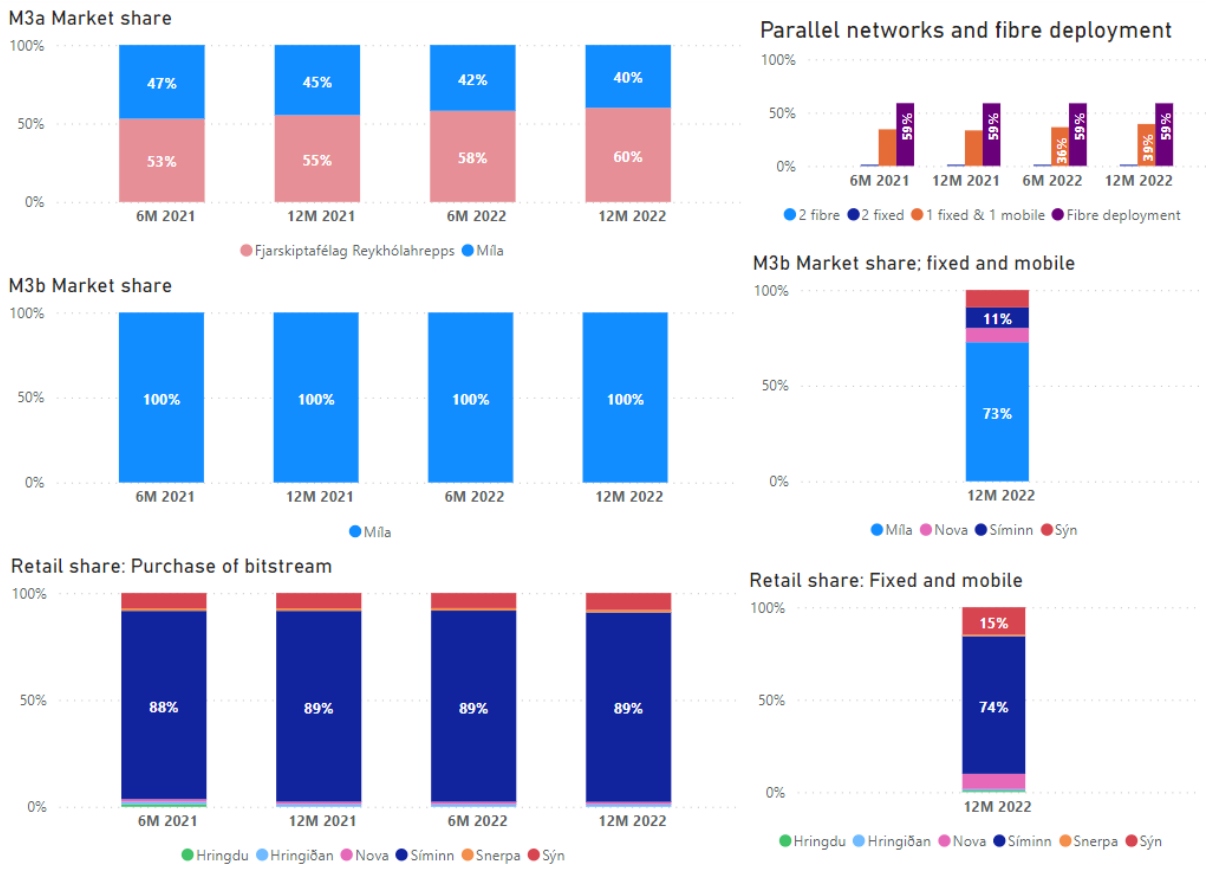
1799. ECOI considers that neither Mila nor Ljósleiðarinn will achieve market dominance in the main urban nucleus in the Hella municipality in the light of parallel coverage in that area.

[367] Sýn bitstream service will probably mostly or entirely be transferred to Ljósleiðarinn if CA endorses the Ljósleiðarinn purchase of their Sýn trunk line network.

When one considers retail competition, having taken into account mobile networks, the position is good by Icelandic standards and no party has more than 40% market share.

1800. ECOI considers from a forward-looking perspective, that the tendency is towards effective competition on market 3a in the municipality and that this will continue throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this municipality.

6.2.26 Reykhólahreppur



1801. In Reykhólahreppur, the total number of connected local loops was about 135 at the end of year of 2022.

1802. There is a local network in the area owned by the municipality, which is operated by Fjarskiptafélag Reykhólahrepps and which reached 58% of residences and workplaces at the end of 2022. The Fjarskiptafélag Reykhólahrepps fibre network was developed by the municipality and its deployment enjoyed state support. The Fjarskiptafélag Reykhólahrepps network reaches the rural area, and the municipality has plans for fibre roll-out to the Reykhólar urban area this year, or next, which will bring distribution of fibre in the municipality to over 90%.

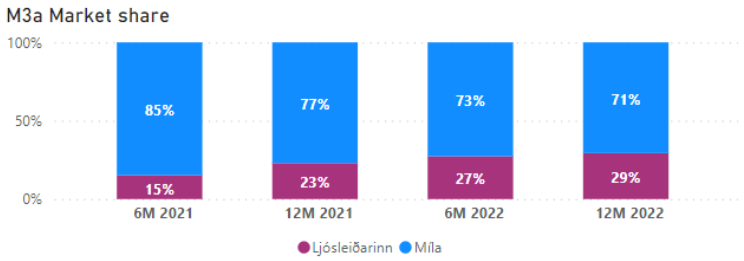
1803. Mila operates a copper network in the municipality and connected Mila copper local loops were 40% of local loops in the area at the end of 2022. The Fjarskiptafélag Reykhólahrepps fibre network will probably replace these Mila copper local loops. ECOI does not expect deployment of parallel fibre networks in the municipality.

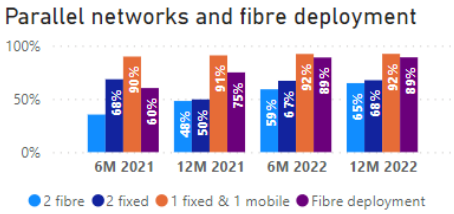
1804. Fjarskiptafélag Reykhólahrepps has 60% market share and ECOI expects that this will increase with the company's fibre roll-out to Reykhólar.

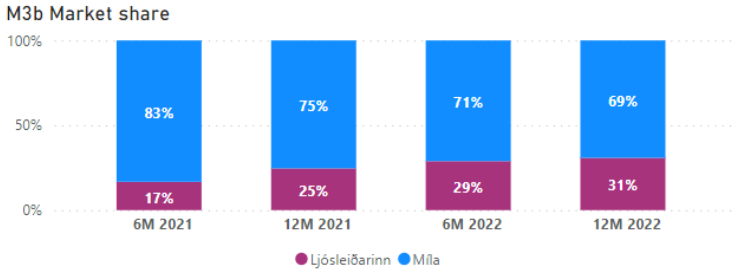
1805. ECOI considers there to be no grounds to designate Fjarskiptafélag Reykhólahrepps as having significant market power. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. Here one can furthermore refer to the Finnish case which was described in section 6.2.6 here above. The network is also subject to obligations in the state support rules for open wholesale access. This is a community project and clear that the municipality did not embark on the deployment in question in order to compete on the electronic communications market, but rather to support regional and employment development in this sparsely populated area with a small population. It is not a profit driven project, unlike that which applies to fibre deployment by parties like Mila, Ljósleiðarinn, Tengir and Snerpa. The behaviour of such parties is therefore significantly different from the above specified electronic communications companies that compete with each other. The municipality business model is based on an open business model for open access, non-discrimination and fair pricing. Mila has considerable countervailing buying power vis-à-vis the network as the only operator of bitstream service and therefore little likelihood that more bitstream systems would be financially feasible in this extremely sparsely populated district.

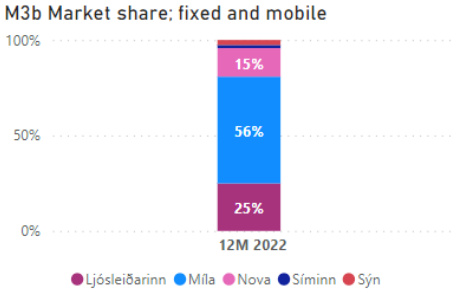
1806. The obligations that have rested on Mila will therefore be lifted in this municipality.

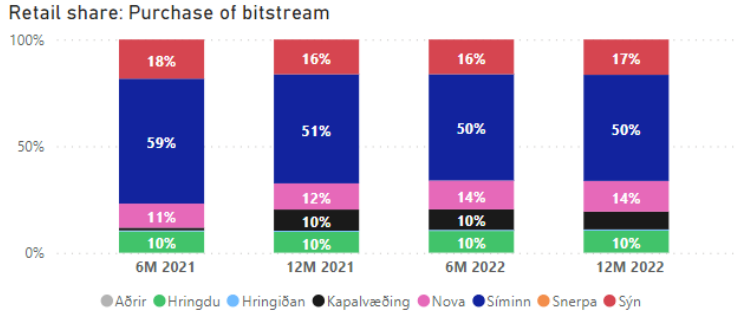
6.2.27 Reykjanesbær

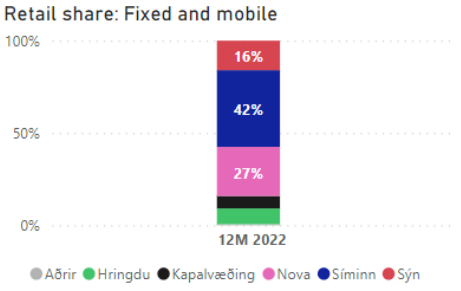












1807. In Reykjanesbær, the total number of connected local loops was about 7,270 at the end of year of 2022. Reykjanesbær is within Ljósleiðarinn operational territory.

1808. In this municipality, Mila operates both copper and fibre networks where the Mila fibre network reached 84% of residences and workplaces at the end of 2022. There is very little rural area in the municipality. ECOI expects that Mila deployment of fibre will continue during the period of validity of the market analysis and that the company will quickly achieve full deployment in the municipality.

1809. There is also a fibre network owned by Ljósleiðarinn which reached 70% of legal residences and workplaces at the end of 2022, and ECOI expects this fibre deployment to continue. Míla and Ljósleiðarinn have been jointly deploying to the municipality, but Mila has however an advantage over Ljósleiðarinn towards achieving full deployment.

1810. Parallel fibre coverage was 65% in the municipality at the end of 2022 and ECOI expects that this coverage will increase during the lifetime of the analysis.

1811. Mila operates a copper network in the municipality and connected Mila copper local loops were 20% of the total of number of local loops in the municipality at the end of 2022, while Mila fibre local loops were about 51%. This Mila switching from copper local loops to fibre local loops has been extremely rapid in recent months.

1812. There is some use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 19% of bitstream connections in the municipality at the end of 2022. There are very few summerhouses there and the number of mobile network connections is far greater than the number of summerhouses. The number of active local loops against the number of legal residences and workplaces is only 79%, which indicates considerable indirect impact from mobile networks.

1813. Competition at retail level is quite varied in the municipality where there is a local operator, Kapalvæðing that has operated a cable system and also offers service over local loops from Mila and Ljósleiðarinn. Siminn has the highest share at 42%, while the next party, Nova has 27% share. The competition situation at retail level is therefore quite good in the area in question by Icelandic standards.

1814. There are two strong operators on the wholesale markets, Mila and Ljósleiðarinn. On the market for access to local loops there is some difference in these operators' market shares, i.e. 71% for Míla against 29% for Ljósleiðarinn. Parallel network coverage by two fixed line fibre networks is also substantial and is on the increase, at about 65% at the end of 2022. It is shown in the figure here above that Ljósleiðarinn market share had been increasing at the cost of Mila in recent times. Given this development, ECOI considers it likely that the Mila share will decrease somewhat, even though their fibre roll-out in the area will probably work against this development continuing in the same manner as during recent times.

1815. In the case of a duopoly, it is not axiomatic that a difference in market share leads to the company with the higher market share being deemed to have a dominant position. The EU Commission, for example, raised objections to the DBA plans for such in a Danish case that is recounted in section 5.1.10.7 here above. This was the municipality Ikast, where Energi Ikast Fibernet had 67% market share and is a wholesale-only company. Subsequent to serious

objections from the Commission, DBA withdrew these plans and deemed that effective competition prevailed in this municipality. Among other things, it was taken into account that the companies operated as wholesalers and that parallel coverage had reached 58%.

1816. On the basis of the above, particularly the substantial parallel coverage in the municipality and the situation that prevailed on a related retail market in this area, ECOI believes that there is no reason, neither on the basis of the current situation or on the basis of a forward-looking perspective, for designating Mila as having significant market power on the relevant geographic market.

1817. ECOI considers that effective competition does prevail on market 3a in Reykjanesbær and that it will prevail throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this municipality.

6.2.28 Seltjarnarnesbær



1818. The total number of connected local loops in Seltjarnarnesbær was about 1,790 at the end of 2022 but had dropped to about 1,710 in mid-2023. Copper local loops have been on the decline in recent months, and copper local loops that do not carry bitstream declined at a particularly fast rate in the municipality in the first half of 2023, and one could say that such local loops can therefore no longer be found in the municipality[368]. One can assume that this is because of decommissioning of PSTN, and ECOI considers that this process is complete in the municipality. One cannot therefore expect any further reduction of copper local loops

[368] [...]

because of decommissioning of PSTN in the future in Seltjarnarnesbær. VDSL connections on the other hand, are also declined during this period and one can expect a continuing decline in copper local loops, as Mila plans to decommission the company's copper system in Seltjarnarnesbær in [...][369].

1819. Seltjarnarnesbær is part of the Capital City Area, but a relatively small part. The Capital City Area built-up area (apart from Kjósarhreppur) is continuous, so one can say that the Seltjarnarnes built-up area is like a district in the Capital City Area.

1820. There is very substantial deployment of fibre and copper local loops in the area, about 96% deployment of two fixed line networks, and also some and growing deployment of parallel fibre. Ljósleiðarinn fibre in this area reached 100% of residences and workplaces at the end of 2022. According to data from Mila[370], the company's fibre deployment was 36% at the end of 2022[371] and if one adds the categories labelled "Already on offer" and "Confirmed on offer"[372], see Mila web page in late November 2023, then the Mila deployment had reached 43%. There are also an additional 79 apartments in the plan for this year, which makes 48% deployment at the end of 2023. Given that Mila plans to add [...]. According to information provided in the Mila plan for decommissioning the copper system, one can expect that Mila will be well on its way to completing fibre roll-out in the municipality at the end of the lifetime of the analysis.

1821. In mid-2023, 15% of connected local loops in the municipality were copper local loops, whereas they were 20% at the end of 2022. ECOI expects continued reduction of copper local loops, and during the last six months copper local loops declined at an unusually fast rate compared with prior periods, and the reduction was proportionately more than bitstream connections, which declined by about 14% for the first six months of 2023. This can be attributed to the above specified decline of copper local loops without bitstream, but there will be no continuation of this type of decline in the municipality. If one allows for 20% annual reduction of copper local loops and that the uptake of Mila fibre remains unchanged, one cannot expect the Mila position to worsen in the coming years, so ECOI considers that this development of declining Mila share will not continue. In the light of the strong Siminn position on the retail market and of the agreement that the companies have made with each other, one can expect that the take-up of Mila fibre will increase over time and that Mila will achieve a share, which is closer to the Siminn retail share, which is 32% in Seltjarnarnesbær and 37% on fixed line networks in the Capital City Area. Seltjarnarnes built-up area adjoins Reykjavik. For those addresses where Mila and Ljósleiðarinn fibre are on offer, it is likely that Siminn will encourage its customers to use Mila fibre because of provisions in the service agreement between Mila and Siminn.

1822. Seltjarnarnesbær is the municipality in the Capital City Area, with the exception of Kjósarhreppur, where Mila is furthest behind Ljósleiðarinn in fibre roll-out, and where Mila

[369] According to the Mila plan for decommissioning the copper system.
[370] https://www.mila.is/framkvaemdir/aaetlanir-ljosleidara-og-ljosnets and Míla distribution plan.
[371] In a prior consultation, information from GAF was used, but it has been difficult to exactly reconcile Mila data with data from Registers Iceland. This could lead to an underestimation of Mila deployment. In the light of this, it was decided to base calculations on Mila deployment on the quantity figures that the company specified in the data it sent to ECOI.
[372] gpon_sales and gpon_planned.

plans are slowest, but nevertheless as stated here above, it is likely that Mila will have rolled out fibre in that area to a significant degree during the lifetime of the analysis.

1823. Access to a mobile network is also significant and deployment of one fixed line network and one mobile network is 100%. There is very little usage of mobile network routers in this area in comparison with many others, where the share of connections over mobile network routers is about 4% of bitstream connections in the municipality.

1824. This municipality is characterised by vigorous and varied retail competition where no retailer enjoys dominance and where the retailer with the highest share has 39% market share (Sýn) and the next (Siminn) with 32% on the third with 19% (Nova) and others with 10% in mid-2023. The competition situation at retail level is therefore good in the area in question by Icelandic standards.

1825. There are two strong operators on the wholesale markets, Mila and Ljósleiðarinn. On the market for access to local loops there is some difference in these operators' market shares, i.e. 74% for Ljósleiðarinn against 26% for Mila. Parallel network coverage by two fibre networks is also substantial and on the increase at about 30% at the end of 2022, and ECOI expects that it will have reached 48% at the end of 2023. Coverage by two fixed line networks was also very substantial, i.e. 96% or 100% if one considers distribution of one fixed line network and one mobile network. The figure here above shows that Ljósleiðarinn market share has recently been increasing at the cost of Mila. As is stated in section 5.5.2.5, there are however various indications that the Mila position could strengthen rather than weaken in this area during the lifetime of the analysis. Reference is made to that discussion.

1826. In paragraph 4 of Article 18 of the regulation on market analysis in the field of electronic communications it states that significantly high market share of one company over a significant period of time, or greater than 50%, is considered to be a strong indication of significant market power, except in exceptional circumstances. Market share could on the other hand only act as an indication of the above if competitors cannot increase their offer sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5, it is important to keep in mind that under certain circumstances, a company with a high market share cannot operate to a significant degree without concern for customers with a strong bargaining position, for example if the countervailing buying power is substantial. It is clear that retailers such as Nova, Hringdu and to some extent Sýn have the option of moving to the Mila network if Ljósleiðarinn tries to abuse its strength in the area in question. In addition to this, parties like Siminn, Sýn and Nova could place more emphasis on the mobile network solution in question under such circumstances.

1827. In paragraph 7 of the above specified provision, it states that if market share is high, but under 50%, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be conducted before an opinion is reached on the existence of significant market power. ECOI considers this also to apply if market share is over 50%, particularly in duopolies or oligopolies, as the 50% boundary does not axiomatically lead to a case of significant market power. It is for example clear that in duopolies, both companies can never be under 50%. It is quite

another matter than where one company has around 50% and, for example, many other companies have low market shares. This means that market share is only one of many criteria to take into account when assessing market power.

1828. In the case of a duopoly, it is not axiomatic that the above specified difference in market share leads automatically to the company with the higher market share being deemed to have a dominant position. For example, the EU Commission raised objections to DBA plans in this vein in the Danish NRA's draft market analysis.[373] This was the municipality Ikast, where Energi Ikast Fibernet had 67% market share and is a wholesale-only company. Subsequent to serious objections from the Commission, DBA withdrew these plans and deemed that effective competition prevailed in this municipality.

1829. Mila's financial strength is significant, and the company has every capability to provide Ljósleiðarinn with hard competition in the area. As stated above, it is likely that Mila share will increase during the lifetime of the analysis, particularly as it progresses, as the company's fibre deployment unfolds. In addition to this, Mila is making strong efforts to gain Nova as a customer on its fixed line networks and ECOI considers it likely that this will happen during the lifetime of the analysis, although it is difficult to predict the extent to which this will happen. It would not need a large number of Nova customers that have been on the Ljósleiðarinn fibre network to switch to Mila network for the difference that exists today in market shares to decrease significantly. Sýn also has the opportunity to migrate to an increasing degree from the Ljósleiðarinn network to the Mila network, though to a lesser degree than with Nova. When Mila is released from obligations in these municipalities, subject to this market analysis, it is not outside the realms this possibility that the company could become increasingly active in the competition.

1830. As discussed in section 6.1.3.8 (Summary and conclusions on the main long-term access agreements) and in 6.1.5.9 (Vertical integration), Mila has made a long-term agreement with Siminn, the largest reseller on a related retail market in this area. As stated there, there are still connections of interest between Siminn and Mila which manifest at least in part the characteristics of vertical integration and there are extensive commercial connections between the companies, which strengthens Mila's position in the area. Although the Siminn market share is relatively lower in this municipality than in most others, at 32%, it is not out of the question that Mila will in the lifetime of the analysis, gain a larger share of Nova and Sýn customers in the municipality, which would then lessen the difference that now exists between shares of Ljósleiðarinn and Mila.

1831. In addition to this, countervailing buying power vis-à-vis Mila is limited in the area, but is significant vis-à-vis Ljósleiðarinn by Sýn, Nova and Hringdu. It is also likely that the increase in the number of Siminn customers on the Ljósleiðarinn network which has been the case during the last 2 years will diminish somewhat during the lifetime of the analysis, Mila fibre deployment progresses and Siminn latitude to purchase from parties other than Mila will diminish. The development in market share on the relevant wholesale market that has taken place in recent times in this area may therefore be quickly reversed, and in a significant

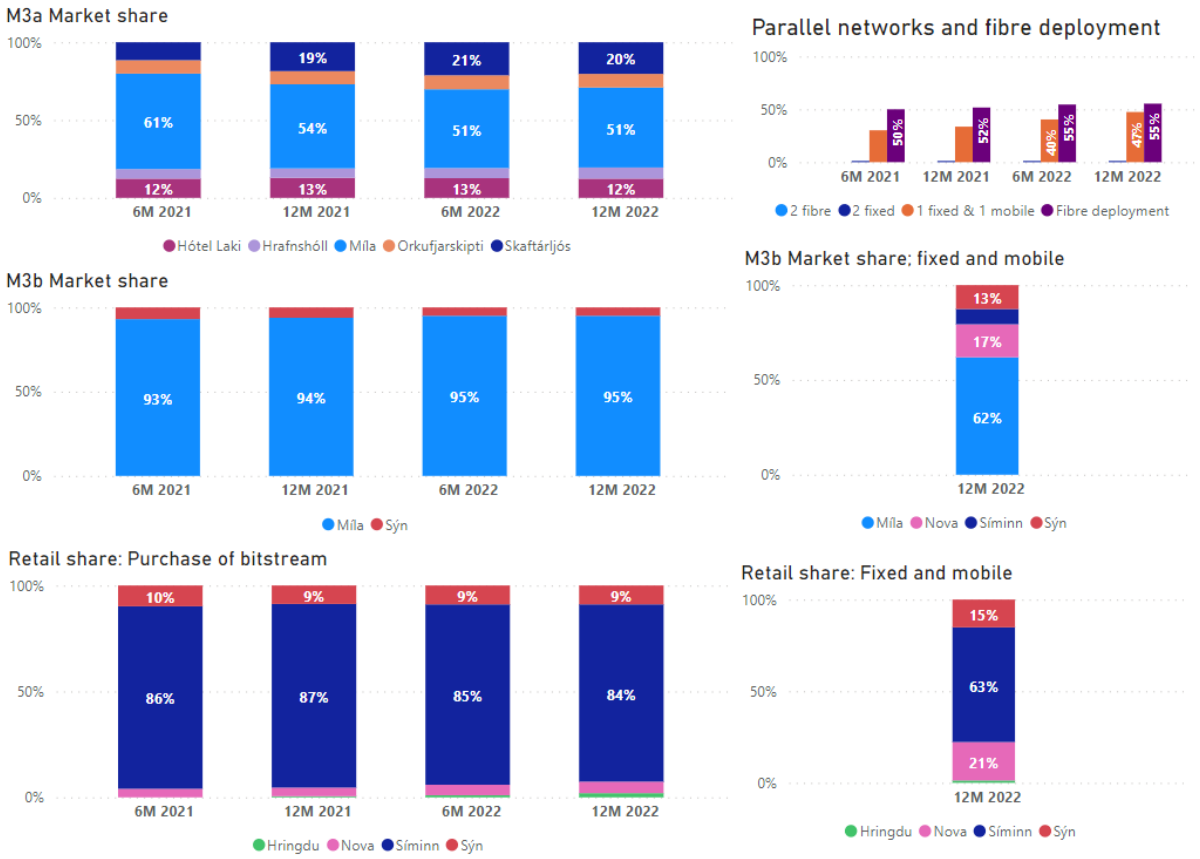
[373]See the EU Commission opinion in case no. DK/2021/2346, dated 1 December 2021, where serious objections were raised to the draft and where a phase II investigation was initiated.

manner. Mila opportunities for advancement appear to be greater than those of Ljósleiðarinn in this area on the relevant market.

1832. Given the above, and particularly the good position on the related retail market in this area and the high parallel coverage of fixed line networks, ECOI considers there to be no reason, neither on the basis of the current situation or from a forward-looking perspective, to designate Ljósleiðarinn as having significant market power on the relevant geographic market, despite the fact that the company share had increased somewhat during the first half of 2023, but there are reasons for that as explained above. There is nothing to indicate that Ljósleiðarinn can behave in this situation without taking into consideration competitors, customers and consumers. Attempts to do so could have consequences and the whole Capital City Area, if parties such as Nova, Sýn and Hringdu were to switch to an increasing degree to Mila. Given Mila's financial strength, that company could also decide to speed up fibre roll-out in the municipality than current plans allow for. Mila could doubtless complete its fibre roll-out in the municipality within a year, should the company decide to do so.

1833. ECOI therefore considers that effective competition does prevail on market 3a in Seltjarnarnesbær and will prevail throughout the planned lifetime of the analysis, despite the above specified increase in Ljósleiðarinn market share during the first half of 2023. There are explanations for this that have been presented here above, and ECOI considers that there will be a significant deceleration of the increase in the next months and near future, and that in the latter part of the lifetime it is likely that it will be reversed, even to a significant degree. The trend at that location is for example for much greater parallel fibre roll-out than in most of the areas where Mila has significant market power in the countryside. The obligations that have rested on Mila will therefore be lifted in this area.

6.2.29 Skaftárhreppur



1834. In Skaftárhreppur, the total number of connected local loops was about 250 at the end of year of 2022. In that location there is a fibre network owned by Mila, Skaftárljós, Orkufjarskipti and Hrafnshóll. As is shown in the figure above, there was also a local network owned by Hótel Laki at the end of 2022. The ownership of the network had actually been transferred to Digraklettur ehf., a network which was bought by Mila in 2023. The network is in a rural area near Kirkjubæjarklaustur. Sýn has operated bitstream equipment on the Digraklettur ehf. network.

1835. The joint fibre coverage of Mila and Digraklettur was just under 23% of residences and workplaces in the municipality at the end of the previous year.

1836. Mila fibre deployment is on the increase in the municipality and that company has been rolling out fibre to Kirkjubæjarklaustur which is the only urban nucleus in the municipality. [...]

1837. The Skaftárljós network was developed by the municipality and its deployment enjoyed state support. The Skaftárljós network is in the rural part of the municipality and Skaftárljós fibre network reached 18% of residences and workplaces at the end of 2022.

1838. Orkufjarskipti owns a fibre network in the municipality and the Orkufjarskipti fibre network reached 13% of residences and workplaces at the end of 2022. Orkufjarskipti deployment has stagnated in recent months. Mila provides bitstream service over fibre on the Orkufjarskipti fibre network.

1839. There is also a small local network owned by Hrafnhóll ehf. in the municipality, which reached about 2% of residences and workplaces at the end of 2022. Mila provides bitstream service on the Hrafnhóll fibre network.

1840. Ljósleiðarinn has plans for connections to [...] Apartments in the municipality in the near future and Ljósleiðarinn coverage will then have reached [...]%.

1841. Mila operates a copper network in the municipality and connected Mila copper local loops were 45% of the total of number of local loops in the municipality at the end of 2022, while Mila fibre local loops were about 7% of the total number of local loops. Given the Mila fibre deployment in the municipality, one can expect rapid switching from Mila copper local loops to the company's fibre local loops[374].

1842. There is a significant use of mobile network routers in the municipality, where the share of connections over mobile network routers is about 35% of bitstream connections in the municipality at the end of 2022. There is quite a number of summerhouses in the municipality, where the number of mobile network connections is significantly less than the number of summerhouses. The number of active local loops against the number of legal residences and workplaces is however only 71%, which indicates some indirect impact from mobile networks. Local loops are however not on the decrease, so it is not certain that this proportion is a good indication on the impact of mobile networks in this municipality.

1843. Skaftárljós has 20% market share on market 3a, and it is not expected that this share will change while this analysis is in force. One cannot therefore expect that a fibre network will be deployed in parallel to the Skaftárljós network, but ECOI does not, nevertheless, see a reason to designate Skaftárljós as having a dominant market position on its network, as it is a state funded network where open access has been offered for some time. The same can be said about the Orkufjarskipti and Hrafnhóll ehf. networks, although ECOI is not aware of those networks having enjoyed state support.

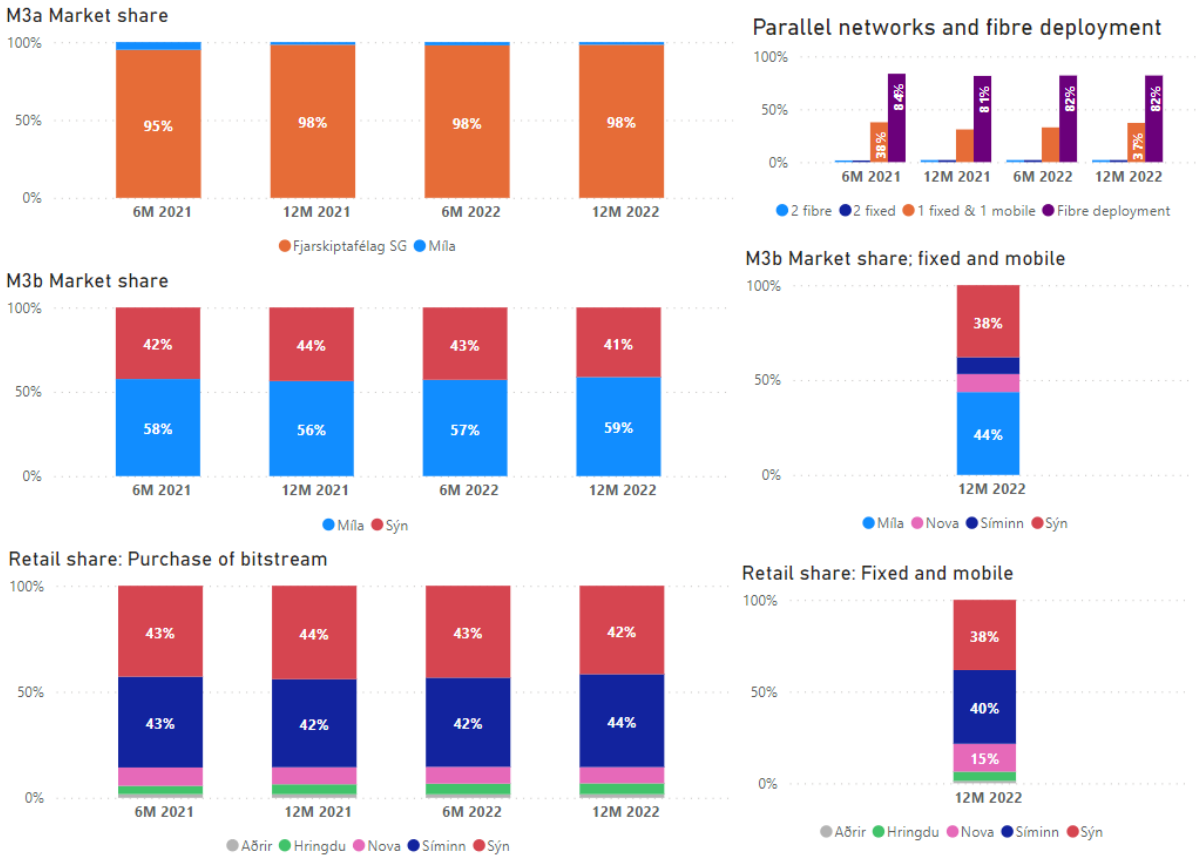
1844. Mila market share was 51% at the end of 2022 and having taken into account the company's purchase of the Hótel Laki/Digraklettur network, the Hótel Laki/Digraklettur share is added to the Mila share which would then be 63% at the end of 2022.

1845. ECOI assesses the situation in Skaftárhreppur such that Mila has significant market power in that location. There almost no parallel fixed line network coverage in that location and Mila enjoys countervailing buying power vis-à-vis the small Hrafnshóll and Skaftárljós networks as the largest operator of bitstream service in the municipality.

1846. ECOI therefore considers it necessary to impose appropriate obligations on Mila in this municipality on the relevant market.

[374] [...]

6.2.30 Skeiða- og Gnúpverjahreppur



1847. In Skeiða- og Gnúpverjahreppur, the total number of connected local loops was about 240 at the end of year of 2022.

1848. There is a local network in the area owned by the municipality, which is operated by Fjarskiptafélag SG, and which reached 80% of residences and workplaces at the end of 2022. Fibre deployment or other parties in the municipality is almost none[375] and fibre deployment has stagnated in recent times. ECOI does not expect there to be parallel network coverage in the municipality as the municipality is very sparsely populated.

1849. Mila does not operate a copper network in the municipality but provides bitstream through the Fjarskiptafélag SG fibre, as also does Sýn.

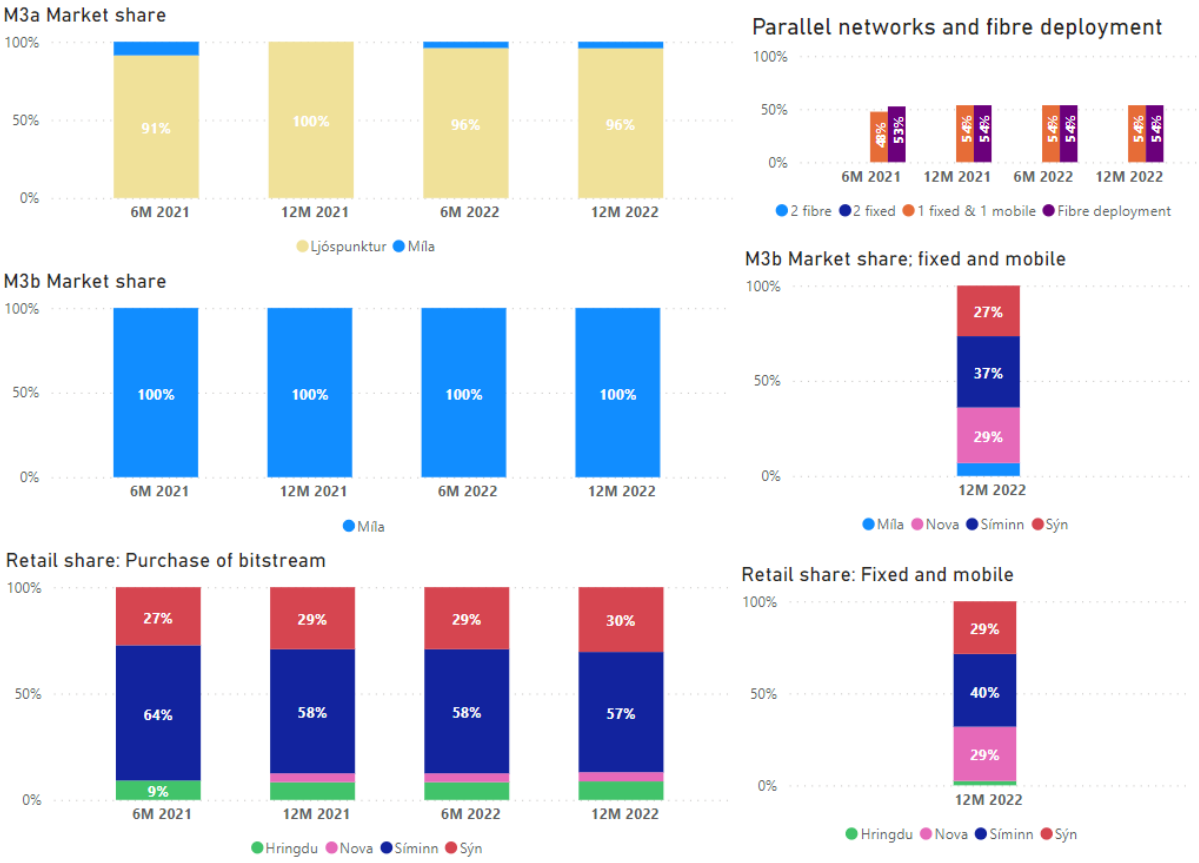
1850. There is quite some use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 26% of bitstream connections in the municipality at the end of 2022. There is quite a number of summerhouses in the municipality, where the number of mobile network connections is significantly less than the number of summerhouses. The number of active local loops against the number of residences and workplaces is 92%, so ECOI considers there to be very little indirect impact from mobile networks.

[375] Míla and Orkufjarskipti own very few fibre local loops.

1851. Fjarskiptafélag SG had 98% market share on market 3a at the end of 2022. ECOI does not expect that this market share will decrease while this market analysis is in force. ECOI assessment is that there is no reason to designate Fjarskiptafélag SG as having a dominant market position. Fjarskiptafélag SG has provided open access to the network and there is little likelihood that the municipality will abuse its network to the disadvantage of consumers in the municipality. The network is also subject to obligations of state support rules, although it was not supported by the Telecommunications Fund, as it was built by the municipality with public funds. ECOI refers to arguments that have been presented here above on fibre networks owned by municipalities. Such local networks serve community interests first and foremost and are in this manner different from the electronic communications networks of electronic communications companies that are operated with maximising profit as their guiding light.

1852. The obligations that have rested on Mila will therefore be lifted in this area.

6.2.31 Skorradalshreppur



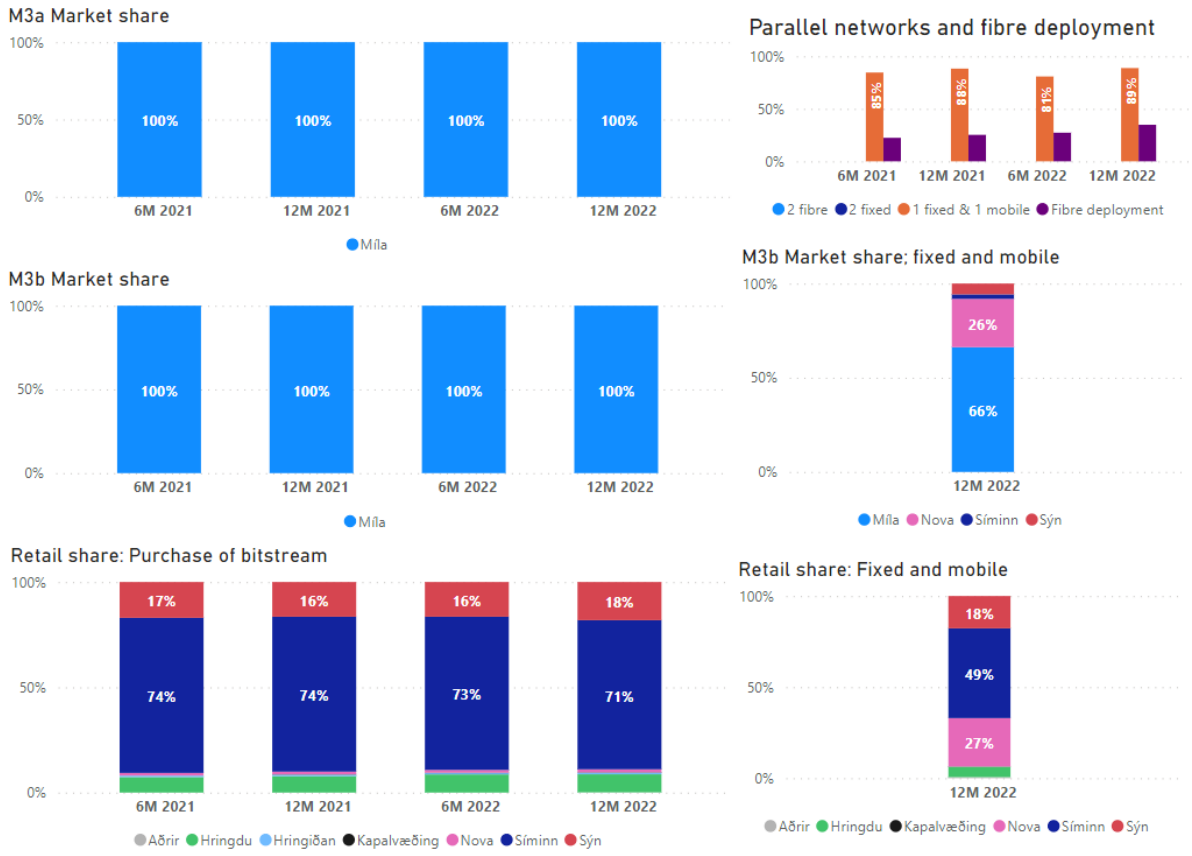
1853. In Skorradalshreppur there are only 24 active local loops which are almost all on the Ljóspunktur network, which was developed with public support. Access to the network is therefore governed by rules on state support and is an open network where Mila provides bitstream service.

1854. There is no likelihood of parallel coverage of another fibre network in the municipality, which means that it is not foreseen that the Ljóspunktur market share will decrease at all during the lifetime of the analysis.

1855. ECOI also assesses that there is no reason to designate Ljóspunktur as a company with significant market power on market 3a in Skorradalshreppur. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. The network is also subject to obligations in state support rules. Mila also has strong countervailing buying power vis-à-vis the network, as the only bitstream operator bitstream service on that network. One can refer to the Finnish case that has been recounted here in this section and to the discussion here above on local networks. This is not a for-profit project and the company's business model is based on open access and fair pricing.

1856. The obligations that have rested on Mila will therefore be lifted in this area.

6.2.32 Suðurnesjabær



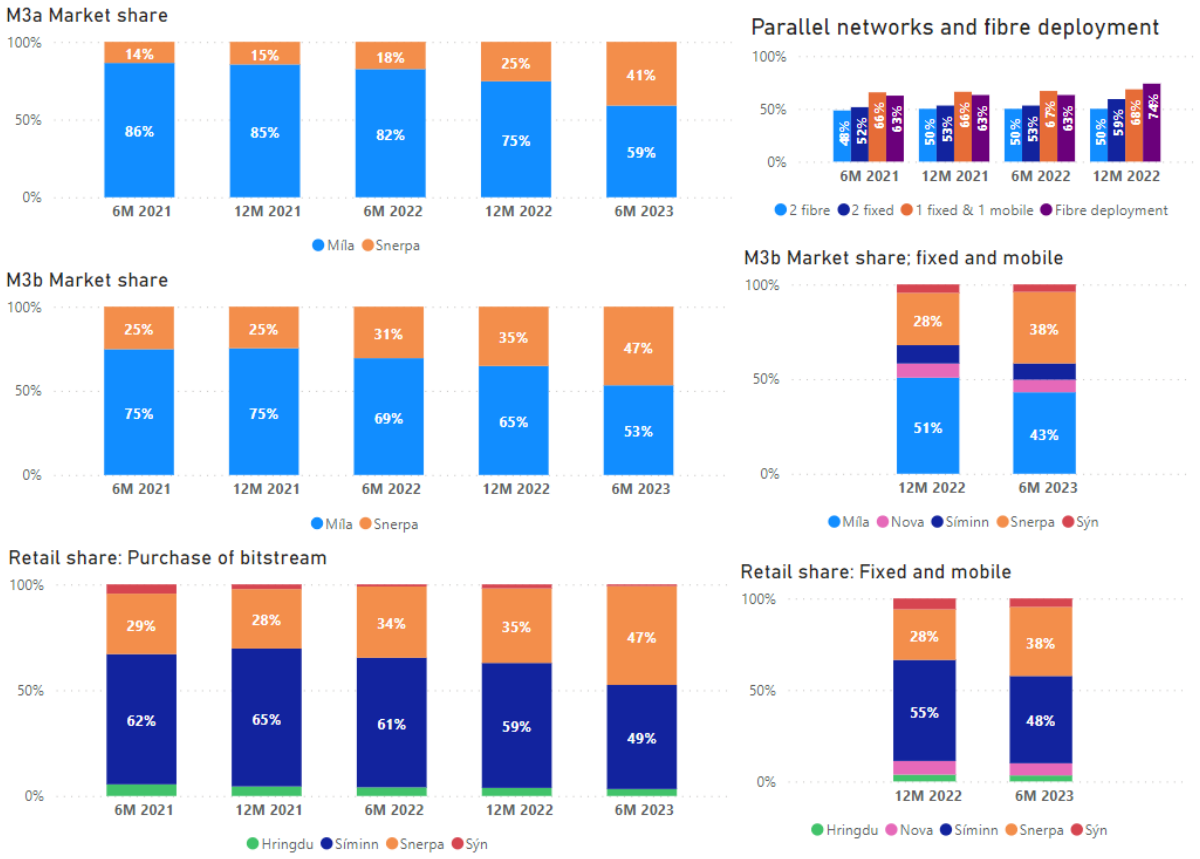
1857. Active local loops at the end of 2022 were 1158, all on Mila networks and Mila thus had 100% market share of the relevant market 3a at the end of 2022. Míla has deployed fibre to 37% of legal residences and to 35% of total homes and workplaces. Service over copper network is therefore in the majority of fixed line connections in the municipality. Siminn has a much smaller market share, 71% of service provided over fixed line networks and 49% when one takes into account mobile network connections, which have some impact in the municipality. As there is no retailer with more than 50%, the municipality was not included in Area B on market 3a, which is discussed here above.

1858. It is not foreseeable that there will be competition on market 3a in the municipality in the near future and even if a new fibre network were deployed there in competition with the

Mila network, one must consider it likely that such a network would not achieve success to the extent that Mila share would be impaired to any significant degree. In this context one could also mention the extremely high Siminn share in retail on a related market, which strengthens the Mila position through the connections of interest between the companies, which manifests at least to some extent the characteristics of vertical integration, see discussion on vertical integration here above.

1859. There is no direct competitive pressure from mobile networks on the Mila local loop network, which means that it is clear that Mila has significant market power on market 3a in Suðurnesjabær and that there is therefore a need to impose appropriate obligations on Mila in this municipality.

6.2.33 Súðavíkurhreppur



1860. Active local loops decreased in Súðavíkurhreppur from about 142 at the end of 2022, 139 in the middle of 2023. Both Mila and Snerpa have fibre local loops at their disposal, but more than one third of active local loops were still on copper lines at the end of 2022, and a sixth of active local loops were on copper lines in mid-2023. Parallel coverage of two fibre networks reached 50% of residences and workplaces at the end of 2022, while 59% of them then had access to fixed line network from two parties. In total, fibre deployment reached 75% of residences and workplaces at this point in time. Deployment in mid-2023 is not available.

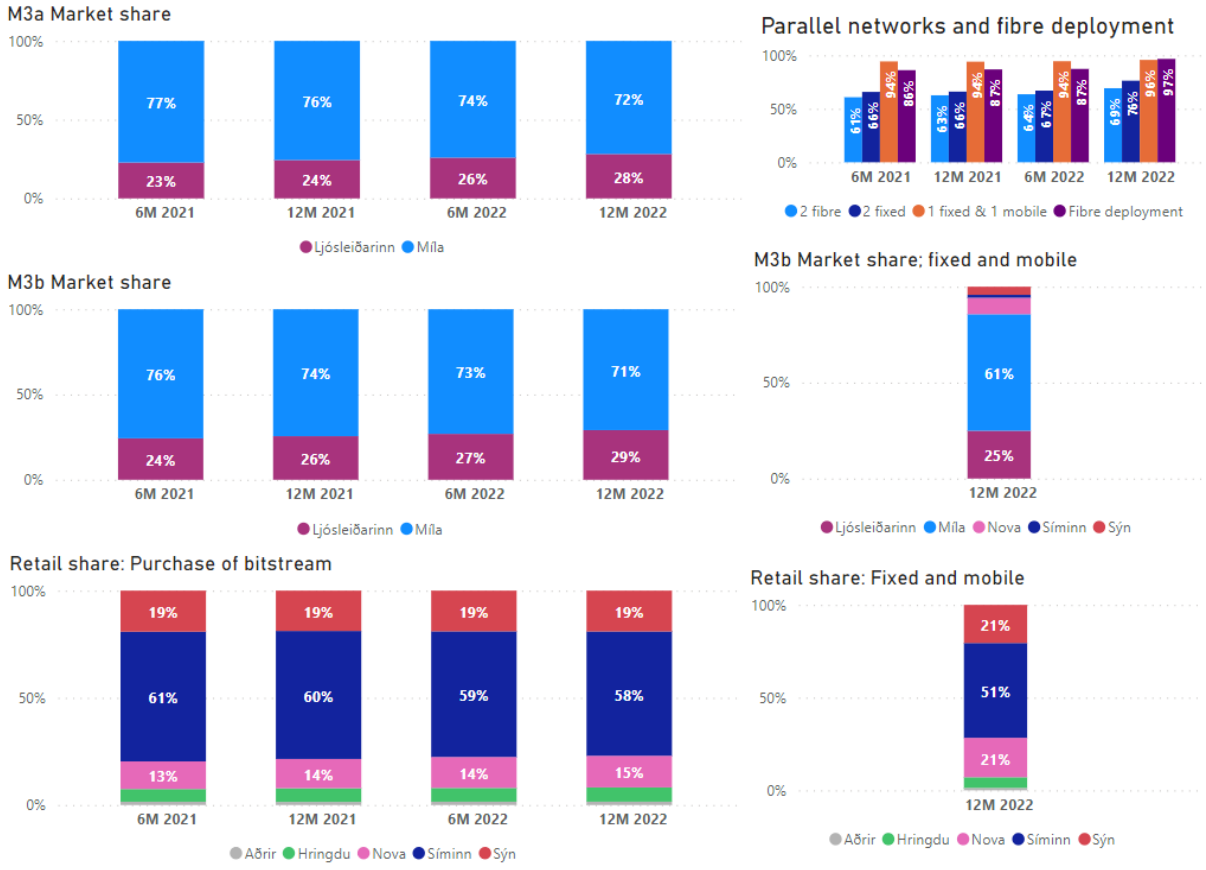
1861. Snerpa is a vertically integrated company that has its own local loops, bitstream system, that are based on its own fibre local loops, and it also operates its own retail in the

municipality. Snerpa also provides wholesale access to its bitstream service where access is on offer to bitstream over fibre. Snerpa used to lease copper local loops from Mila for its own bitstream, but it is now no longer possible to rent copper local loops from Mila in this municipality.

1862. Snerpa progress in uptake of the company's fibre local loops in Súðavíkurhreppur has been more than was expected in the prior consultation, where Snerpa share has grown from 25% at the end of 2022 to 41% in mid-2023. One can therefore consider it likely that Snerpa will achieve 50% market share during the lifetime of this analysis. The company is however small and its ability to invest is limited compared with Mila. Snerpa is both a competitor and customer of Mila on that company's fibre network on market 3b, and the company's performance in retail is based to some extent on access to bitstream on Mila fibre.

1863. In the light of the growing status of Snerpa in Súðavíkurhreppur, both respect to market share on the relevant market and to deployment of fibre networks, the ECOI assessment is that effective competition is being established in Súðavíkurhreppur on market 3a, and that it is likely that such effective competition will prevail in the municipality on the relevant market throughout the estimated lifetime of the analysis. The obligations that have rested on Mila in Súðavíkurhreppur are therefore lifted.

6.2.34 Sveitarfélagið Árborg



1864. In Sveitarfélagið Árborg there are 4,480 active connections on local loops and 416 active mains connected network routers. At Selfoss, both Ljósleiðarinn and Mila have a substantial and equal deployment of fibre local loops. Ljósleiðarinn has deployed to the more sparsely

populated areas of the community just south of Selfoss, and Mila to the fairly recent urban district, halfway between Selfoss and Eyrarbakki. Both companies have fibre conduits to Eyrarbakki og Stokkseyri, but only Mila has deployed local loops to those towns. Fibre deployment there is however not as common as in Selfoss and 664 connections are active on copper lines in the municipality.

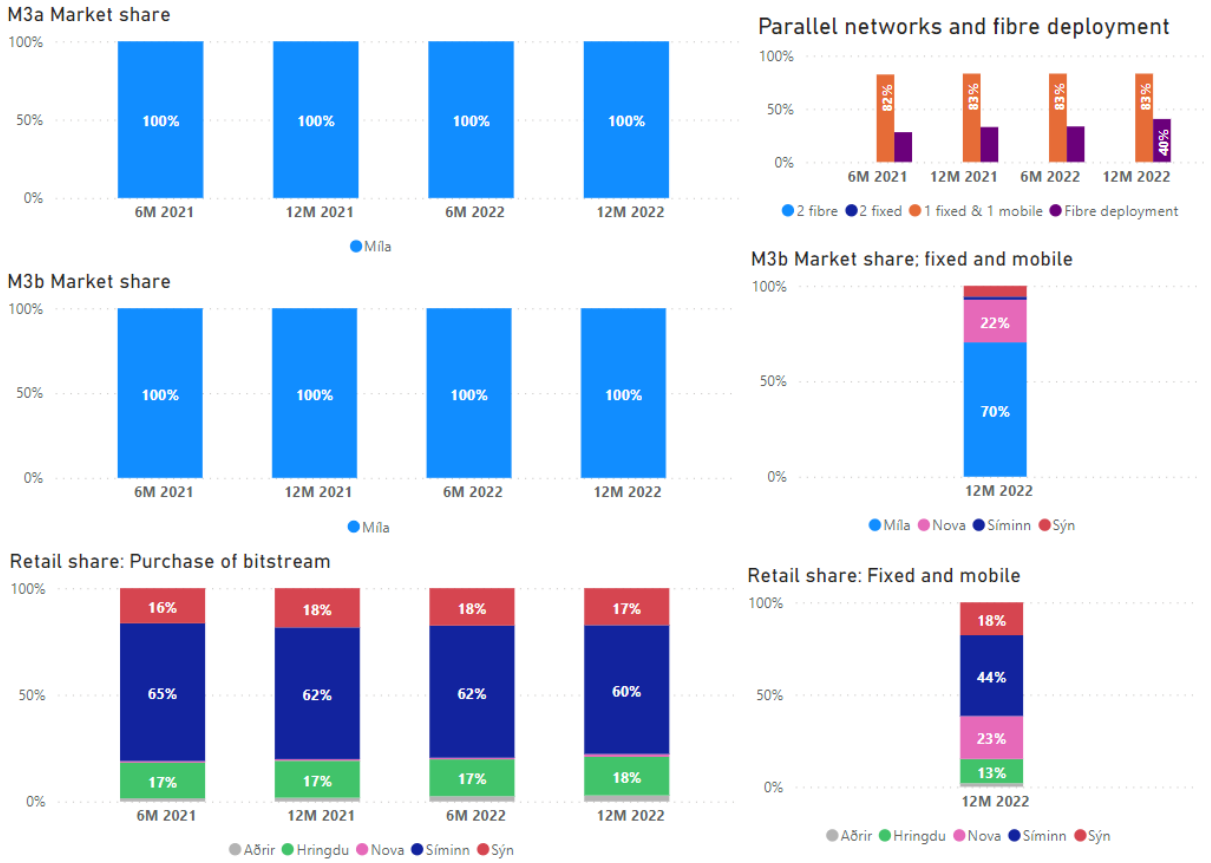
1865. There is deployment of fibre to 97% of residences and companies in the municipality and parallel coverage of two fixed line networks reaches 76% of them. Access for homes and companies to one fixed line network and at least one mobile network with a good signal is available to 96%.

1866. The Mila share is substantial on the local loop market, which has been on the decline, while the Ljósleiðarinn share has been increasing. Siminn enjoys substantial market share which strengthens the Mila position in the light of the long-term agreement between the companies, which constitute connections of interest between the companies, and which manifests at least in part the characteristics of vertical integration, see discussion on vertical integration here above.

1867. Given the above, and particularly the extensive parallel coverage of fixed line networks, ECOI considers there to be no reason, neither on the basis of the current situation or from a forward-looking perspective, to designate Míla as having significant market power on the relevant geographic market. Competitive pressure from the Ljósleiðarinn network is in place and that company is making progress, though it is slow. It cannot be seen that Mila can operate in the municipality without consideration for competitors, customers and consumers, as both the wholesale customers of the company and consumers on the retail market have almost without exception another option, either Ljósleiðarinn or through a mobile network.

1868. ECOI therefore considers that effective competition does prevail on market 3a in Árborg municipality and that it will prevail throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this area.

6.2.35 Sveitarfélagið Vogar



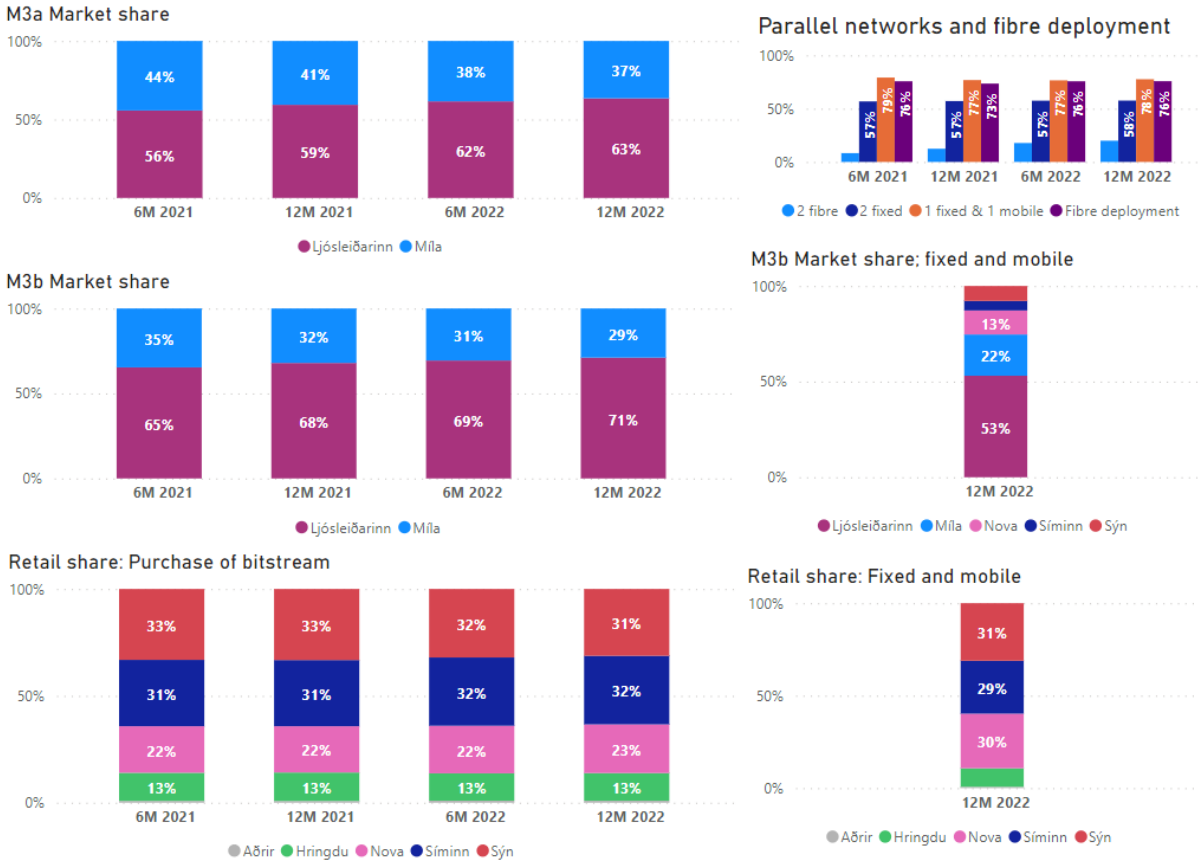
1869. Sveitarfélagið Vogar is characterised by a small urban nucleus where a large majority of the inhabitants live, and a number of buildings along the coast to the north-east of the urban area. Mila has deployed fibre to the town and to the rural area by the coast. The rural area has access to Mila fibre local loops but only a small part of the urban nucleus. There were 416 active local loops in Vogar at the end of 2022 where 40% of these were fibre and 60% were copper local loops which are in almost all instances used for VDSL bitstream. There are 46 registered summer houses in the municipality.

1870. Míla thus has 100% share of both local loop lease and bitstream service over fixed line networks, but the impact of mobile networks is significant, with 163 connections, and Nova has some share in that sector.

1871. Ljósleiðarinn has made an agreement with Mila on joint projects in development to residences. ECOI considers that despite the fact that the joint projects will probably be completed during the first part of the period of validity of the analysis, it is unlikely that Ljósleiðarinn will achieve such market share within the period of validity that this will have a significant impact on the strong position of Mila in the municipality. It must also be considered unlikely that during the lifetime of this analysis, Ljósleiðarinn will deploy fibre to all those addresses that already have a fibre connection from Mila. In addition to this there is also the high Siminn market share which manifests the characteristics of vertical integration which strengthens Mila position in the light of the wholesale agreement between the companies, as is discussed here above in the section on vertical integration.

1872. ECOI therefore designates Mila as a company with significant market power on market 3a in Sveitarfélagið Vogar, and ECOI therefore considers it necessary to impose appropriate obligations on Mila in the municipality.

6.2.36 Sveitarfélagið Ölfus



1873. In Sveitarfélagið Ölfus there were 953 active local loops at the end of 2022. Ljósleiðarinn has a fibre network in the municipality, which reaches 98% of residences and 73% of residences and workplaces, and Ljósleiðarinn had 63% market share on market 3a at the end of 2022. The urban nucleus Þorlákshöfn is in this municipality and a rural area to the south and east of Hveragerði. Mila has also deployed fibre, which reaches 28% of residences and 22% of residences and workplaces together, such that about 20% of residences and workplaces have access to two fibre networks, while 76% have access to either of the networks and parallel coverage of two fixed line networks reaches 58% of them. Parallel coverage of fixed line networks is thus not particularly large, and it means on the other hand that 42% of residences and workplaces only have access to one fixed line network, i.e. to Ljósleiðarinn in almost all instances. There is therefore a significant proportion of residences in the municipality that only has access to one network, i.e. the Ljósleiðarinn network.

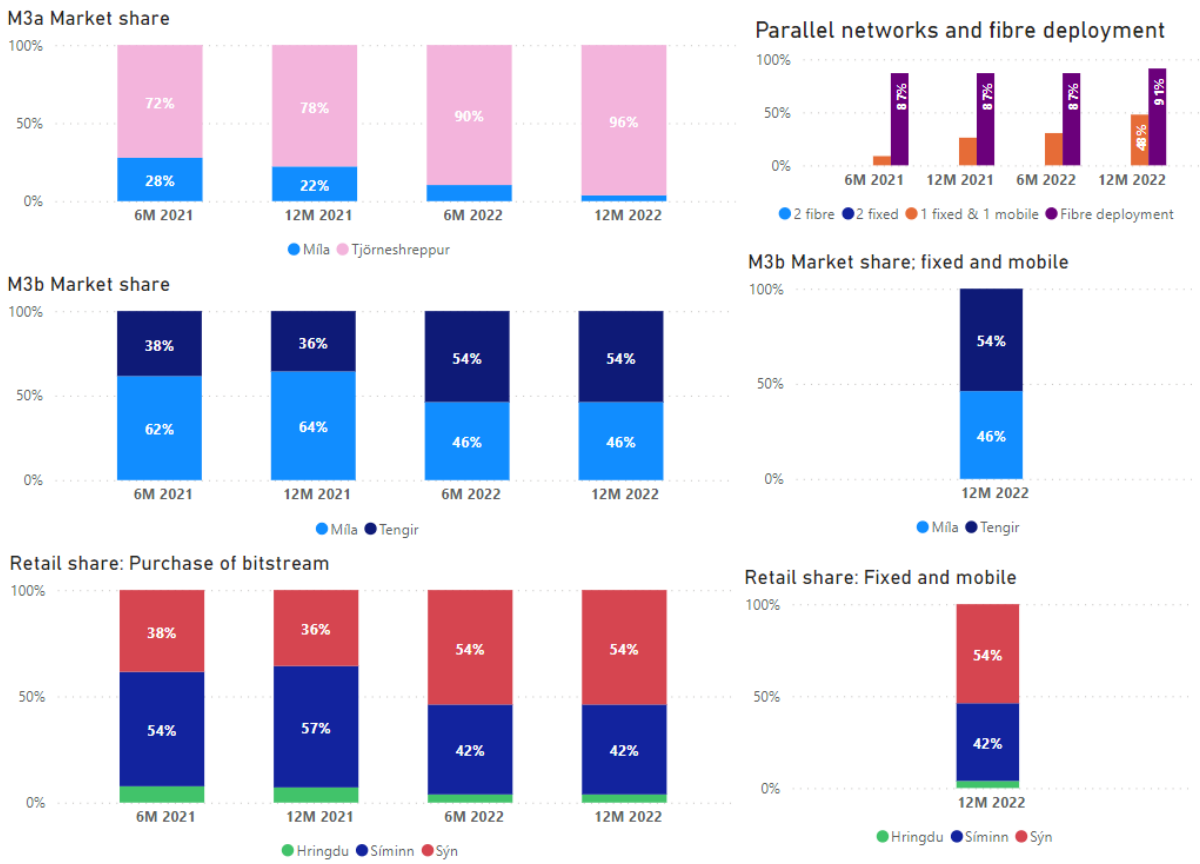
1874. The number of active local loops has increased a little recently. The Ljósleiðarinn share in active local loops in the municipality was 63% at the end of 2022 and has increased steadily during the past months, and Mila has modest plans for further deployment in the municipality. It must be considered unlikely that there will be parallel fibre network coverage in the rural area of Ölfus. It is therefore unlikely that the Ljósleiðarinn share will be impaired to a great extent during the lifetime of the analysis.

1875. There are 139 summer houses registered in Ölfus, and 289 electricity mains connected mobile network routers are in use, such that the impact of mobile networks on competition is considerable but has not had a deciding impact on the shares of retailers. The deployment of mobile networks is quite good in the municipality, where 78% of residences and workplaces have access to at least one mobile network and one fixed line network each from a different operator.

1876. The status of retail competition is very good as there are four operators in the municipality. This competition is based to a large extent on all parties having access to an underlying network and to the Ljósleiðarinn system. It is important that this continues to be the case.

1877. When one considers the position of parties on market 3a in a forward-looking manner, ECOI considers that Ljósleiðarinn has the position of a party with significant market power on the relevant market in Ölfus municipality, and that there is reason to impose appropriate obligations on the company.

6.2.37 Tjörneshreppur



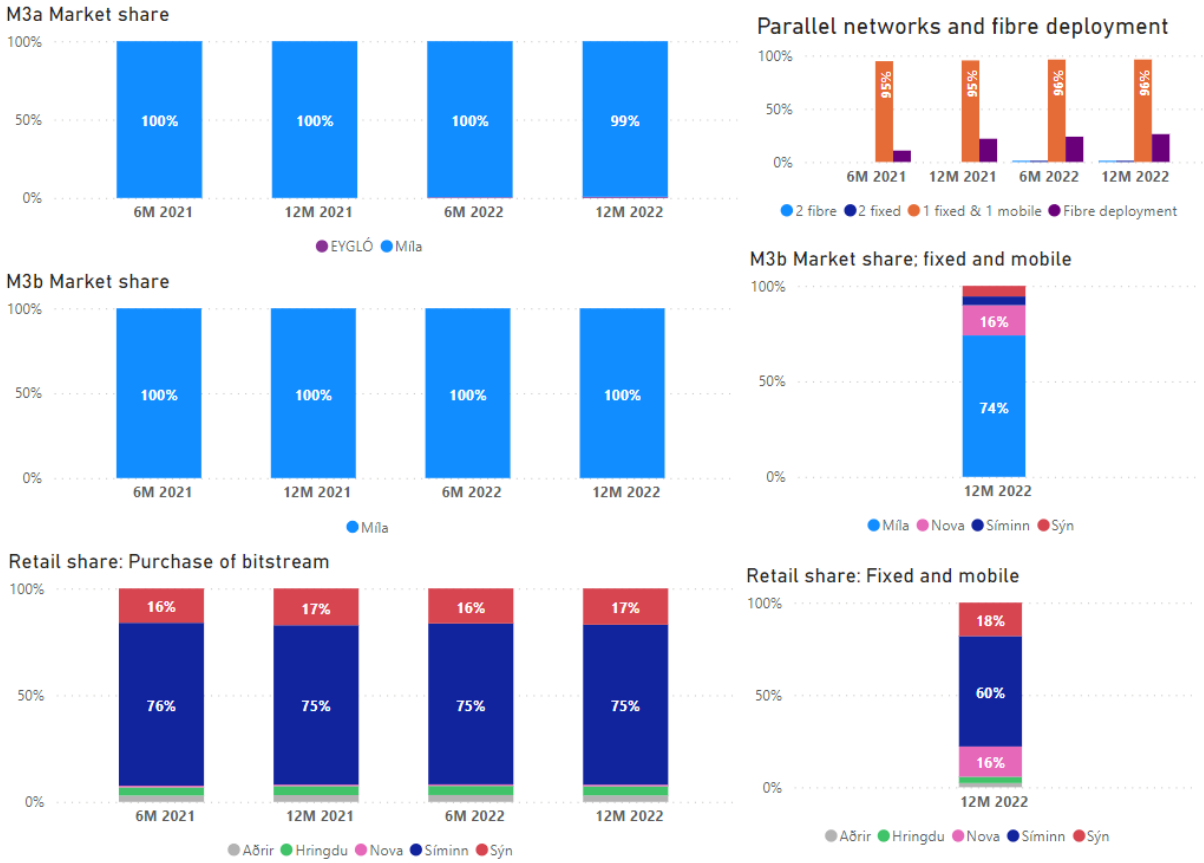
1878. Tjörneshreppur is a small municipality without an urban nucleus. There were 27 local loops in use in the municipality at the end of 2022, almost all of them on the Tjörneshreppur fibre network. There is no use of mobile network routers in the municipality.

1879. ECOI also assesses that there is no reason to designate Tjörneshreppur as a party with significant market power on market 3a in Tjörneshreppur. Such local networks serve

community interests first and foremost and are in this manner different from the electronic communications networks of electronic communications companies that are operated with maximising profit as their guiding light. There is little likelihood that the municipality will abuse its network contrary to the interests of consumers or of wholesale commerce in the area. The network is also subject to obligations in state support rules. Mila and Tengir also have strong countervailing buying power vis-à-vis the network, as the only bitstream operators on that network.

1880. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time will therefore also be lifted.

6.2.38 Vestmannaeyjabær



1881. In Vestmannaeyjabær, the total number of connected local loops was about 1,660 at the end of year of 2022. There is a fibre network owned by Mila which reached 25% of residences and workplaces at the end of 2022, and Mila also has a copper network to all the buildings in the municipality. Mila connected local loops in the municipality were mostly copper local loops, about 83% of the total number of local loops at the end of 2022.

1882. EYGLÓ, which is owned by Vestmannaeyjabær, has commenced fibre roll-out in the municipality where it reached about 1% of residences and workplaces at the end of 2022. Part of the EYGLÓ network, to residences in rural areas, received state support in connection with the project “Iceland Digital Connected”. EYGLÓ intends to roll out fibre to all residences in the municipality by the end of 2024 in three phases. The first two phases of this project are well advanced, and sales have commenced in part of the first phase, and it will not be long until

whole of the first phase is ready for sales. Civil works for phase 2 has commenced and one can expect that this phase will be ready for sales in the first half of 2024. A minimum of 40% of residences and workplaces will as a minimum, then have the option of connecting to the company's network, and this proportion will have become very high at the end of 2024. Parallel coverage of fixed line networks was very low at the end of 2022 but will increase significantly with EYGLÓ fibre roll-out. ECOI does not expect that Mila will continue its fibre roll-out now that EYGLÓ has started, and Mila is providing bitstream service over the EYGLÓ fibre network. For this reason, ECOI considers that parallel fibre coverage deployment will not exceed 25% when EGLÓ has completed its deployment.

1883. EYGLÓ will provide open access to its fibre local loops and plans not to operate its own bitstream system on the network. This means that electronic communications companies will have the option of operating their own bitstream equipment on the EYGLÓ fibre network. Mila has already started providing bitstream service on the EYGLÓ network, as previously stated. At the beginning of August 2023, 9% of residences in the municipality were able to connect to EYGLÓ fibre in the Mila bitstream system. It is not certain whether Ljósleiðarinn will also install a bitstream system on the EYGLÓ network, but this would improve competitive conditions significantly in the municipality.

1884. There is some use of mobile network routers in the municipality, where the proportion of connections over mobile network routers is about 26% of bitstream connections in the municipality. The fact that there is a very small number of summerhouses in the municipality and that only 80% of legal residences on workplaces use local loops, indicates that residences/companies are using mobile network connections, instead of fixed line connections. Active local loops have also been on the decline, and at the end of 2022, 82% of them were copper local loops. In the opinion of ECOI, there is therefore little indirect competitive impact from mobile networks. Nova also had an experimental project in Vestmannaeyjabær where it offered a 5G network router in the area before Vestmannaeyjabær decided to embark on the fibre roll-out. Síminn and Sýn also have 5G transmitters in the Westman Islands.

1885. Mila had 99% market share on the relevant wholesale market at the end of 2022. ECOI considers on the other hand that the Mila share will diminish quickly on the relevant market while the market analysis is in force. EYGLÓ is likely to receive support from locals who will switch from Mila copper local loops to EYGLÓ fibre in significant numbers. ECOI considers that the take-up of EYGLÓ fibre will be very high.

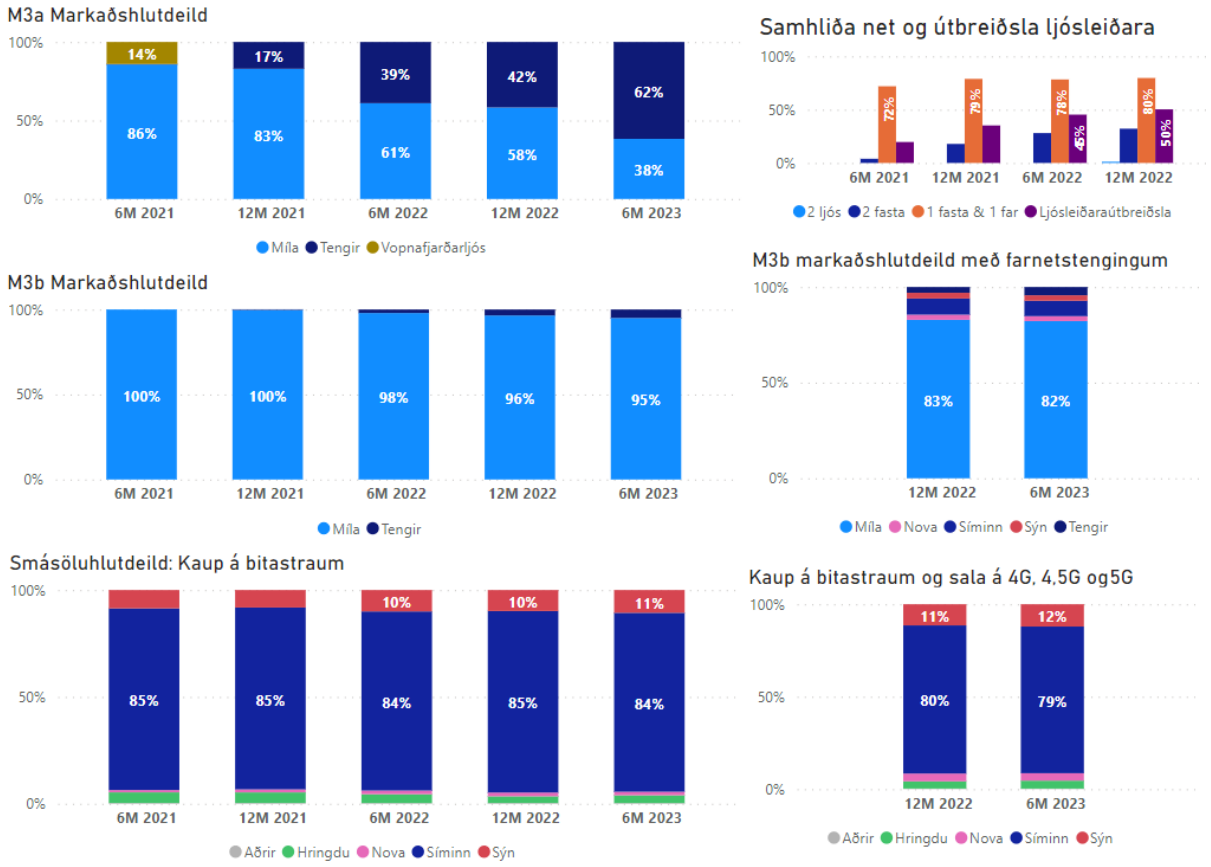
1886. The situation at retail level was not good in the municipality at the end of 2022, where Siminn had 60% market share, Sýn 18%, Nova had 16% and others had a total of 6%. The characteristics of vertical integration between Mila and Siminn are manifest here which strengthens Mila's position.

1887. If it had not been for the recent fibre deployment by the municipality, assessment of significant market power would have shown that Mila had significant market power in the municipality. Having account of the above specified EYGLÓ deployment plans, and with a forward-looking perspective, ECOI considers, however, that effective competition will prevail on the relevant market in Vestmannaeyjabær during the lifetime of the analysis. It is difficult to predict with any precision how market share will develop between Mila and EYGLÓ during

the lifetime of the analysis, but ECOI expects that this development will be in Mila's favour during the next years and then revert to EYGLÓ in the latter part of the lifetime of the analysis. In the opinion of ECOI, there are too many imponderables at this point in time to be able to assert that EYGLÓ will have significant market power in the municipality at the end of the analysis lifetime. In addition to this, the EYGLÓ network is open and serves community interests first and foremost and are in this manner different from the electronic communications that are operated with maximising profit as their guiding light. In this connection, reference is made to discussion here above on local networks and to the case of FICORA for more detailed explanations.

1888. The obligations that have rested on Mila up to this point time will therefore be lifted.

6.2.39 Vopnafjarðarhreppur



1889. The total number of local loops in use in Vopnafjarðarhreppur was 338 at the end of 2022, but this dropped to 303 in the middle of 2023. Vopnafjarðarljós deployed a fibre network at that location and Tengir took over the project in 2021, where the Tengir network now reaches first and foremost the rural part of the municipality. A growing part of the Vopnafjörður rural area is connected to Tengir fibre. The Mila network in the municipality is based almost entirely on copper lines and the Mila trunk line network on the round Iceland fibre cable runs through Vopnafjörður. There has been a significant reduction in the Mila copper local loops in the municipality and considerable growth in local loops in use on the Tengir fibre network. But because of the decrease in number of local loops in use, the Tengir market share has grown more than the corresponding increase in number at Tengir. There

was a significant reduction in copper local loops without bitstream in the municipality during the first six months of 2023, and one can assume that the decommissioning of PSTN is almost complete in the municipality.

1890. There is some use of mobile network routers, and about 14% of bitstream connections in the municipality are on a mobile network.

1891. There is little parallel coverage of fixed line networks in the municipality and connections are therefore divided between the Tengir fibre network and the Mila copper network, but Tengir has been deploying fibre in the urban nucleus and has fibre connections in the rural area. About 80% of residences and workplaces have access to one fixed line network and at least one mobile network with a good signal, so indirect competitive pressure from mobile networks does exist. Deployment figures for mid-2023 are not available, but one must consider it likely on the basis of the development that Mila has been working on decommissioning copper connections during 2023.

1892. When one looks to the future, one must consider it likely that Tengir will continue to increase its market share. The company has plans for continued deployment of its fibre network, while Mila has plans for continued decommissioning of the copper system. ECOI considers it unlikely that another fibre network will be built in Vopnafjarðarhreppur and that this will be the position throughout the planned lifetime of the analysis.

1893. In the light of the above, ECOI designates Tengir as a company with significant market power in Vopnafjarðarhreppur, and appropriate obligations will be imposed on the company.

6.2.40 Conclusion on assessment of electronic communications companies with significant market power on Market 3a

1894. In the following 29 municipalities, ECOI, assesses that effective competition prevails, or that the tendency is towards effective competition during the lifetime of the analysis:

- Akraneskaupstaður
- Árneshreppur
- Ásahreppur
- Bolungarvíkurkaupstaður
- Borgarbyggð
- Eyja- og Miklaholtshreppur
- Fljótsdalshreppur
- Flóahreppur
- Garðabær
- Hafnarfjarðarkaupstaður
- Hrunamannahreppur
- Hvalfjarðarsveit
- Hveragerðisbær
- Ísafjarðarbær

- Kjósarhreppur
- Kópavogsbær
- Mosfellsbær
- Mýrdalshreppur
- Rangárþing ytra
- Reykhólahreppur
- Reykjanesbær.
- The City of Reykjavík
- Seltjarnarnesbær
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Súðavíkurhreppur
- Sveitarfélagið Árborg
- Tjörneshreppur
- Vestmannaeyjabær

1895. 78% of the country's inhabitants live in the above specified municipalities.

1896. In the following 26 municipalities, ECOI considers that Mila has significant market power:

- Bláskógabyggð
- Dalabyggð
- Fjallabyggð
- Fjarðabyggð
- Grímsnes- og Grafningshreppur
- Grindavíkurbær
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Múlaþing
- Norðurþing
- Rangárþing eystra
- Skaftárhreppur
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð

- Suðurnesjabær
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Sveitarfélagið Vogar
- Tálknafjarðarhreppur
- Vesturbyggð

1897. 15% of the country's inhabitants live in the above specified municipalities.

1898. In the following 8 municipalities, ECOI considers that Tengir has significant market power:

- Akureyrarbær
- Dalvíkurbyggð
- Eyjafjarðarsveit
- Grýtubakkahreppur
- Hörgársveit
- Svalbarðsstrandarhreppur
- Vopnafjarðarhreppur
- Þingeyjarsveit

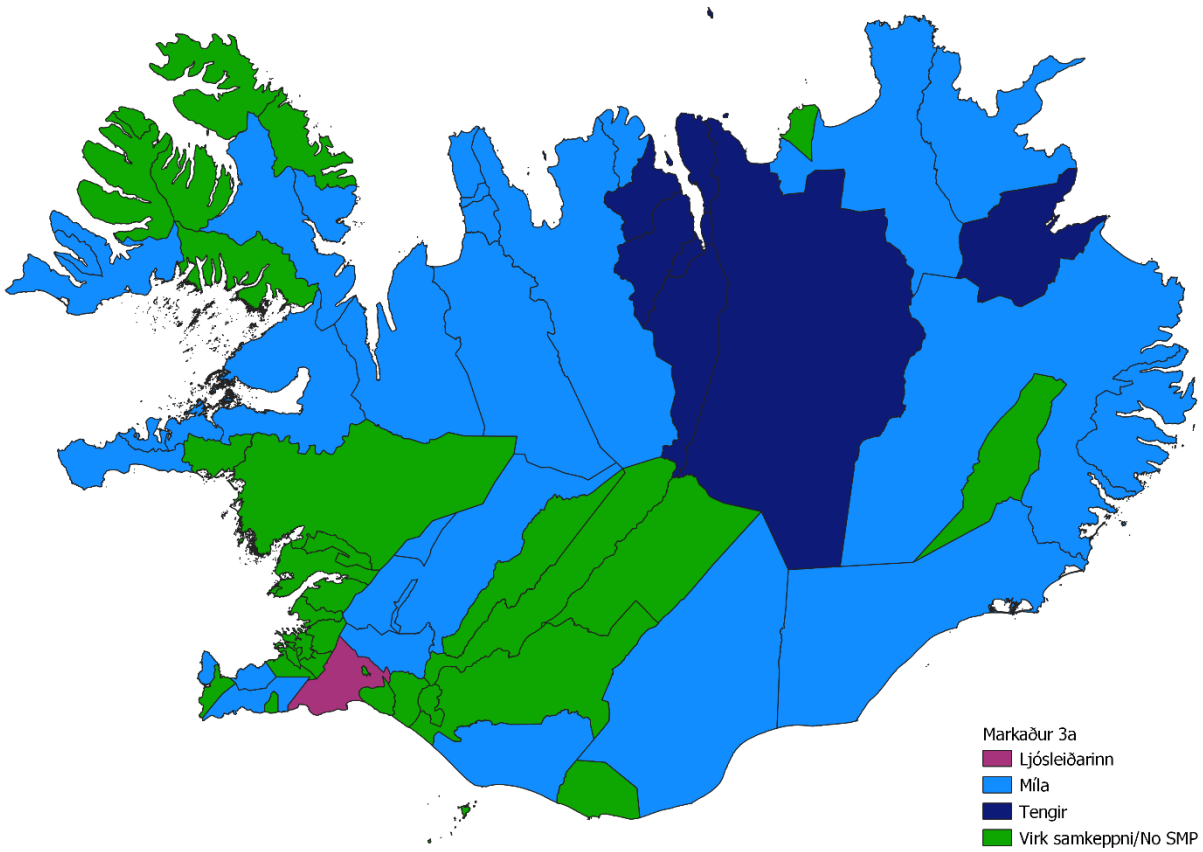
1899. 7% of the country's inhabitants live in the above specified municipalities.

1900. In the following municipality, ECOI considers that Ljósleiðarinn has significant market power:

- Sveitarfélagið Ölfus

1901. 1% of the country's inhabitants live in Sveitarfélagið Ölfus.

Figure 6.1 Conclusion on assessment of significant market power on market 3a by municipality



6.3 Assessment of significant market power on market 3b

6.3.1 Introduction

1902. When assessing significant market power in the 43 geographic markets in market 3b, ECOI considers it important to take into account the factors specified below, and as appropriate it may be necessary to take more factors into account where there is considerable doubt as to whether a party should be deemed to have significant market power or not, and ECOI also considered it unnecessary to discuss all factors in those areas where the conclusion was clear. Where there is significant doubt about the conclusion, ECOI will also apply a forward-looking approach and endeavour to predict development of competition during the lifetime of the analysis with respect to deployment of electronic communications networks, market share development and whether significant market power will pertain throughout the planned lifetime of the analysis or whether it is likely that effective competition will come into being in the relevant area.

1903. The above specified main elements are as follows:

1. Market share on the relevant wholesale market and as appropriate, on retail market;

2. Deployment of electronic communications networks, including parallel networks;
3. Control of facilities that are difficult to duplicate;
4. Total size and strength of electronic communications companies;
5. Potential competition;
6. Countervailing buying power;
7. Vertical integration or its equivalent;
8. Long-term access agreement and commercial connections

1904. As in section 6.2, the development of market share at half yearly intervals is shown here below, which shows the status at each point in time from about mid-2021 up to the status at the end of year 2022 or at four points in time, and reference is made to the explanatory figure in section 6.2.1, to explain the information published for each market. ECOI has also gathered information from electronic communications companies about the status in mid-2023, information that was not available when the preliminary draft was submitted to national consultation on 15 September 2023. ECOI decided on the other hand not to embark on the work of revising the whole market analysis with these figures, but examined nevertheless, changes in each individual municipality. In Appendix C one can however see market share in all geographic markets from mid-2021 up to the status in mid-2023, at five points in time. There one can also find a conclusion on deployment of networks in mid-2023.

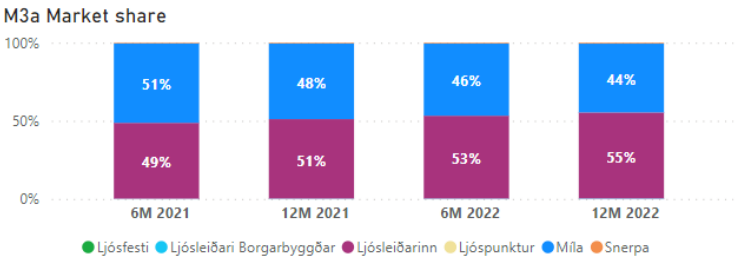
1905. On market 3b, ECOI changed its conclusion on evaluation of significant market power in Fljótsdalshreppur and in Súðarvíkurhreppur from the conclusion published in national consultation, and those amendments were published in a separate national consultation on 29 November 2023. In the discussion on these two municipalities, information is also published for mid-2023 in addition to the information from 2021 and 2022. The conclusion on network coverage in mid-2023 was however not yet available at that point in time. Nor does ECOI have new information about connections through mobile network routers but has added those connections to the fixed line connections for the end of June 2023, in the same manner as was done for fixed line network connections for the end of 2022 in specific municipalities. Information on connections through mobile network routers was from April 2023 and that information is therefore closer to information from June 2023 than December 2022.

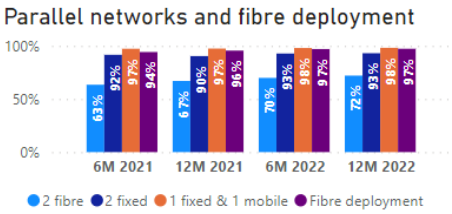
1906. There were also a number of changes to market power of Mila and Ljósleiðarinn in Seltjarnarnesbær, so information is also published on this for mid-2023. This change calls for a closer examination by ECOI, but the conclusion on significant market power was however unchanged. ECOI considers there to be no grounds to change the conclusion or discussion on other areas/municipalities regarding development of market power of companies, as this would not have changed the conclusions in those instances and would have delayed the market analysis by a number of weeks.

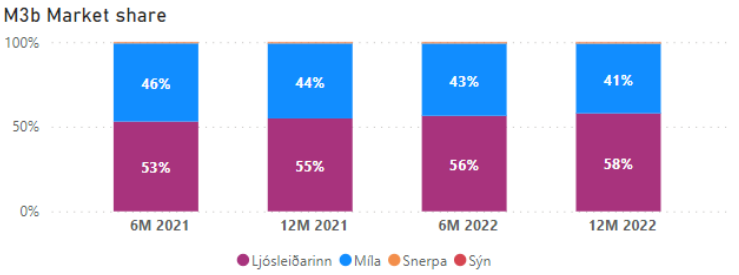
6.3.2 Area A

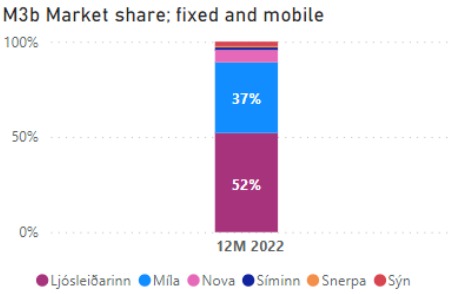
1907. The following 10 municipalities are included under Area A:

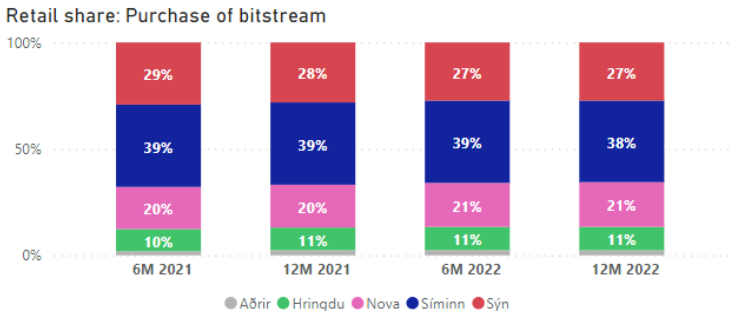
- Akraneskaupstaður
- Borgarbyggð
- Garðabær
- Hafnarfjarðarkaupstaður
- Hveragerðisbær
- Ísafjarðarbær
- Kópavogsbær
- Mosfellsbær
- Reykjanesbær.
- The City of Reykjavík

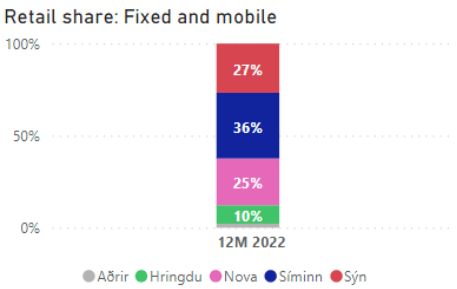












1908. The 10 municipalities belong to this geographic market are mostly in the Capital City Area or its neighbourhood, with the addition of Ísafjarðarbær in the West Fjords.

1909. The total number of bitstream connections at the end of 2022, was 118,600 in this area, of which about 106,700 are in fixed line networks and 11,900 connections in electricity mains powered mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 9% and Mila also provides bitstream service on the company's fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1910. There is not much usage of mobile network routers in this area in comparison with many others, where the share of connections over mobile network routers is however about 10% of bitstream connections in the municipalities.

1911. These municipalities are characterised by vigorous and varied retail competition where no one retailer enjoys dominance and where the retailer with the highest share has 36% of the market followed by a municipality with 27% and the third with slightly less. The competition situation at retail level is therefore good in the area in question by Icelandic standards.

1912. Two strong parties operate on wholesale markets, i.e., Mila and Ljósleiðarinn, where neither party is considered to have market dominance in the opinion of ECOI. On the relevant wholesale market, the shares of these parties are quite similar, i.e. 58% for Ljósleiðarinn against 41% for Mila. Then Snerpa has 1% share. Parallel network coverage by two fixed line networks is also substantial and is on the increase, at 72% at the end of 2022. Coverage by two fixed line networks was also very substantial, i.e. 93% or 97% if one considers distribution of one fixed line network and one mobile network. As shown in the figure here above, Ljósleiðarinn market share had been increasing at the cost of Mila in recent times. As is stated in section 5.5.2.5, there are however various indications that the Mila position could strengthen rather than weaken in this area during the lifetime of the analysis. Reference is made to that discussion.

1913. In paragraph 4 of Article 18 of the regulation on market analysis in the field of electronic communications it states that significantly high market share of one company over a significant period of time, or greater than 50%, is considered to be a strong indication of significant market power, except in exceptional circumstances. Market share could on the other hand only act as a strong indication of the above if competitors cannot increase their supply sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5, it is important to keep in mind that under certain circumstances, a company with a high market share cannot operate to a significant degree without concern for customers with a strong bargaining position, for example if the countervailing buying power is substantial. It is clear that retailers such as Nova, Hringdu and to some extent Sýn have the option of moving to the Mila network if Ljósleiðarinn tries to abuse its strength in the area in question. In addition to this, parties like Siminn, Sýn and Nova could place more emphasis on the mobile network solution in question under such circumstances.

1914. In paragraph 7 of the above specified provision, it states that if market share is high, but under 50%, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be

conducted before an opinion is reached on the existence of significant market power. ECOI considers this also to apply if market share is over 50%, particularly in duopolies or oligopolies, as the 50% boundary does not axiomatically lead to a case of significant market power. It is for example clear that in duopolies, one of the companies could have a little over 50% and the other a little under 50%. It is quite another matter than where one company has around 50% and, for example, many other companies have low market shares. This means that market share is only one of many criteria to take into account when assessing market power.

1915. In the case of a duopoly, it is not axiomatic that the above specified difference in market share leads automatically to the company with the higher market share being deemed to have a dominant position. In the opinion of ECOI, there needs to be a significantly greater difference in market share between parties than is the case in this geographic market for it to be likely that this is a case of significant market power. The EU Commission, for example, raised objections to the DBA plans for such in a Danish case that is recounted in section 5.1.10.7 here above. This was the municipality Ikast, where Energi Ikast Fibernet had 67% market share and is a wholesale-only company. Subsequent to serious objections from the Commission, DBA withdrew these plans and deemed that effective competition prevailed in this municipality.

1916. Mila's financial strength is significant, and the company has every capability to provide Ljósleiðarinn with hard competition in the area. As stated above, it is likely that Mila share will increase during the lifetime of the analysis as the company's fibre deployment progresses. In addition to this, Mila is making strong efforts to gain Nova as a customer on its fixed line networks and ECOI considers it likely that this will happen during the lifetime of the analysis, although it is difficult to predict the extent to which this will happen. It would not need a large number of Nova customers that have been on the Ljósleiðarinn fibre network, to switch to Mila network for the difference that exists today in market shares to decrease, or even disappear entirely. Sýn also has the opportunity to migrate to an increasing degree from the Ljósleiðarinn network to the Mila network, though to a lesser degree than with Nova. When Mila is released from obligations in these municipalities, subject to this market analysis, it is not outside the realms of possibility that the company could become increasingly active in the competition.

1917. As discussed in section 6.1.3.8 (Summary and conclusions on the main long-term access agreements) and in 6.1.5.9 (Vertical integration), Mila has a long-term agreement with Siminn, the largest reseller on a related retail market in this area. As stated there, there are still connections of interest between the companies which manifest at least in part the characteristics of vertical integration and there are extensive commercial connections between the companies, which strengthens Mila's position in the area.

1918. In addition to this, countervailing buying power vis-à-vis Mila is limited in the area, but is significant vis-à-vis Ljósleiðarinn by Sýn, Nova and Hringdu. It is likely that the increase in the number of Siminn customers on the Ljósleiðarinn network which has been the case during the last two years will diminish somewhat during the lifetime of the analysis, Mila fibre deployment progresses and Siminn latitude to purchase from parties other than Mila will diminish. The development in market share on the relevant wholesale market that has taken place in recent times in this area may therefore be quickly reversed, and in a significant

manner. Mila opportunities for advancement appear to be greater than those of Ljósleiðarinn in this area on the relevant market.

1919. Given the above, and particularly the good position on the related retail market in this area and the high parallel coverage of fixed line networks, and also though one only takes into account parallel coverage of fibre networks, and competitive pressure from 4G, 4.5G and 5G mobile networks, ECOI considers there to be no grounds, neither on the basis of the current situation or from a forward-looking assessment, to designate Ljósleiðarinn as having significant market power on the relevant geographic market.

1920. ECOI therefore considers that effective competition does prevail on market 3b in those municipalities belonging to Area A and that this will be the case throughout the planned lifetime of the analysis. The obligations that have rested on Mila in this area will therefore be lifted.

6.3.3 Area B

1921. The following 13 municipalities are included under Area B:

- Fjarðabyggð
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Tálknafjarðarhreppur



1922. The 13 municipalities classified under Area B here above are distributed widely across the countryside.

1923. The total number of bitstream connections at the end of 2022, was 8,800 in this area, of which about 7,240 in fixed line networks and 1,560 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 47% and Mila also provides bitstream service on the company's fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1924. Use of mobile phone routers is quite substantial in this area, and the share of connections over mobile network routers is on average about 18% of bitstream connections in the area.

1925. In municipalities categorised under Area B, a common factor is that Siminn enjoys a dominant share in retail of Internet connections, about 71% on average, and Mila it is almost dominant in both wholesale of bitstream service and access to local loops with close to 100% market share, on average, on both wholesale markets. The long-term agreement between Siminn and Mila has the impact here of strengthening the Mila position, see discussion on vertical integration here above.

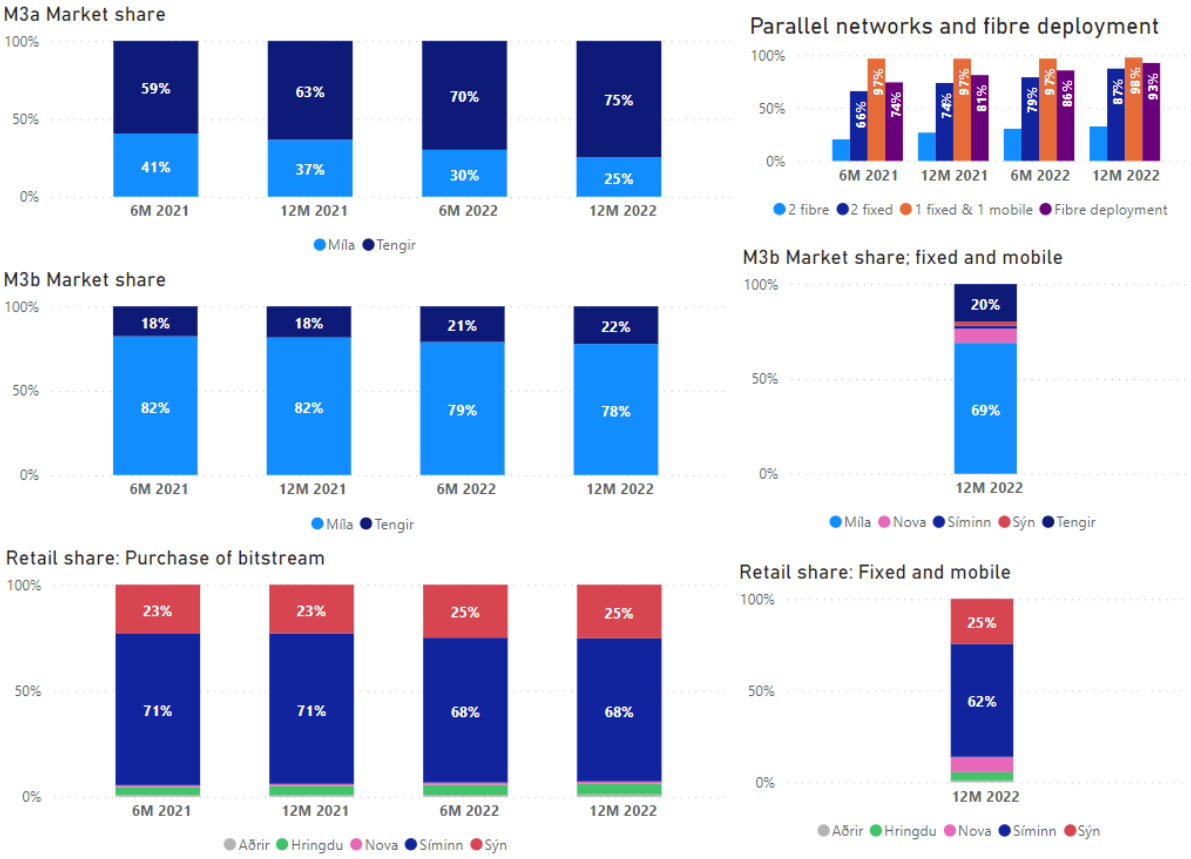
1926. Although there is some access to mobile networks, this access does not significantly alter the market shares of Siminn and Mila, and nor is it likely to do this during the lifetime of the analysis.

1927. With the above in mind, the competitive situation is therefore not at all good in this area, neither at retail level nor at wholesale level, and there are no expectations that this will improve significantly during the expected lifetime of the analysis.

1928. One must also consider it unlikely that potential competition in this area is likely to change the situation significantly. Mila has facilities that are difficult and expensive to duplicate in these rather sparsely populated municipalities. Nor is there any strong countervailing buying power of any party that can curtail Mila market power, nor is it likely that such countervailing buying power will be in place during the lifetime of the analysis.

1929. With the above in mind, ECOI considers it clear that Mila has significant market power in this area and that this will be the case throughout the expected lifetime of the analysis. For this reason, ECOI considers it necessary to impose appropriate obligations on Mila in this area.

6.3.4 Akureyrarbær



1930. In Akureyrarbær, the total number of bitstream connections at the end of 2022 was 9,380 of which about 8,330 are in fixed line networks and 1,050 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 18% and Mila also provides bitstream service on the company's fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1931. The Mila market share on the relevant market in the area is very high at about 78% at the end of 2022. It has been on a slight decline recently, having been 82% in mid-2021. Tengir

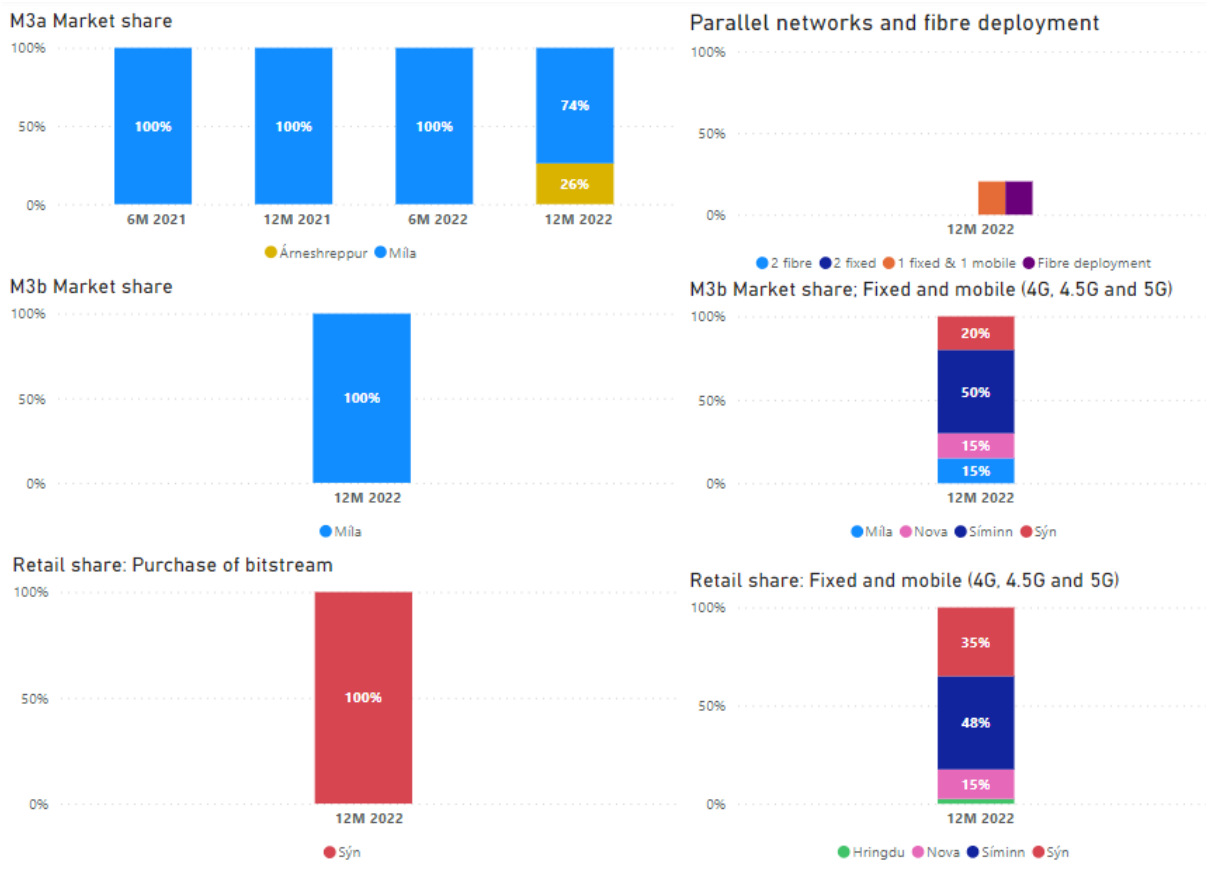
market share was 22% at the end of 2022. As Siminn has not shown interest in coming to an agreement with Tengir on bitstream access, despite Tengir's efforts in that direction, it is not expected that there will be many changes to market share throughout the lifetime of the analysis, though the Mila share could decline slightly in the coming years in accordance with developments in the recent past.

1932. Nor is the status of competition on the retail market good in this area, where Siminn had 62% market share at the end of 2022 and the next party had 25%, while others had very small shares. This means that there is a significant impact from the connection of interests between Mila and Siminn, which at least in part exhibits the characteristics of vertical integration.

1933. It cannot be seen that potential competition from bitstream operators on fixed or mobile networks will significantly change the situation in the area in question during the lifetime of the analysis, and nor can it be seen that strong countervailing buying power of some party will weaken the strong Mila position on the relevant market during the lifetime of the analysis. In addition to this, Mila has been widening its own fibre network in the area in recent years and it is expected that this deployment will continue throughout the lifetime of the analysis.

1934. Having taken this into account, ECOI considers that Míla has significant market power on market 3b and that it is necessary to impose appropriate obligations on Mila on the relevant market.

6.3.5 Árneshreppur



1935. In Árneshreppur, the total number of bitstream connections at the end of 2022 was 40, of which 6 are in fixed line networks and 34 connections in mains connected mobile network routers. Mila does not offer VDSL service in the area but provides bitstream service on the Árneshreppur fibre local loops. Hringdu. Nova, Siminn and Sýn provide mobile network service in the area.

1936. Mila is the only bitstream service operator in the municipality, and this is unlikely to change during the lifetime of the analysis in the light of the size of the market. One must nevertheless keep in mind that the local loops are owned by the municipality, which makes it mandatory to provide open wholesale access to these loops.

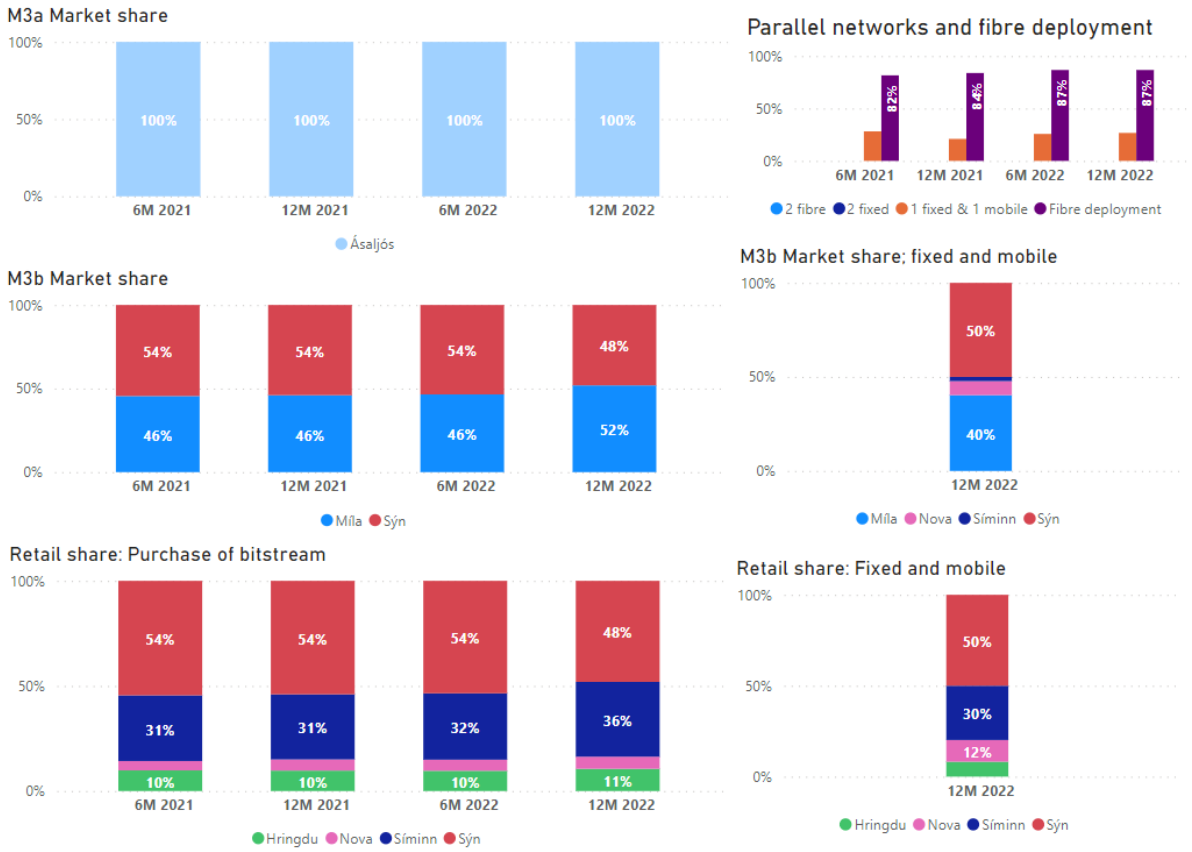
1937. ECOI expects that many residences and workplaces will choose fibre connections over mobile network connections when that is an option, but on the other hand, there is a substantial number of leisure dwellings in the municipality, and it is not certain that they will all choose fibre.

1938. In the opinion of ECOI, bitstream over fibre local loops will increase significantly but there is however in this area, significant usage of mobile network routers and this means that the mobile network will provide competitive restraint for the fixed line network. This market is very small, 40 connections and carries very little weight at a national level.

1939. No company has more than 50% market share in retail when one considers all bitstream service in the area, but Siminn and Sýn are the strongest parties in the area.

1940. With all of the above in mind, ECOI considers there to be no grounds to designate Mila as a company with significant market power in Árneshreppur on market 3b. The obligations that now rest on Mila in the municipality will therefore be lifted.

6.3.6 Ásahreppur

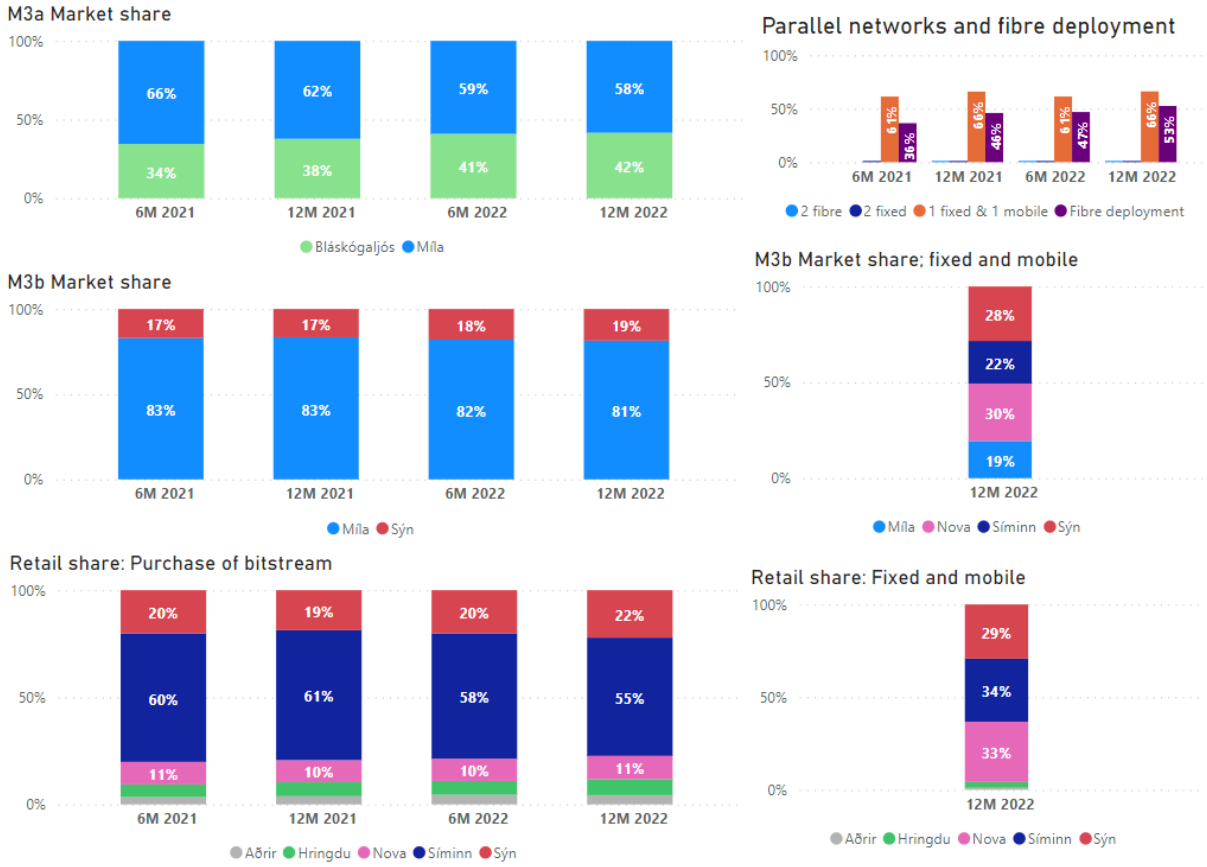


1941. In Ásahreppur, the total number of bitstream connections at the end of 2022 was 135, of which about 105 are in fixed line networks and 30 connections in mains connected mobile network routers. Mila does not offer VDSL service in the municipality but provides bitstream service over Ásaljós local loops, as has Syn in the past. Nova, Siminn and Sýn provide mobile network service in the area.

1942. Now that the Ljósleiðarinn purchase of the Sýn bitstream system is completed, and an agreement to this effect processed by CA, Ljósleiðarinn is a more powerful company in wholesale operation on bitstream systems than Sýn has been, but Sýn had first and foremost used the system for its own retail. It is therefore possible that retail competition will be strengthened to some degree with Ljósleiðarinn's take-over of the Sýn system, and thus competition at wholesale level for bitstream service.

1943. ECOI therefore assesses the status of competition on market 3b such that it is effective and will be so during the lifetime of the analysis. The obligations that now rest on Mila on the relevant market will therefore be lifted.

6.3.7 Bláskógabyggð



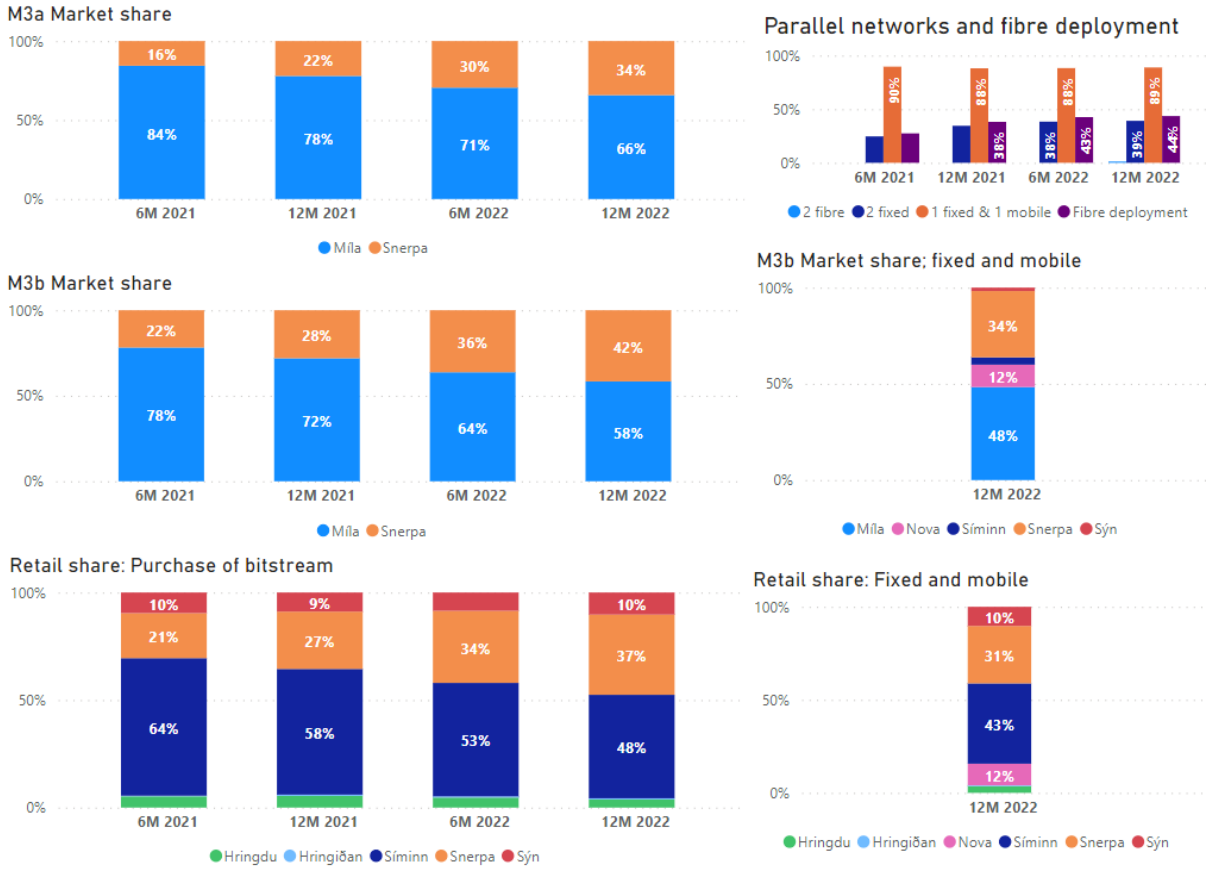
1944. In Bláskógabyggð, the total number of bitstream connections at the end of 2022 was 1,540, of which about 370 are in fixed line networks and 1,170 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 8% and Mila also provides bitstream service on the company's own fibre local loops and on the Bláskógarljós fibre local loops, as has Sýn. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1945. Míla enjoys a dominant market share on the market for wholesale bitstream service over fixed line networks in Bláskógabyggð and it is unlikely that this situation will change during the lifetime of the analysis. Mobile networks provide significant competition for fixed line networks in the municipality, in all likelihood, first and foremost to summerhouses rather than residences and companies. About 65% of residences and companies have access to one fixed line network and have good mobile network connections[376]. Having taken account of mobile networks, Mila share is however only 19% on the bitstream market, where all mobile network companies have a higher share than Mila.

1946. ECOI therefore assesses the position in Bláskógabyggð such that effective competition prevails there on market 3b and that there is little likelihood of it changing during the lifetime of the analysis. The obligations that now rest on Mila on the relevant market will therefore be lifted.

[376] Mobile network distribution is decided by a prediction model.

6.3.8 Bolungarvíkurkaupstaður



1947. In Bolungarvíkurkaupstaður, the total number of bitstream connections at the end of 2022 was just under 450, of which about 370 are in fixed line networks and just under 80 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 48%. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

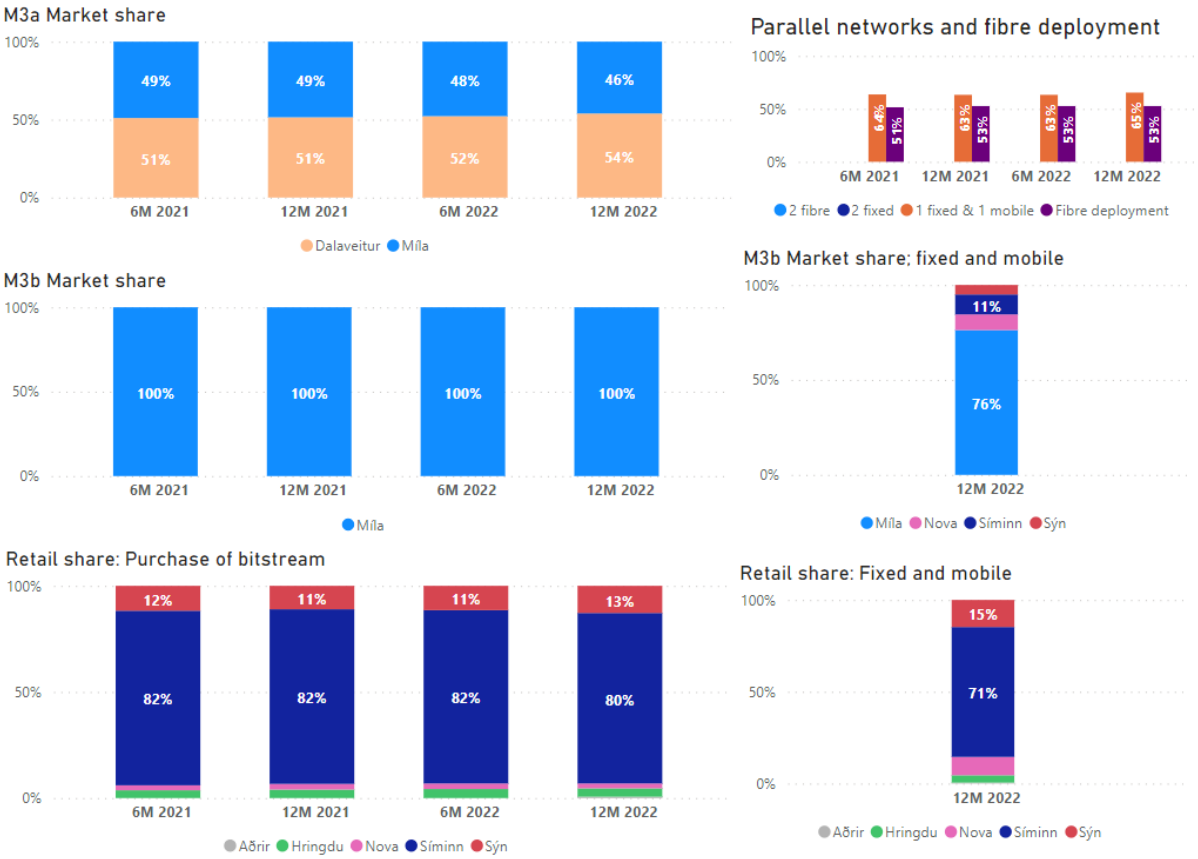
1948. In Bolungarvík, Mila has something over 58% market share against just under 42% market share for Snerpa on the bitstream market for fixed line networks. To some extent, Snerpa bases its progress on bitstream service on local loop lease on copper local loops from Mila which the company uses for its own VDSL system, first and foremost for its own retail, but wholesale access to this is also on offer. After taking mobile networks into account, the Snerpa share is something over 34% and the Mila share is 48%. Snerpa is the only vertically integrated electronic communications company in its operational territory where the company owns fibre local loops and operates a bitstream system on them for its own retail. Also, access is on offer on those bitstream systems, as it is on the Snerpa VDSL systems. Vodafone is a customer of Snerpa at wholesale level, but Siminn has not accepted the Snerpa offer of access.

1949. When one takes into account the difference in size between the companies, economy of scope, financial strength and contractual relationship with the largest retailer, Siminn, with Mila, one must consider the Mila position to be significantly stronger than that of Snerpa.

1950. Snerpa has continued fibre deployment during the year 2023 and has plans for further deployment in the coming years. This means that there are grounds for the Snerpa position strengthening in all likelihood during the lifetime of the analysis in Bolungarvík.

1951. ECOI assesses that with all the above in mind and on the basis of forward-looking assessment, there will be effective competition on market 3b in Bolungarvíkurkaupstaður during the lifetime of the analysis. The obligations that have rested on Mila in the municipality will therefore be lifted.

6.3.9 Dalabyggð

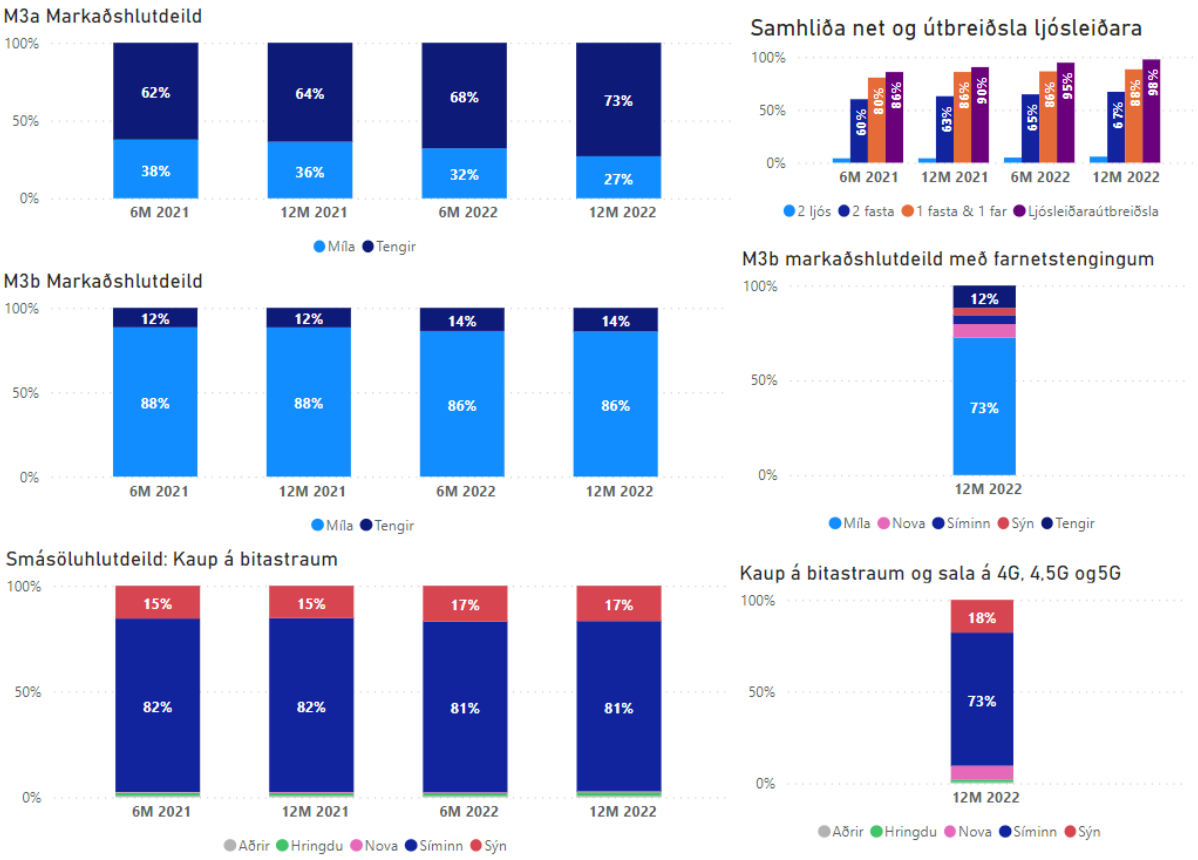


1952. In Dalabyggð, the total number of bitstream connections at the end of 2022 was 400, of which 305 are in fixed line networks and just under 95 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 29% and Mila also provides bitstream service on the company's own fibre local loops and on the Dalaveitur fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1953. Mila has 76% market share, having taken into account mobile networks and is the only operator of bitstream service in the municipality. It is unlikely that this situation will change to any significant degree during the lifetime of the analysis.

1954. ECOI therefore designates Mila as having significant market power in Dalabyggð and it is therefore necessary to impose appropriate obligations on Mila on the relevant market.

6.3.10 Dalvíkurbyggð



1955. In Dalvíkurbyggð, the total number of bitstream connections at the end of 2022 was 845, of which about 715 are in fixed line networks and 130 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 21% and Mila also provides bitstream service on the company's own fibre local loops and on the Tengir fibre local loops. Nova, Siminn and Sýn provide mobile network service in the area.

1956. Tengir has not been successful in the municipality with its bitstream service. It is unlikely that this position will change while the analysis is in force. Retail in the area is characterised by a high Siminn share on fixed line networks and there is insignificant impact from competition from mobile networks. Mila thus enjoys countervailing buying power vis-à-vis Tengir. One also has to assess the Mila financial power compared with Tengir, and the companies' economies of scope and scale. As Siminn has not shown interest in using Tengir bitstream for its retail, Tengir opportunities for growth are limited to the success of others in retail competition with Siminn. Tengir access points are in Akureyri, and retailers therefore need to have control of a connection to that location from which to provide their service. Although parties other than Mila can provide connections to Akureyri, it is not possible to consider them to be an adequate option for activating retail competition in the municipality.

1957. Siminn has a significantly high market share in retail, i.e. 73%, and ECOI considers that one can discern the characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens the Mila position in the municipality. Continued access to Mila bitstream system is therefore necessary for competition at retail level.

1958. Having taken the above into account, ECOI assesses the situation on market 3b in Dalvíkurbyggð to be such that Mila enjoys significant market power on market 3b, and that there is a need to impose appropriate obligations on Mila in that municipality.

6.3.11 Eyja- og Miklaholtshreppur



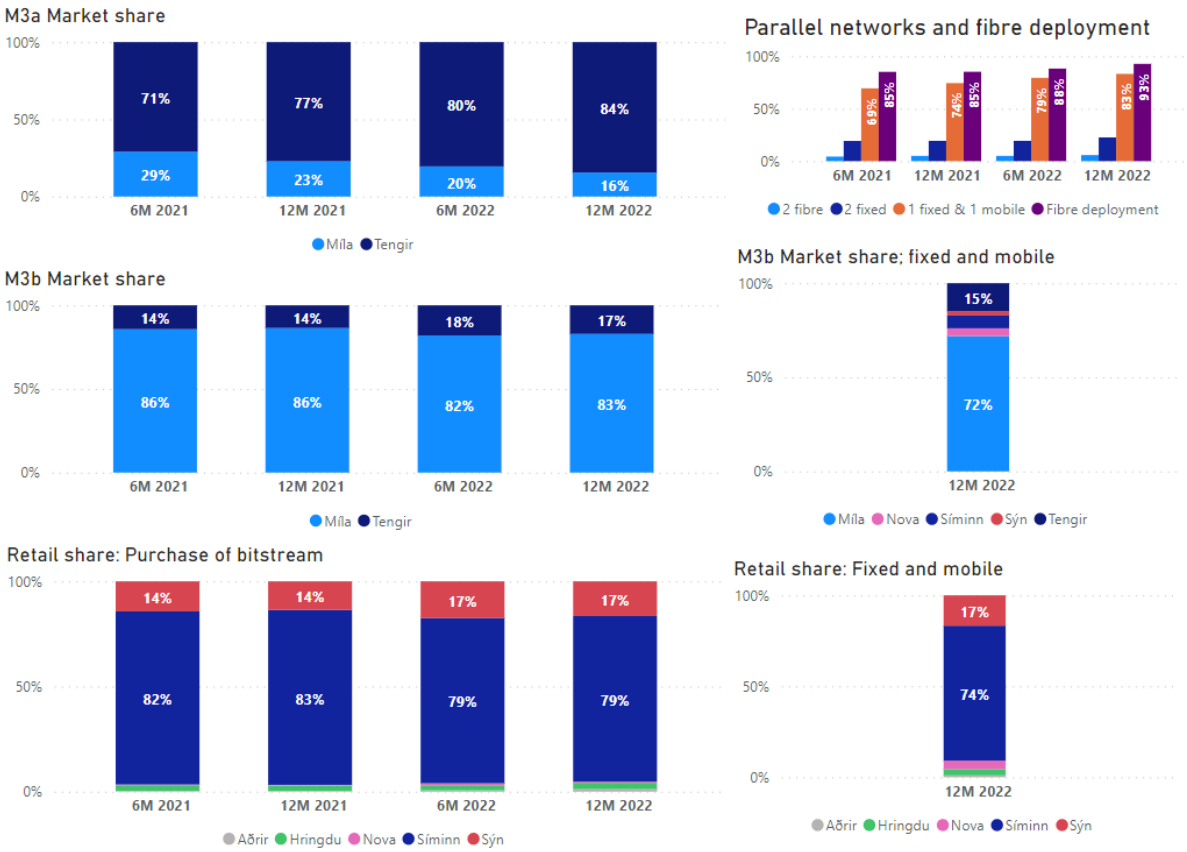
1959. In Eyja- og Miklaholtshreppur, the total number of bitstream connections at the end of 2022 was 84, of which 78 were in fixed line networks and 6 in mains connected mobile network routers. Mila does not offer VDSL service in the area but provides bitstream service on its own fibre local loops and on the Eyja- og Miklaholtshreppur fibre local loops. Siminn and Sýn provide mobile network service in the area.

1960. Despite the fact that there is open access for bitstream providers on the municipality's network, it is unlikely that a new bitstream provider will start offering service in the light of location and small size of the market. Siminn enjoys a dominant market share at retail level which strengthens the Mila position. There is very little impact from competition from mobile networks in the municipality. Continued access to Mila bitstream system is therefore necessary for competition at retail level.

1961. In recent times, Mila has had 100% market share in broadband connections over a fixed line network. Having taken into account mobile network connections, Mila has 93% market share of bitstream connections in the municipality. ECOI estimates that the 93% Mila market share indicates significant market power for the company in Eyja- og Miklaholtshreppur.

1962. Having taken the above into account, ECOI assesses the situation on market 3b in Eyja- og Miklaholtshreppur to be such that Mila enjoys significant market power on market 3b, and that there is a need to impose appropriate obligations on Mila in that municipality.

6.3.12 Eyjafjarðarsveit



1963. In Eyjafjarðarsveit, the total number of bitstream connections at the end of 2022 was 385, of which about 335 are in fixed line networks and 50 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 7% and Mila also provides bitstream service on the company's own fibre local loops and on the Tengir fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1964. In recent times, Mila has had over 80% market share in broadband connections over a fixed line network. Having taken into account mobile network connections, Mila has 72% market share of bitstream connections in the municipality.

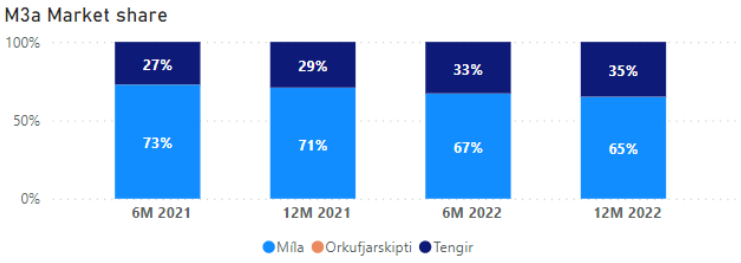
1965. Mila thus enjoys countervailing buying power vis-à-vis Tengir. Mila has considerably more financial strength and enjoys greater economies of scale and scope than Tengir. As Siminn has not shown interest in using Tengir bitstream for its retail, Tengir opportunities for growth are limited to the success of others in retail competition with Siminn. Tengir access points are in Akureyri, and retailers therefore need to have control of a connection to that location from which to provide their service. Although parties other than Mila can provide connections to Akureyri, it is not possible to consider them to be an adequate option for

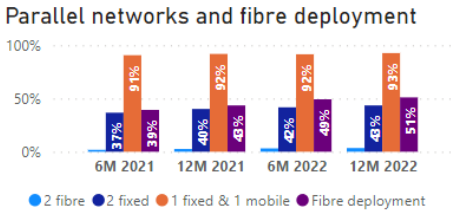
activating retail competition in the municipality. Continued access to Mila bitstream system is therefore necessary for competition at retail level in the municipality.

1966. There is a similar situation in the neighbouring municipalities of Norðurþing and Þingeyjarsveit, where Mila shares are also high and are supported by high Siminn market share is on a related retail market. Competitive pressure from Mila competitors in neighbouring municipalities is therefore not significant, which supports the Mila position in Eyjafjarðarsveit. Siminn market share is very high in the municipality. ECOI also considers that one can discern the characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens Mila's position in the municipality.

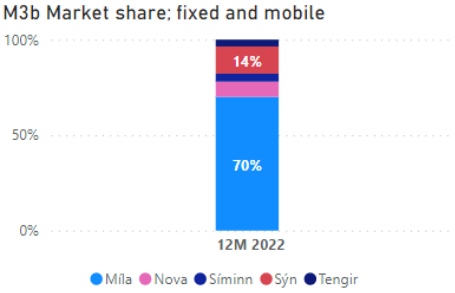
1967. Having taken the above into account, ECOI deems the situation on market 3b in Eyjafjarðarsveit to be such that Mila enjoys significant market power and that there is a need to impose appropriate obligations on Mila in that municipality.

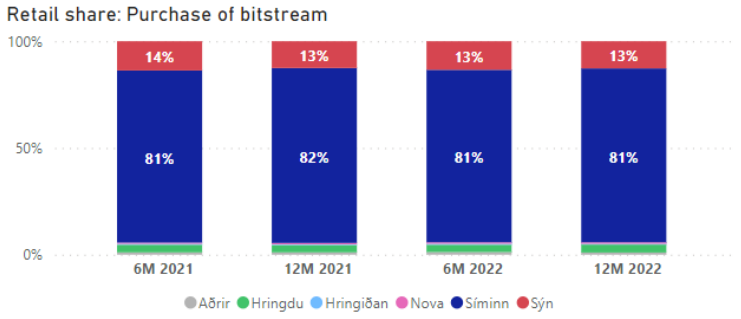
6.3.13 Fjallabyggð

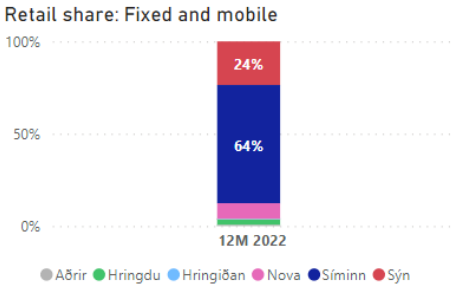












1968. In Fjallabyggð, the total number of bitstream connections at the end of 2022 was 1,200, of which about 880 are in fixed line networks and 320 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 43% and Mila also provides bitstream service on the company's own fibre local loops and on the Tengir fibre local loops. The share of Mila VDSL bitstream is 62% of its bitstream over fixed line.

1969. Hringdu, Nova, Síminn og Sýn provide mobile network service in the area but the impact of mobile networks is discernible, though not significant.

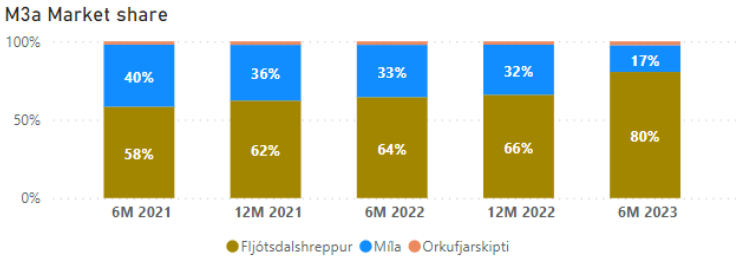
1970. Mila share is 70% in wholesale bitstream when one takes into account mobile networks, but 95% of bitstream service is over fixed line networks.

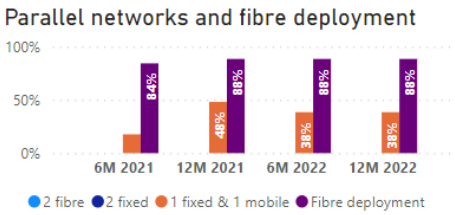
1971. Mila retail share is quite considerable, at 81% for service of a fixed line networks and 64% when one takes into account mains connected mobile network routers. ECOI considers that one can discern the characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens Mila's position in the municipality.

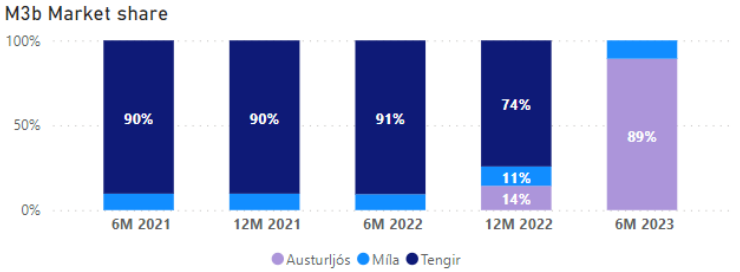
1972. Tengir has not achieved progress in its bitstream service, and it is unlikely that this will change during the lifetime of the analysis, and Mila enjoys countervailing buying power vis-à-vis Tengir with respect to access to Tengir local loops. One also has to assess the Mila financial power compared with Tengir, and the companies' economies of scope and scale. As Siminn has not shown interest in using Tengir bitstream for its retail, Tengir opportunities for growth are limited to the success of others in retail competition with Siminn. Tengir access points are in Akureyri, and retailers therefore need to have control of a connection to that location from which to provide their service. Although parties other than Mila can provide connections to Akureyri, it is not possible to consider them to be an adequate option for activating retail competition in the municipality. Retailers can on the other hand, gain access from one point in Reykjavik to all residences and companies that connect to the Mila bitstream systems. Continued access to Mila bitstream system is therefore necessary for competition at retail level in Fjallabyggð.

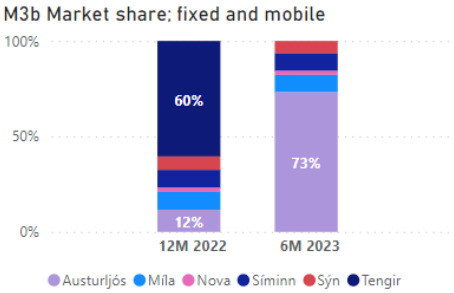
1973. ECOI therefore designates Mila as a company with significant market power on market 3b in Fjallabyggð, and necessary obligations will be imposed on the company in the municipality.

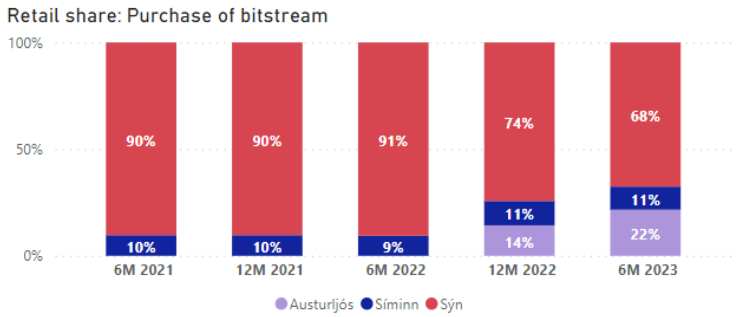
6.3.14 Fljótsdalshreppur

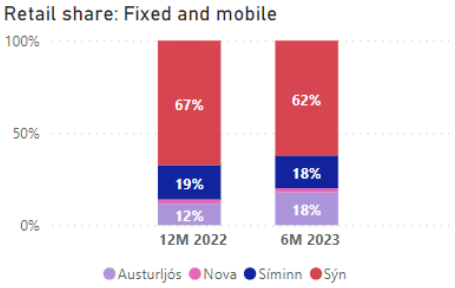












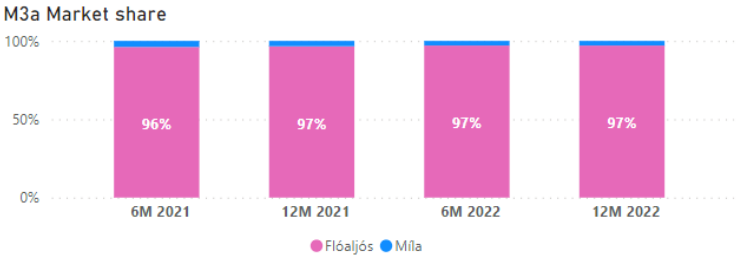
1974. In Fljótsdalshreppur, the total number of bitstream connections at the end of 2022 was 43, of which about 35 are in fixed line networks and 8 connections in mains connected mobile network routers. In mid-2023, there were 37 bitstream connections. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 5% and Mila provides almost no bitstream service over fibre local loops. Nova, Siminn and Sýn provide mobile network service in the area.

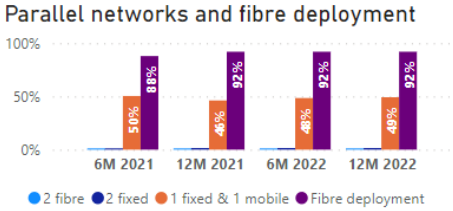
1975. Austurljós has taken over the operation of the bitstream service from Tengir on the Fljótsdalshreppur fibre network. In 2023, Austurljós was appointed by the municipality to be the service provider on the local loop network owned by the municipality through an agreement with HEF Veitur. The service that the municipality intends to provide arises from a community project and Austurljós is subject to obligations from inhabitants to manage its operations effectively in the municipality. This market is very small, or only 37 connections and carries negligible weight at a national level. ECOI does not expect the Austurljós position to change while Fljótsdalshreppur considers there to be no reason to appoint another party to operate its fibre network.

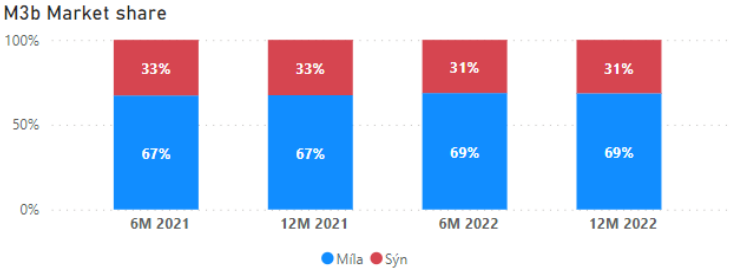
The Austurljós position has however strengthened significantly during the period of validity of the market analysis in the relevant municipality, on this market. The company is vertically integrated, having fibre net infrastructure in the ground, though not in this municipality, and it operates its own bitstream service and is an Internet service provider in retail. In the light of dominant market share, although this is a market with very few customers, ECOI considers

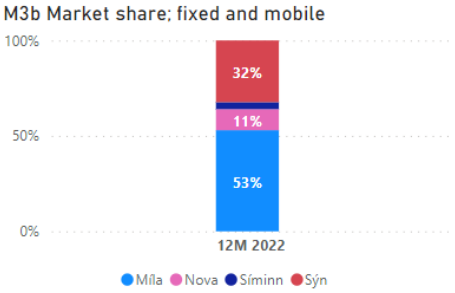
there now to be grounds to designate Austurljós as having significant market power in the municipality and to impose on it the appropriate obligations.

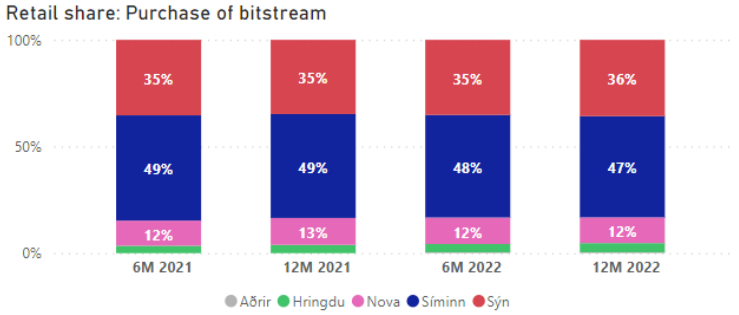
6.3.15 Flóahreppur

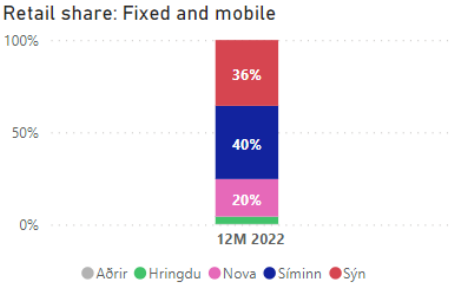










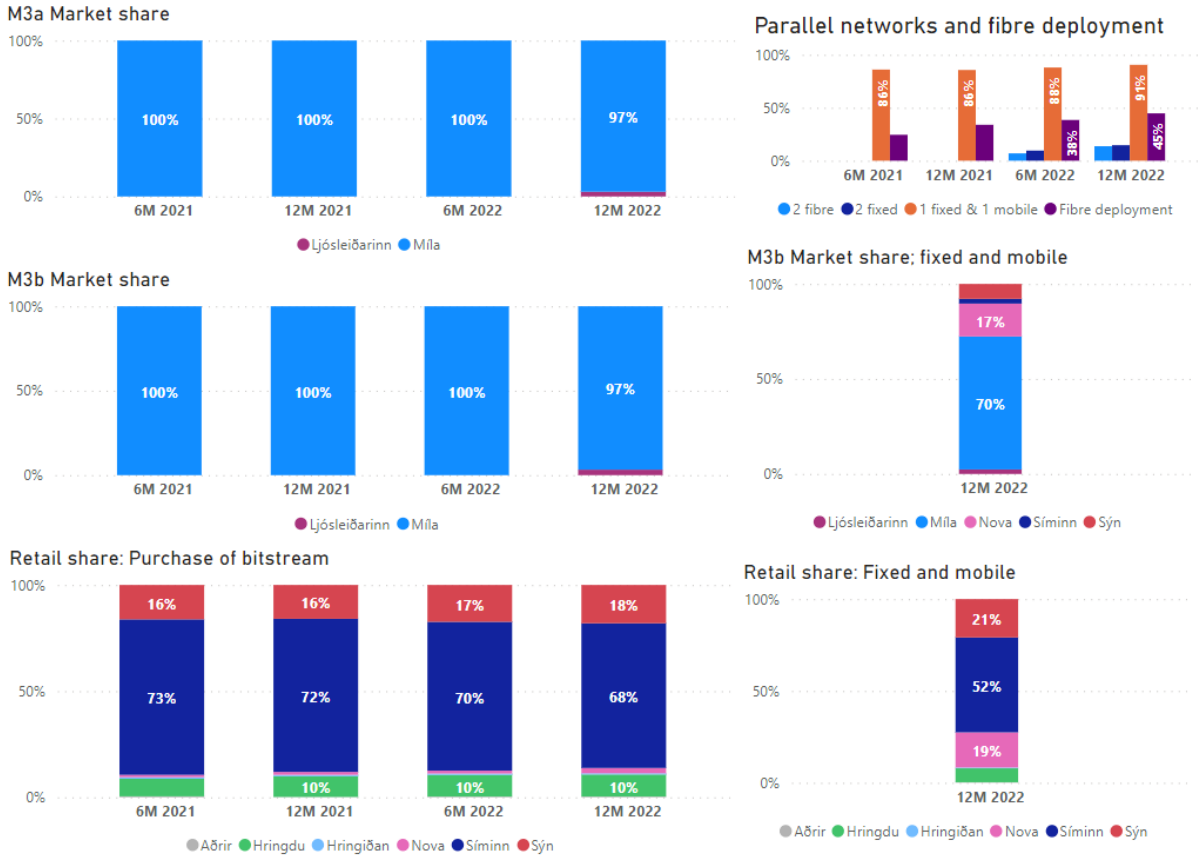


1976. In Flóahreppur, the total number of bitstream connections at the end of 2022 was 300, of which about 230 are in fixed line networks and 70 connections in mains connected mobile network routers. Mila does not offer VDSL service in the area but provides bitstream service on its own fibre local loops and on the Flóaljós fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1977. Mila share is 69% of the end of 2022 in bitstream service over fixed line and 53%, taking into account mobile networks. Sýn has developed a bitstream system on the Flóahreppur network and Ljósleiðarinn has acquired that network. Ljósleiðarinn is a more powerful competitor than Sýn, and the likelihood is that competition in retail will increase with the entry of that company through the former Sýn systems.

1978. On the Flóaljós network, which is an open wholesale network that has enjoyed public support, there are therefore two parties operating wholesale bitstream service. Looking to the future, ECOI considers that the status of competition on market 3b in Flóahreppur is tending towards effective competition and that this will be the situation during the lifetime of the analysis. The obligations that have rested on Mila in the municipality will therefore be lifted.

6.3.16 Grindavíkurbær



1979. In Grindavíkurbær, the total number of bitstream connections at the end of 2022 was 1,480, of which about 1,070 are in fixed line networks and 410 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 42% and Mila also provides bitstream service on the company's own fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

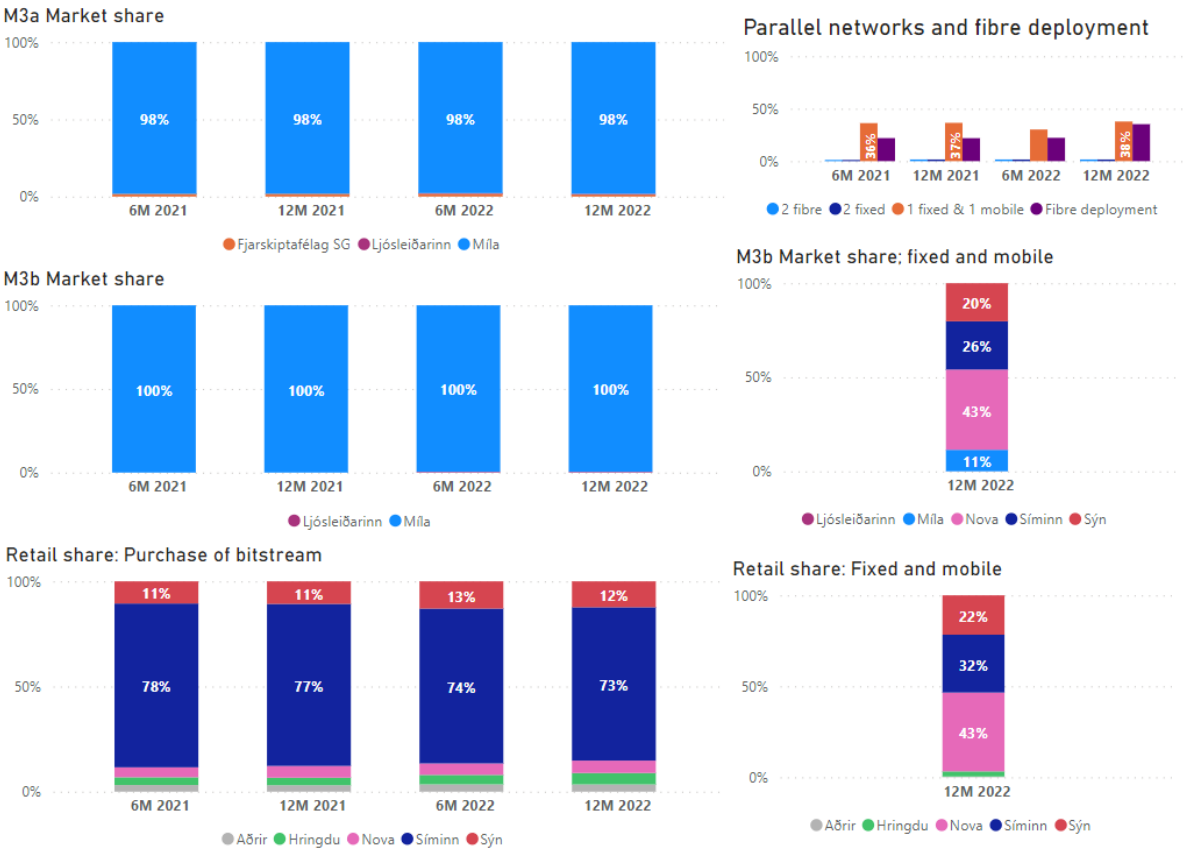
1980. Míla has a high market share, i.e. 69% having taken mobile network connections into account in mid-year 2023[377], and also has high market share on the underlying market 3a. ECOI considers it unlikely that the Mila share will decrease significantly while this analysis is in force though connections may decrease. It is clear that plans for fibre roll-out our seriously disrupted because of the catastrophe that has hit the municipality, which is described in more detail in the section on Grindavík concerning market 3a here above. For this reason, one can expect there to be little change in the situation with respect to fixed line connections.

1981. Míla already has a strong position on the wholesale market and Siminn has a strong position on the retail market. Reference is made to discussion in section 6.2.16 on the status in Grindavíkurbær on market 3a.

[377] See Appendix C for information that reaches mid-2023.

1982. ECOI therefore designates Mila as a company with significant market power in Grindarvíkurbær, and appropriate obligations will be imposed on the company in the municipality.

6.3.17 Grímsnes- og Grafningshreppur



1983. In Grímsnes- og Grafningshreppur the total number of bitstream connections at the end of 2022 was 1,770, of which about 200 are in fixed line networks and 1,570 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 5% and Mila also provides bitstream service on the company's own fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

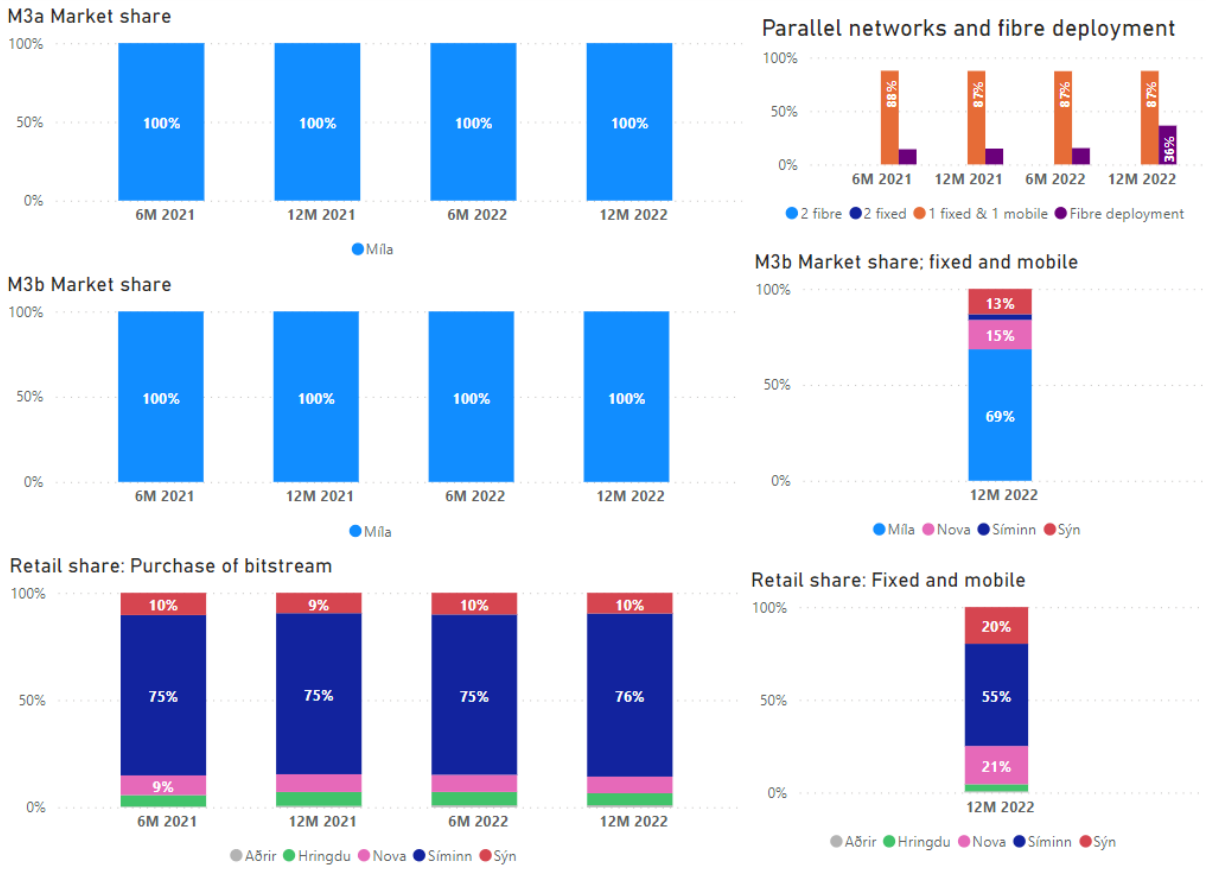
1984. Part of the Mila network was developed with state aid, which means that there are obligations resting on the network for open access to Mila local loops in the countryside.

1985. Despite the fact that Mila has 100% market share with respect to bitstream service and fixed line networks, the Mila share is only 11% when one takes into account mobile networks, regarding the number of customers in the municipality. One must consider it almost certain that this is first and foremost because of service to summerhouses. Having taken mobile networks into account, Nova has the largest share of the bitstream market, i.e. 43%.

1986. ECOI therefore considers there to be effective competition on the relevant market in Grímsnes- og Grafningshreppur and that this is not likely to change during the expected

period of validity of the analysis. The obligations that now rest on Mila on the relevant market will therefore be lifted.

6.3.18 Grundarfjarðarbær



1987. In Grundarfjarðarbær, the total number of bitstream connections at the end of 2022 was 470, of which about 320 are in fixed line networks and 150 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 47% and Mila also provides bitstream service on the company's own fibre local loops. Nova, Siminn and Sýn provide mobile network service in the area.

1988. Mila owns a fibre network in the municipality and the Mila fibre network reached 36% of residences and workplaces. Míla has plans for fibre deployment in the area[378] and according to information on the company's website the plans were immediately in place for the year 2023. ECOI is not aware of other parties that planned deployment in the municipality.

1989. There are no parallel networks in the municipality and ECOI does not expect that this situation will change significantly in the near future.

1990. There is some impact from mobile networks in the municipality, where Mila has 69% market share on market 3b, having taken into account connections through mains connected mobile network routers. The high Siminn market share on the retail market strengthens the

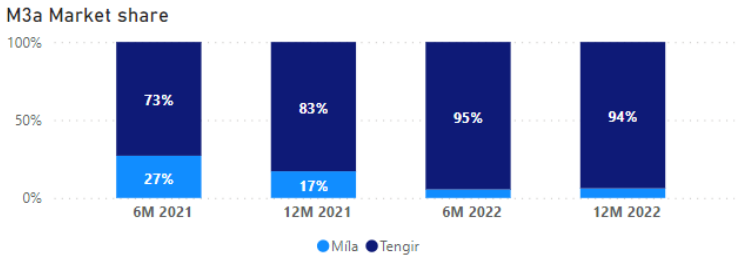
[378] [...].

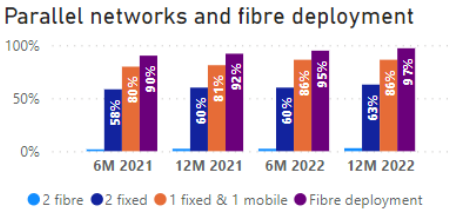
Mila position. ECOI does not consider it likely that the Mila position will weaken on this market during the lifetime of this market analysis.

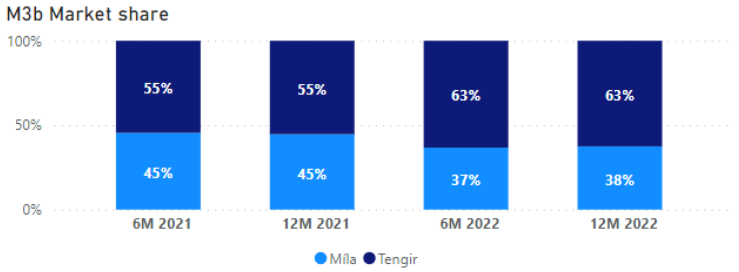
1991. Continued access to Mila bitstream system is therefore necessary for competition at retail level.

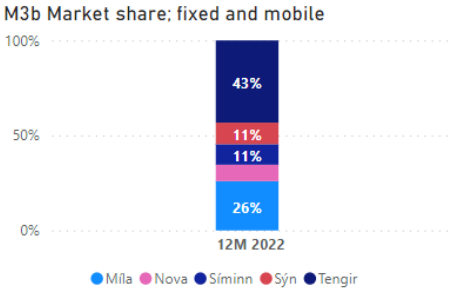
1992. Having taken the above into account, ECOI deems the situation on market 3b in Grundarfjarðarbær to be such that Mila enjoys significant market power and that there is a need to impose appropriate obligations on Mila in that municipality.

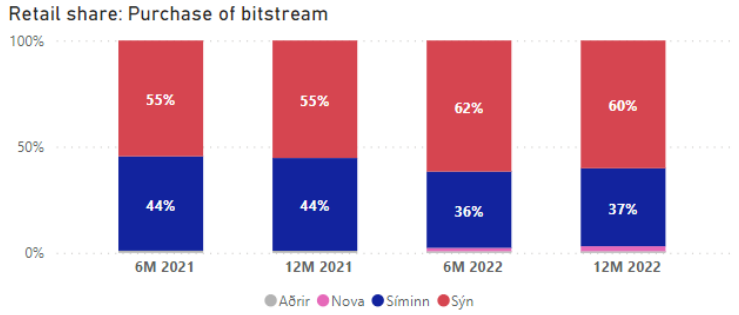
6.3.19 Grýtubakkahreppur

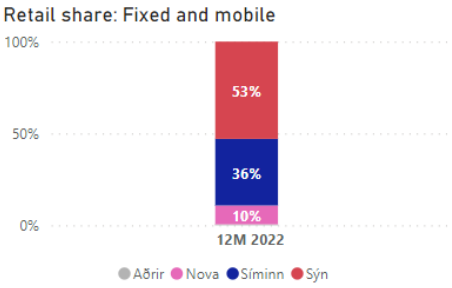












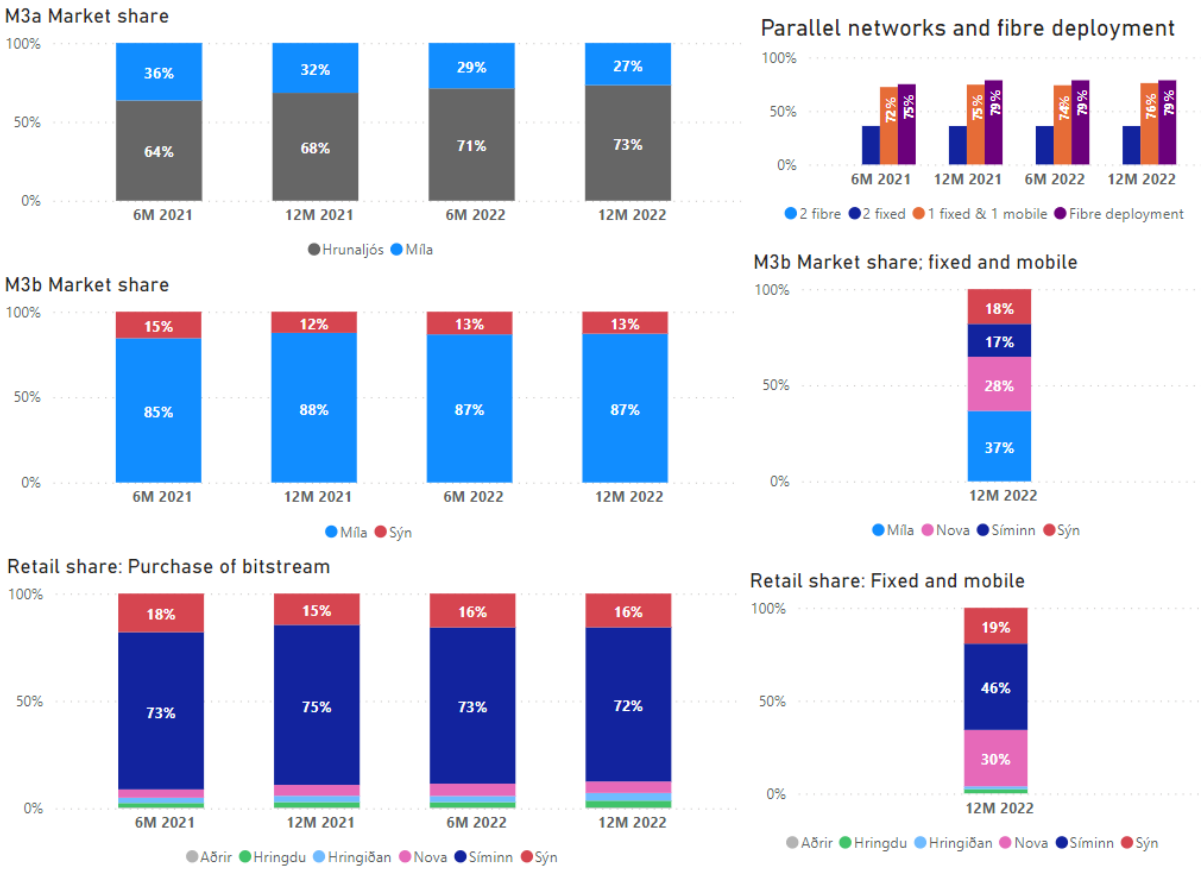
1993. In Grýtubakkahreppur, the total number of bitstream connections at the end of 2022 was 185, of which about 130 are in fixed line networks and 55 connections in mains connected mobile network routers. Mila offers VDSL service in the area, though this service is negligible, where the proportion of VDSL of the total number of bitstream connections is only 4% and Mila also provides bitstream service on the company's fibre local loops. Nova, Siminn and Sýn provide mobile network service in the area.

1994. In Grýtubakkahreppur, Tengir has a fibre network to almost all spaces in the municipality and the company provides access to its fibre local loops that Mila uses to operate its bitstream service. Tengir operates its own bitstream system which is solely for wholesale, and the company does not operate at retail. Mobile networks have some impact and are in total almost one third of bitstream connections in the municipality.

1995. Tengir market share has been on the increase on the bitstream market over fixed line network since 2021. Having taken into account mobile network connections, Tengir market share is 43%. Parallel coverage is quite significant when one takes into account fixed line connections, i.e. 86%.

1996. ECOI considers there to be effective competition on market 3b in Grýtubakkahreppur and this is likely to be the case throughout the lifetime of the analysis. The obligations that now rest on Mila on the relevant market will therefore be lifted.

6.3.20 Hrunamannahreppur



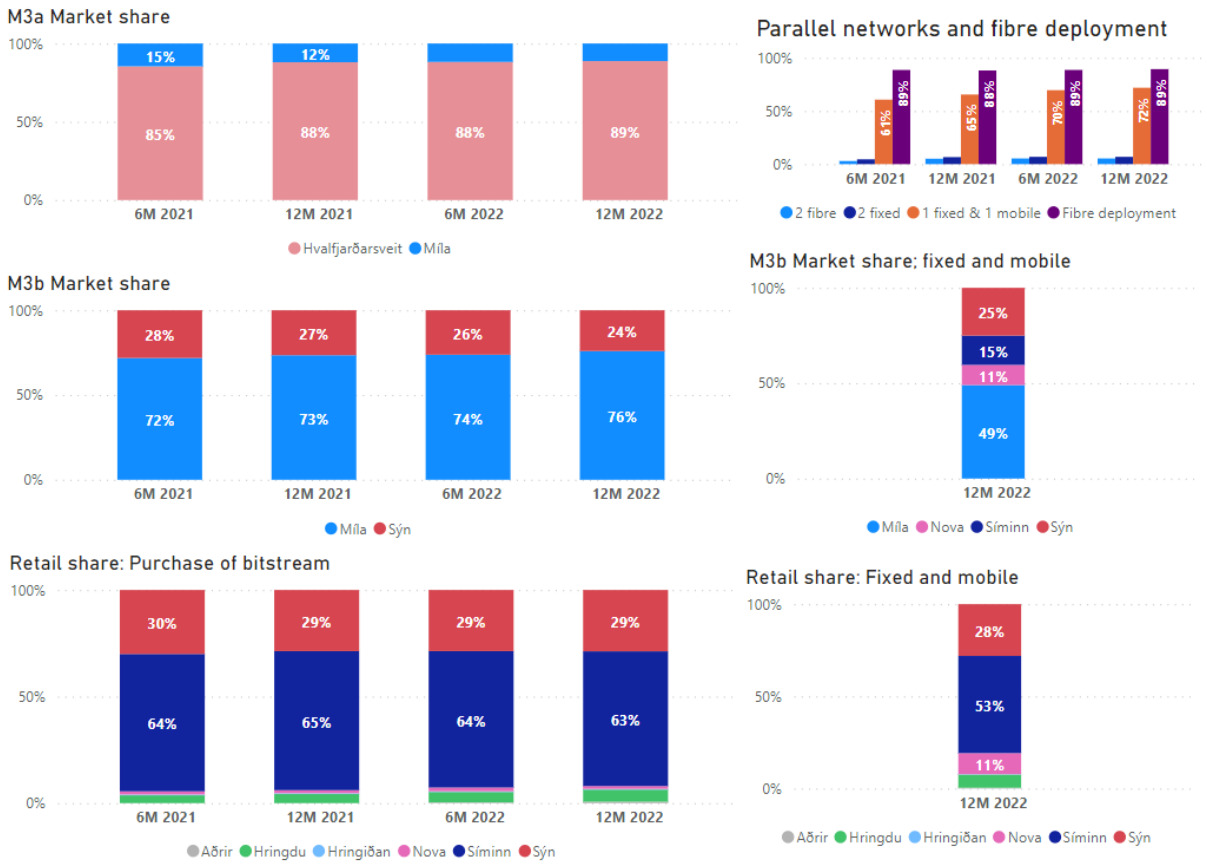
1997. In Hrunamannahreppur, the total number of bitstream connections at the end of 2022 was 665, of which about 280 are in fixed line networks and 385 connections in mains connected mobile network routers. Mila offers VDSL service in the area the company proportion of VDSL of the total number of bitstream connections is 6% and Mila also provides bitstream service on the company's own fibre local loops and on the Hrunaljós system, as has Sýn in the past. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

1998. The Mila share is dominant on bitstream over fixed lines, i.e. 87% at the end of 2022, Hrunaljós network reaches 76% of workplaces and residences and 92% of residences in the municipality and there is open access for bitstream providers to the network. The Sýn bitstream service system has been taken over by Ljósleiðarinn and one can consider that this will strengthen competition in bitstream service over fixed line in Hrunamannahreppur. Mobile network service also has a significant impact on the retail competitive environment,

which transfers to market share in bitstream service having taken mobile networks into consideration.

1999. ECOI considers there to be effective competition on market 3b in Hrunamannahreppur and this is likely to be the case throughout the lifetime of the analysis. The obligations that now rest on Mila on the relevant market will therefore be lifted.

6.3.21 Hvalfjarðarsveit



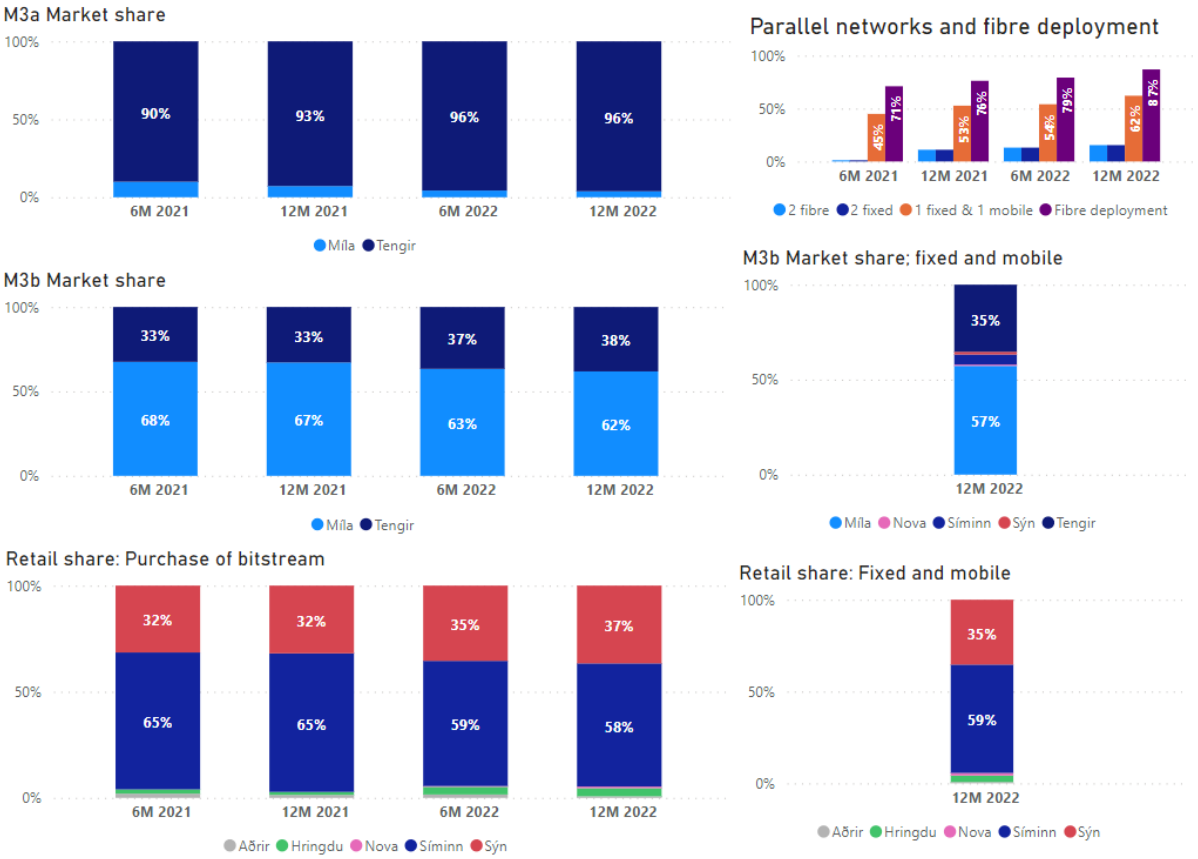
2000. In Hvalfjarðarsveit, the total number of bitstream connections at the end of 2022 was 465, of which about 300 are in fixed line networks and 165 connections in mains connected mobile network routers. Mila offers VDSL service in the area the company proportion of VDSL of the total number of bitstream connections is 2% and Mila also provides bitstream service on the company's own fibre local loops and on the Hrunaljós system, as has Sýn. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

2001. Mila has a significantly high market share and bitstream service over fixed lines, i.e. 76%, although mobile networks have substantial impact in the municipality where the Mila market share is 49% having taken mobile connections into account.

2002. The Hvalfjarðarsveit fibre network reaches 68% of residences and workplaces, and 90% of residences. Sýn has operated bitstream equipment there for its own retail and one can expect that competition at wholesale level will increase as Ljósleiðarinn has taken over the service. Mobile networks also have considerable impact which changes the shares in both retail and wholesale market for bitstream if one considers fixed line networks.

2003. ECOI therefore considers there to be effective competition on market 3b in Hvalfjarðarsveit and this is likely to be the case throughout the lifetime of the analysis. The obligations that now rest on Mila on the relevant market will therefore be lifted.

6.3.22 Hörgársveit



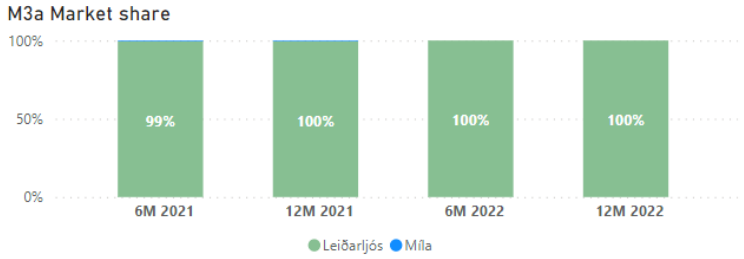
2004. In Hörgársveit, the total number of bitstream connections at the end of 2022 was 280, of which about 260 are in fixed line networks and 20 connections in mains connected mobile network routers. Mila VDSL service is in significant decline, where the proportion of VDSL of the total number of bitstream connections was only 1% at the end of 2022. Mila also provides bitstream service over the company's local loops and over Tengir fibre network, where Tengir also has its own bitstream. Nova, Siminn and Sýn provide mobile network service in the area.

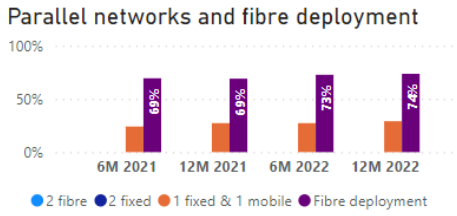
2005. Tengir is achieving increasing success in its bitstream service, and this is likely to continue to be the case throughout the lifetime of the analysis. Siminn enjoys a dominant market share at retail level which strengthens the Mila position. There is little impact from competition from mobile networks in the municipality, but one can consider, however that continued access to Mila bitstream system will continue to be important for competition at retail level, where Mila now has 62% at the end of 2022 in bitstream over fixed line networks and 57% when one takes into account mobile networks, then the Mila share will decline.

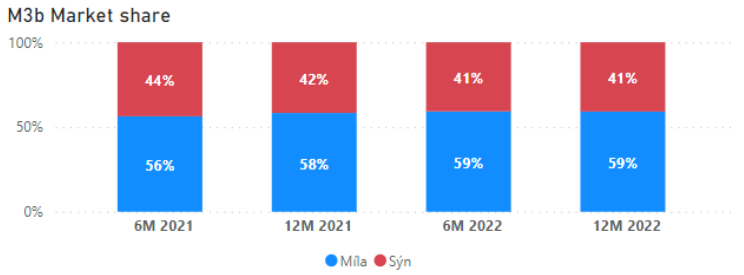
2006. It is the ECOI assessment that Tengir bitstream service exerts adequate competitive pressure on the Mila position in the municipality such that it tends towards effective competition on market 3b in the municipality during the lifetime of the analysis. The

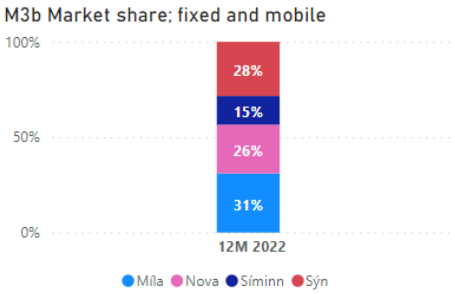
obligations that have rested on Mila in the municipality in question on market 3a up to this point in time, will be lifted.

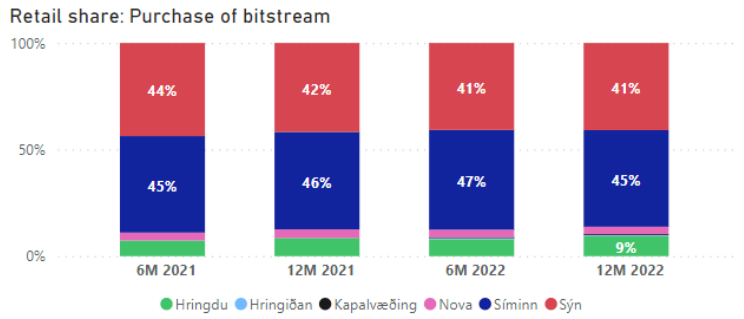
6.3.23 Kjósarhreppur

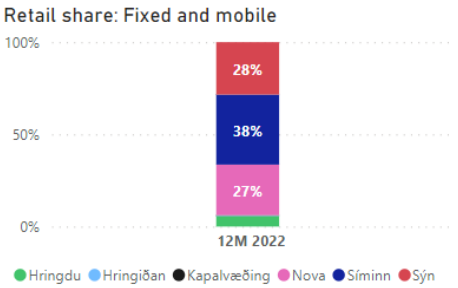










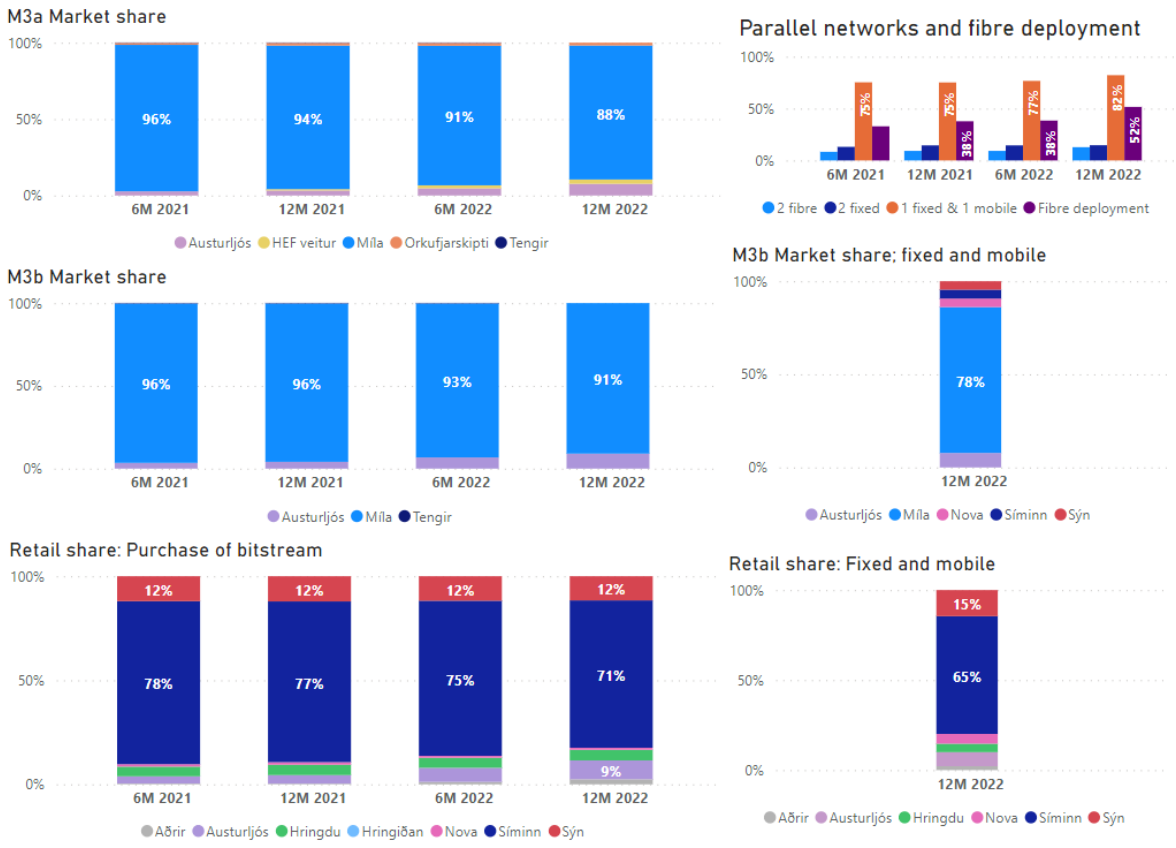


2007. In Kjósarhreppur, the total number of bitstream connections at the end of 2022 was 390, of which about 205 are in fixed line networks and 185 connections in mains connected mobile network routers. Mila does not provide a VDSL service in the municipality. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

2008. Leiðarljós enjoys 100% share in the Kjósarhreppur local loop market and there is open access for bitstream services to the company's network. Both Mila and Sýn have operated in providing such service. One can assume that the competitive position of Sýn bitstream service will be strengthened as Ljósleiðarinn has taken over those operations, now that the Ljósleiðarinn purchase of Sýn systems is completed. Mobile networks also have a significant impact on both retail level and on the underlying bitstream market.

2009. ECOI considers therefore, that effective competition is achieved on market 3b in Kjósarhreppur and that it is not likely that this situation will change during the lifetime of the analysis. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time, will therefore be lifted.

6.3.24 Múlaþing

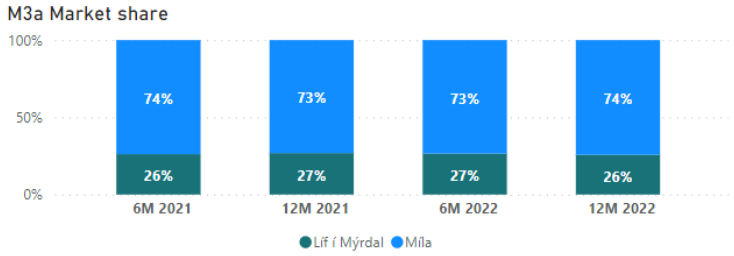


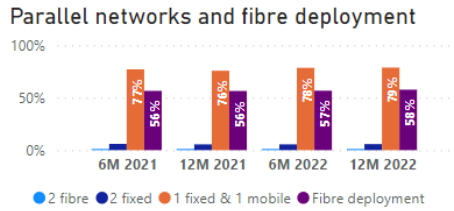
2010. In Múlaþing, the total number of bitstream connections at the end of 2022 was 2,260, of which about 1,950 are in fixed line networks and 310 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 52% and Mila also provides bitstream service on the company's own fibre local loops and on the HEF veitur fibre local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

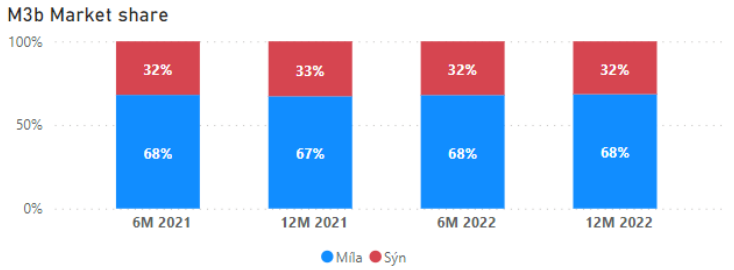
2011. Míla has considerable market power on this market with 91% market share network and 78% if one takes mobile networks into account. Mila has furthermore large market share on an underlying market, market 3a. Despite the fact that there is open access for bitstream providers on the HEF veitur network, is unlikely that a new bitstream provider will start providing service or that Austurljós will achieve such a position that it can exert competitive pressure on Mila in that municipality. Siminn enjoys a dominant market share at retail level which strengthens the Mila position. There is little impact from competition from mobile networks in the municipality. Continued access to Mila bitstream system is therefore necessary for competition at retail level.

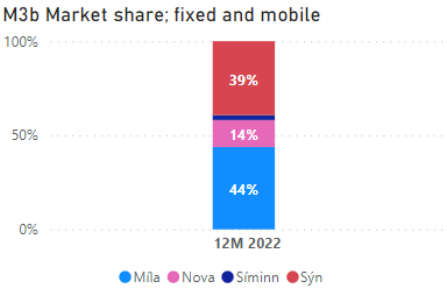
2012. In the light of the above, ECOI maintains the designation of Mila as having significant market power in the municipality.

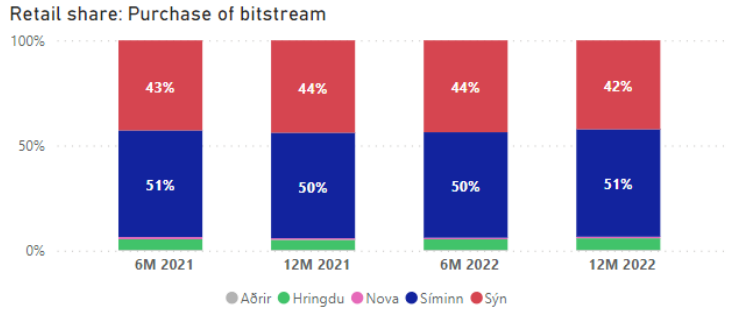
6.3.25 Mýrdalshreppur

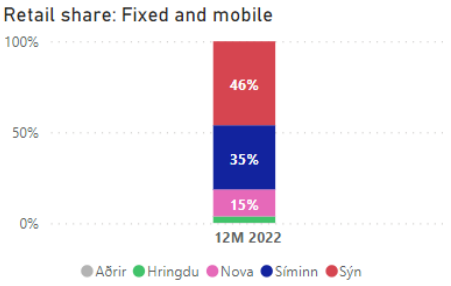










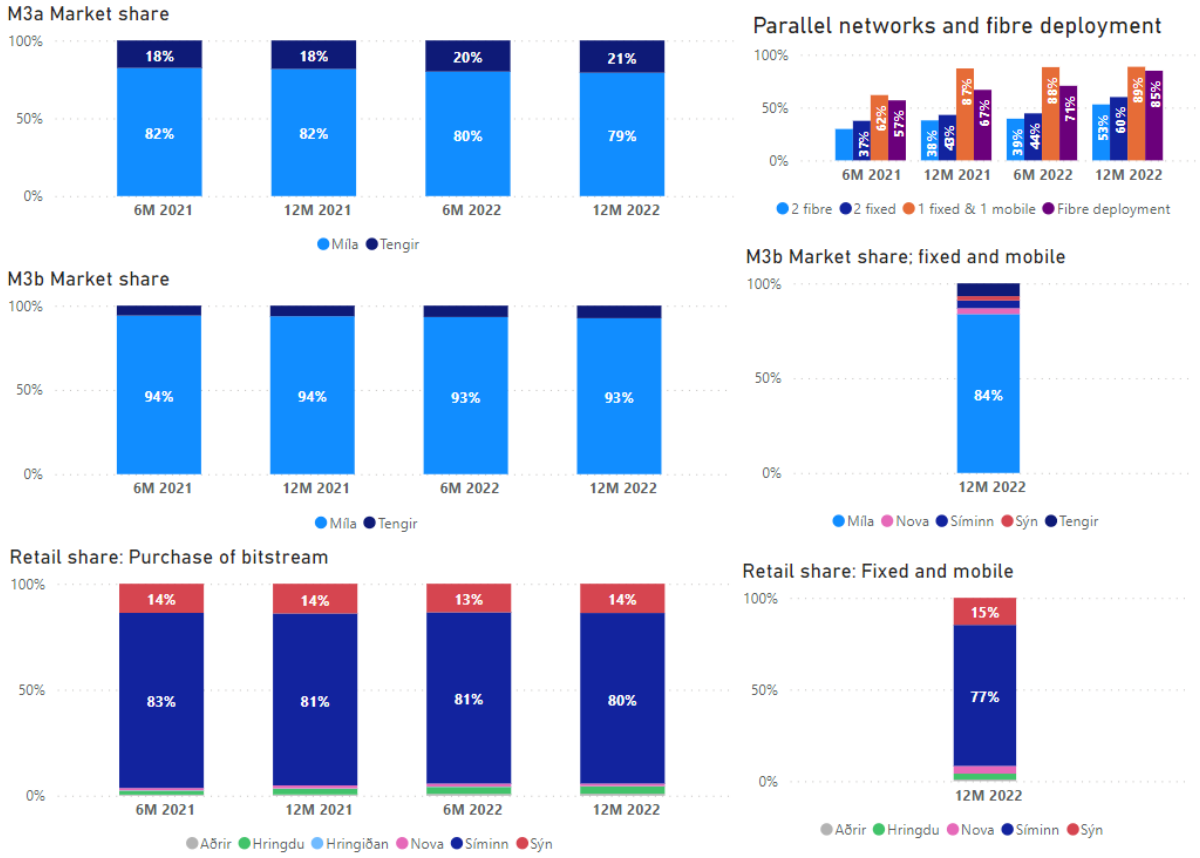


2013. In Mýrdalshreppur, the total number of bitstream connections at the end of 2022 was 425, of which about 270 are in fixed line networks and 155 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 27% and Mila also provides bitstream service on the company's own fibre local loops. Nova, Siminn and Sýn provide mobile network service in the area.

2014. ECOI refers to discussion here above on market 3a in Mýrdalshreppur. Ljósleiðarinn has purchased the Líf í Mýrdal and participates in fibre roll-out with Mila in part of the Vík urban area. Mila has 44% market share on market 3a and Sýn has not been far behind at that location, with 39% market share.

2015. ECOI therefore considers there to be effective competition on market 3b in Mýrdalshreppur and that this situation it is not likely to change during the lifetime of the analysis. The obligations that have rested on Mila in the municipality in question on market 3a up to this point in time, will therefore be lifted.

6.3.26 Norðurþing



2016. In Norðurþing, the total number of bitstream connections at the end of 2022 was 1,450, of which about 1,310 are in fixed line networks and 140 connections in mains connected mobile network routers, and there are 121 summer houses registered in the municipality. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 37% and Mila also provides bitstream service on the company's own fibre local loops and on the Tengir fibre local loops. Tengir provides bitstream service on its own local loops. Nova, Siminn and Sýn provide mobile network service in the area.

2017. Parallel fibre network coverage from Mila and Tengir reaches 53% of residences and workplaces, and in total 85% have access to a fibre network. Parallel coverage of two fixed line networks reaches 60% of them. Reference is made to prior discussion on the situation and network development in the municipality.

2018. Tengir has not achieved progress in its bitstream service, and it is unlikely that this will change during the lifetime of the analysis, despite the fact that there is 60% parallel coverage by two fixed line networks and 53% parallel coverage of fibre networks. There is little impact from competition from mobile networks in the municipality.

2019. Mila thus enjoys countervailing buying power vis-à-vis Tengir. One also has to assess the Mila financial power compared with Tengir, and the companies' economies of scope and scale. As Siminn has not shown interest in using Tengir bitstream for its retail, Tengir opportunities for growth are limited to the success of others in retail competition with Siminn. Tengir access points are in Akureyri, and retailers therefore need to have control of a

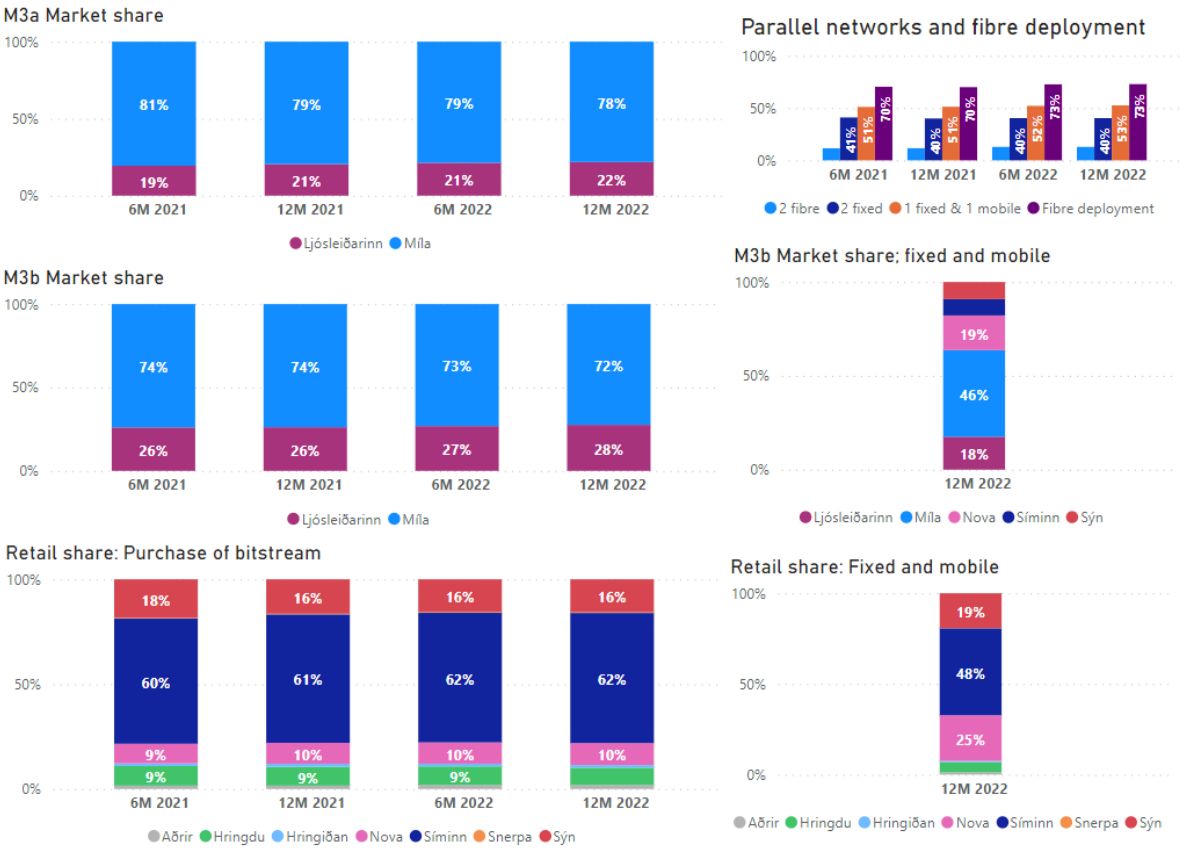
connection to that location from which to provide their service. Although parties other than Mila can provide connections to Akureyri, it is not possible to consider them to be an adequate option for activating retail competition in the municipality.

2020. Míla has considerable market power on this market with 93% market share network and 84% if one takes mobile networks into account.

2021. Siminn market share is also extremely high in Norðurþing, but ECOI considers that the ownership connections between Mila and Siminn exhibit the characteristics of vertical integration, at least in part, which strengthens the Mila position in the municipality. Continued access to Mila bitstream system is therefore necessary for competition at retail level.

2022. With the above in mind, ECOI considers the situation on market 3b in Norðurþing to be such that Mila enjoys significant market power and that there is a need to apply appropriate obligations on the company in the municipality.

6.3.27 Rangárþing eystra



2023. In the third ECOI consultation, the authority changed its position regarding Mila significant market power in Rangárþing eystra. The reason for this change was information that came from parties to the market in the first consultation that called for an increase in gathering data which led to correction of data.

2024. In Rangárþing eystra the total number of bitstream connections was about 1070 in mid-2023, of which 710 when fixed line networks and 360 connections in mains electricity

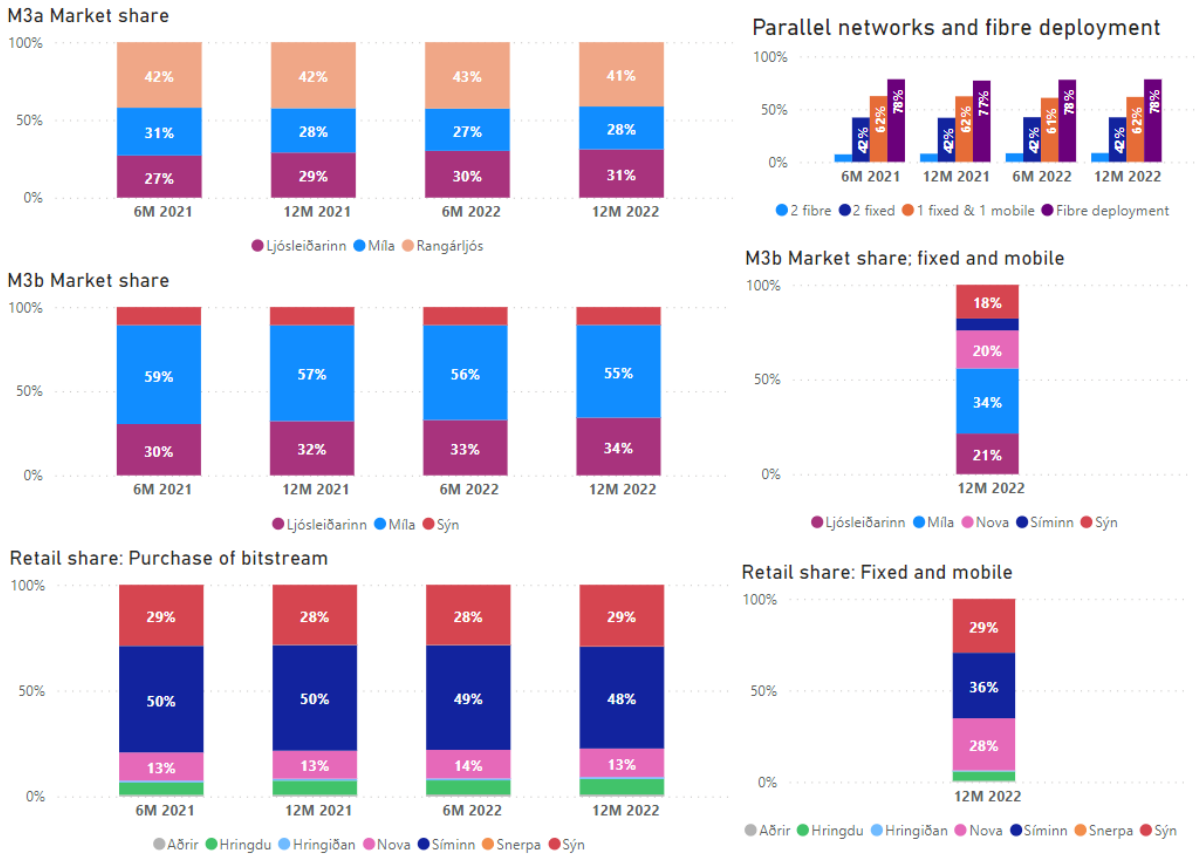
connected mobile routers, and there are 396 summer houses registered in the municipality. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 11% and Mila also provides bitstream service on the company's own fibre local loops. Ljósleiðarinn provides bitstream service on its own local loops. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

2025. Míla has a strong position on market 3a in the municipality and Ljósleiðarinn fibre network is limited to the urban area in Hvolsvöllur. Reference is made to a prior section with on Rangárþing eystra on market 3a for further information on the situation and on network development.

2026. Mila market share on market 3b was 44% in mid-2023 having taken into account mobile networks, and 66% when one only took account of fixed line networks. Mila market share has been on something of a decline in recent times, though this development is not rapid. Mila has provided local loop access to its local loop network in the countryside, where the development of this network had enjoyed a grant in the Iceland Digital Connected initiative, and the municipality also provided money to fund the project, as did inhabitants with a start-up contribution. ECOI considers that open access to the Mila fibre network in the countryside is very important and that it supports increased competition on market 3b.

2027. Having taken the above into mind and the impact of mobile networks in competition in the municipality, ECOI assesses that competition is now effective on market 3b in Rangárþing eystra, or that it will become so during the lifetime of the analysis. The obligations that have been imposed on Mila in the municipality on market 3b in the municipality will therefore be lifted. This change does not impact on the ECOI conclusion on market 3a in the municipality, but it does confirm the importance of Mila continuing to provide open wholesale access to local loops in the municipality, particularly the P2P access provided in the countryside where one cannot expect parallel network coverage to be developed, at least not in the near future.

6.3.28 Rangárþing ytra



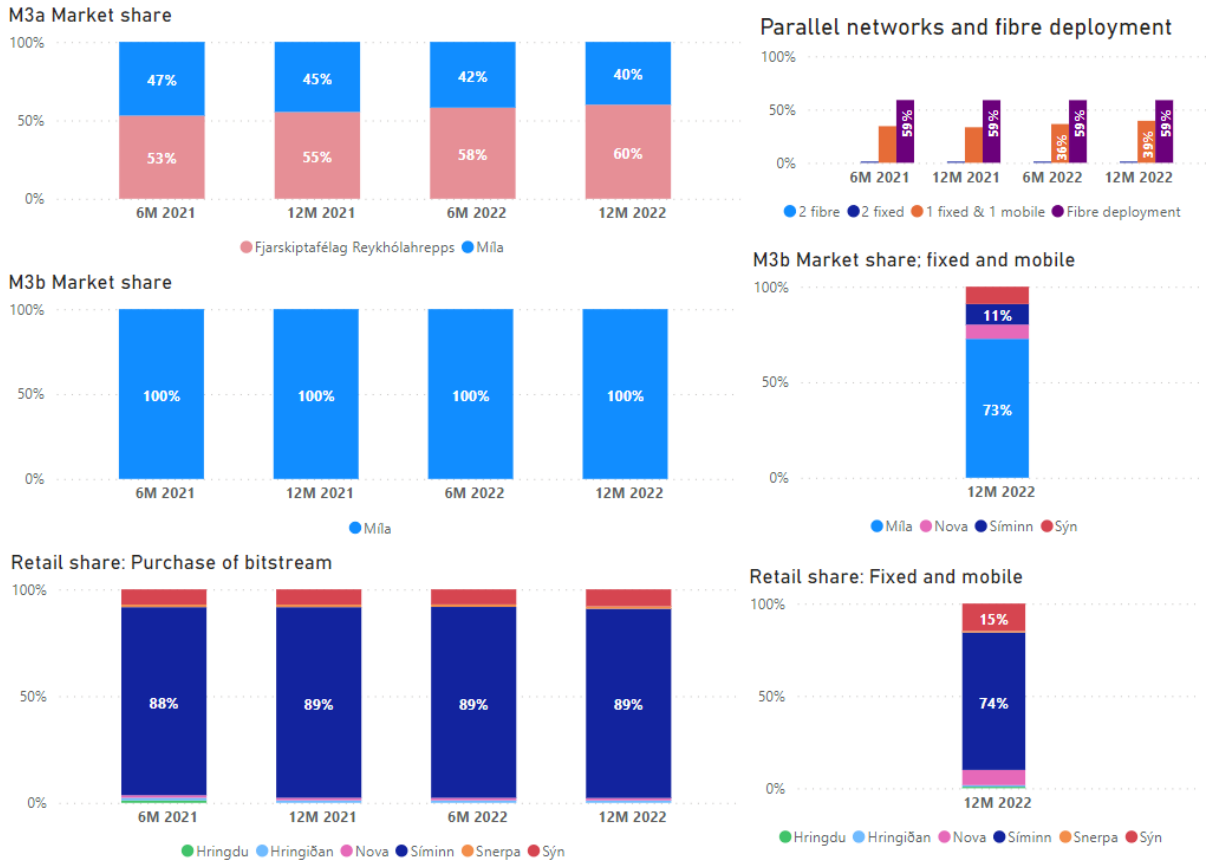
2028. In Rangárþing ytra, the total number of bitstream connections at the end of 2022 was 1,070, of which about 670 are in fixed line networks and 400 connections in mains connected mobile network routers, and in addition to residences and companies, there are 616 summer houses registered in the municipality.

2029. Rangárljós was developed as an open network with state support and Sýn has operated bitstream equipment there. There is parallel network coverage by Ljósleiðarinn and Mila at Hella, and Mila is strengthening its fibre deployment such that it is likely that the Mila network will have wider distribution than that of Ljósleiðarinn. Reference is made to prior discussion on the situation and network development in Rangárþing ytra.

2030. Ljósleiðarinn has made an agreement on purchase of various Sýn systems, including bitstream service, which will strengthen the position of Ljósleiðarinn bitstream service. With this, the competitive level of the Rangárljós is raised, as more retailers will receive access to the Rangárljós network. There is a significant impact from mobile networks in the municipality, which affects shares at retail level.

2031. Having taken into account competition in bitstream service on fixed line networks and the impact of mobile networks on competition in the municipality, ECOI deems competition to be effective on market 3b in Rangárþing ytra and that it is likely to continue to be so during the lifetime of the analysis. The obligations that have been imposed on Mila in the municipality on market 3b in the municipality will therefore be lifted.

6.3.29 Reykhólahreppur



2032. In Reykhólahreppur there were 90 bitstream connections over fixed line networks at the end of 2022, or provided by Mila which is the only bitstream service operator on fast line networks in the municipality, which is not likely to change during the lifetime of the analysis.

2033. The Reykhólahreppur fibre network reached 63% of residences and 58% residences and workplaces jointly at the end of 2022 and the company has plans for further deployment during 2023 and 2024. Reference is made to prior sections with respect to further discussion on deployment of networks in Reykhólahreppur. The impact of mobile networks can be discerned to some degree, but not to the extent that the Mila market share will decline to such an extent that the company's position is not extremely strong.

2034. Míla has considerable market power on this market with 100% market share network and 73% if one takes mobile networks into account. Mila market share is extremely high in Reykhólahreppur and ECOI considers that one can discern the characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens Mila's position in the municipality.

2035. It is unlikely that there will be competition in bitstream service are the municipality during the lifetime of the analysis and mobile network service is likely to alter this picture. Continued access to Mila bitstream system is therefore necessary for competition at retail level.

2036. Having taken the above into account, ECOI deems the situation on market 3b in Reykhólahreppur to be such that Mila enjoys significant market power and that there is a need to impose appropriate obligations on Mila in that municipality.

6.3.30 Seltjarnarnesbær



2037. In Seltjarnarnes, the total number of bitstream connections at the end of 2022 was 1,780, but had dropped to 1770 in mid-2023, including 1700 on fixed line network and 70 connections in mains connected mobile routers, and there are no summerhouses in the municipality. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 14% and Mila also provides bitstream service on the company's own fibre local loops. Ljósleiðarinn also provides bitstream service on its own local loops.

2038. Seltjarnarnesbær is part of the Capital City Area, but a relatively small part. The Capital City Area built-up area (apart from Kjósarhreppur) is continuous, so one can say that the Seltjarnarnes built-up area is like a district in the Capital City Area.

2039. There is very substantial deployment of fibre and copper local loops in the area, about 96% deployment of two fixed line networks, and also some and growing deployment of parallel fibre. Ljósleiðarinn fibre in this area reached 100% of residences and workplaces at the end of 2022. According to data from Mila[379], the company's fibre deployment was 36% at the end of 2022 and on the basis of the categories labelled "Already on offer" and "Confirmed

[379] https://www.mila.is/framkvaemdir/aaetlanir-ljosleidara-og-ljosnets and Mila distribution plan.

on offer" in Mila data, (from the Mila web page in late November 2023), then the Mila deployment had reached 43% and there is also a plan for an additional 79 apartments during this year, which means about 48% deployment at the end of 2023. Given that Mila plans to add [...]. According to information provided in the Mila plan for decommissioning the copper system, one can expect that Mila will be well on its way to completing fibre roll-out in the municipality during the lifetime of the analysis.

2040. In mid-2023, 15% of connected local loops in the municipality were copper local loops, whereas they were 20% at the end of 2022. ECOI expects continued reduction of copper local loops, and during the last six months, copper local loops declined at an unusually fast rate compared with prior periods, and the reduction was proportionately more than bitstream connections, which declined by about 14% for the first six months of 2023. If one allows for 20% annual reduction of bitstream connections, which is quite a pessimistic projection on the basis of previous years, and that the uptake of Mila fibre remains unchanged, one cannot expect the Mila position to worsen in the coming years, so ECOI considers that this development of declining Mila share will not continue. In the light of the strong Siminn position on the retail market and of the agreement that the companies have made with each other, one can expect that the take-up of Mila fibre will increase over time and that Mila will achieve a share, which is closer to the Siminn retail share, which is 32% in Seltjarnarnesbær and 37% on fixed line networks in the Capital City Area, and 32% and 35% respectively if one takes into account mobile network connections.

2041. This is however the municipality in the Capital City Area, with the exception of Kjósarhreppur, where Mila is furthest behind Ljósleiðarinn in fibre roll-out, and where Mila plans are slowest, but nevertheless as stated here above, it is likely that Mila will have rolled out fibre in that area to a significant degree during the lifetime of the analysis.

2042. There is not much usage of mobile network routers in this area in comparison with many others, where the share of connections over mobile network routers is however about 4% of bitstream connections in the municipalities.

2043. This municipality is characterised by vigorous and varied retail competition where no retailer enjoys dominance and where the retailer with the highest share has 39% market share (Sýn) and the next (Siminn) with 32% on the third with 19% (Nova) and others with 10% in mid-2023. The competition situation at retail level is therefore good in the area in question by Icelandic standards.

2044. There are two strong operators on the wholesale markets, Mila and Ljósleiðarinn. On the relevant wholesale market there is some difference in these operators' market shares, i.e. 75% for Ljósleiðarinn against 25% for Mila in mid-2023. Parallel network coverage by two fixed line fibre networks is also substantial and is on the increase at about 36% at the end of 2022. Coverage by two fixed line networks was also very substantial, i.e. 96% or 100% if one considers distribution of one fixed line network and one mobile network. As shown in the figure here above Ljósleiðarinn market share had been increasing slightly at the cost of Mila in recent times. As is stated in section 5.5.2.5, there are however various indications that the Mila position could strengthen rather than weaken in this area during the lifetime of the analysis. Reference is made to that discussion.

2045. In paragraph 4 of Article 18 of the regulation on market analysis in the field of electronic communications it states that significantly high market share of one company over a significant period of time, or greater than 50%, is considered to be a strong indication of significant market power, except in exceptional circumstances. Market share could on the other hand only act as a strong indication of the above if competitors cannot increase their supply sufficiently to meet changes in demand that can result from a price rise by the company that has such a high share. The higher the share and the longer it lasts, the more likely it is that this gives an indication of significant market power. According to paragraph 5, it is important to keep in mind that under certain circumstances, a company with a high market share cannot operate to a significant degree without concern for customers with a strong bargaining position, for example if the countervailing buying power is substantial. It is clear that retailers such as Nova, Hringdu and to some extent Sýn have the option of moving to the Mila network if Ljósleiðarinn tries to abuse its strength in the area in question. In addition to this, parties like Siminn, Sýn and Nova could place more emphasis on the mobile network solution in question under such circumstances.

2046. In paragraph 7 of the above specified provision, it states that if market share is high, but under 50%, ECOI shall rely on other important market factors to assess significant market power. A detailed assessment of economic characteristics of the relevant market shall be conducted before an opinion is reached on the existence of significant market power. ECOI considers this also to apply if market share is over 50%, particularly in duopolies or oligopolies, as the 50% boundary does not axiomatically lead to a case of significant market power. It is for example clear that in duopolies, both companies can never be under 50%. It is quite another matter than where one company has around 50% and, for example, many other companies have low market shares. This means that market share is only one of many criteria to take into account when assessing market power.

2047. In the case of a duopoly, it is not axiomatic that the above specified difference in market share leads automatically to the company with the higher market share being deemed to have a dominant position. The EU Commission, for example, raised objections to the DBA plans for such in a Danish case as specified here above. This was the municipality Ikast, where Energi Ikast Fibernet had 67% market share and is a wholesale-only company. Subsequent to serious objections from the Commission, DBA withdrew these plans and deemed that effective competition prevailed in this municipality.

2048. Mila's financial strength is significant, and the company has every capability to provide Ljósleiðarinn with hard competition in the area. As stated above, it is likely that Mila share will increase during the lifetime of the analysis, particularly as it progresses, as the company's fibre deployment unfolds. In addition to this, Mila is making strong efforts to gain Nova as a customer on its fixed line networks and ECOI considers it likely that this will happen during the lifetime of the analysis, although it is difficult to predict the extent to which this will happen. It would not need a large number of Nova customers that have been on the Ljósleiðarinn fibre network to switch to Mila network for the difference that exists today in market shares to decrease significantly. Sýn also has the opportunity to migrate to an increasing degree from the Ljósleiðarinn network to the Mila network, though to a lesser degree than with Nova. When Mila is released from obligations in these municipalities, subject to this market analysis, it is not outside the realms this possibility that the company could become increasingly active in the competition. At those addresses where Mila and

Ljósleiðarinn fibre are on offer, it is likely that Siminn will encourage its customers to use Mila fibre because of provisions in the service agreement between Mila and Siminn. It is more likely that this will happen increasingly during the lifetime of the analysis and that the Siminn latitude to purchase from parties other than Mila will decrease.

2049. As discussed in section 6.1.3.8 (Summary and conclusions on the main long-term access agreements) and in 6.1.5.9 (Vertical integration), Mila has a long-term agreement with Siminn, the largest reseller on a related retail market in this area. As stated there, there are still characteristics of vertical integration between Mila and Siminn, at least in part, and there are extensive commercial connections between the companies, which strengthens Mila's position in the area. Although the Siminn market share is relatively lower in this municipality than in most others, at 32%, it is not out of the question that Mila will in the lifetime of the analysis, gain a larger share of Nova and Sýn customers in the municipality, which would then lessen the difference that now exists between shares of Ljósleiðarinn and Mila.

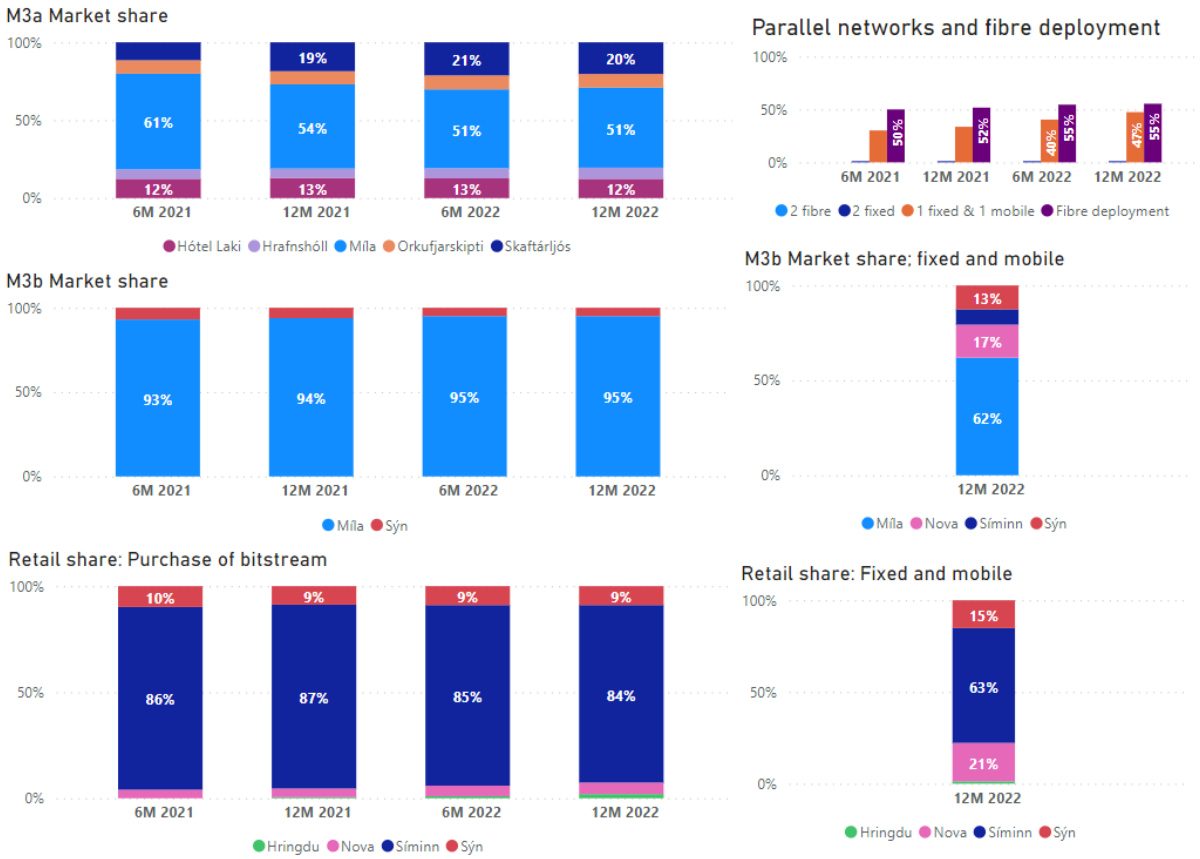
2050. In addition to this, countervailing buying power vis-à-vis Mila is limited in the area, but is significant vis-à-vis Ljósleiðarinn by Sýn, Nova and Hringdu. It is also likely that the increase in the number of Siminn customers on the Ljósleiðarinn network which has been the case during the last 2 years will diminish somewhat during the lifetime of the analysis, Mila fibre deployment progresses and Siminn latitude to purchase from parties other than Mila will diminish. The development in market share on the relevant wholesale market that has taken place in recent times in this area may therefore be quickly reversed, and in a significant manner. Mila opportunities for advancement appear to be greater than those of Ljósleiðarinn in this area on the relevant market.

2051. Given the above, and particularly the good position on the related retail market in this area and the high parallel coverage of fixed line networks, ECOI considers there to be no reason, neither on the basis of the current situation or from a forward-looking perspective, to designate Ljósleiðarinn as having significant market power on the relevant geographic market, despite the above specified Ljósleiðarinn increase in market share during the first half of 2023. There are explanations for this that have been presented here above, and ECOI considers that there will be a significant deceleration of the increase in the next months and near future, and that in the latter part of the lifetime it is likely that it will be reversed, even to a significant degree. The trend at that location is for example for much greater parallel fibre roll-out than in most of the areas where Mila has significant market power in the countryside. There is nothing to indicate that Ljósleiðarinn can behave in this situation without taking into consideration competitors, customers, and consumers. Attempts to do so could have consequences and the whole Capital City Area, if parties such as Nova, Sýn and Hringdu were to switch to an increasing degree to Mila. Given Mila's financial strength, that company could also decide to speed up fibre roll-out in the municipality than current plans allow for. Mila could doubtless complete its fibre roll-out in the municipality within a year, should the company decide to do so.

2052. ECOI therefore considers that effective competition does prevail on market 3b in Seltjarnarnesbær and will prevail throughout the planned lifetime of the analysis, despite the above specified increase in Ljósleiðarinn market share during the first half of 2023. There are explanations for this, that have been presented here above, and ECOI considers that there will be a significant deceleration of the increase in the next months and near future, and that

in the latter part of the lifetime it is likely that it will be reversed to some degree, even to a significant degree. The trend at that location is among other things for much greater parallel fibre roll-out than in most of the areas where Mila has significant market power in the countryside. The obligations that have rested on Mila will therefore be lifted in this area.

6.3.31 Skaftárhreppur



2053. In Skaftárhreppur there were 310 bitstream connections in service at the end of 2022, including 202 on fixed line networks and 108 in mobile networks. For deployment and development of networks, reference is made to the discussion on the municipality in the section here above for market 3a, where Mila was assessed as having significant market power on that market in the municipality.

2054. Míla has considerable market power on this market where Mila has 95% market share in fixed line networks and 62% if one takes mobile networks into account. Mila market share is extremely high in the municipality and ECOI considers that one can discern the characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens Mila's position in the municipality.

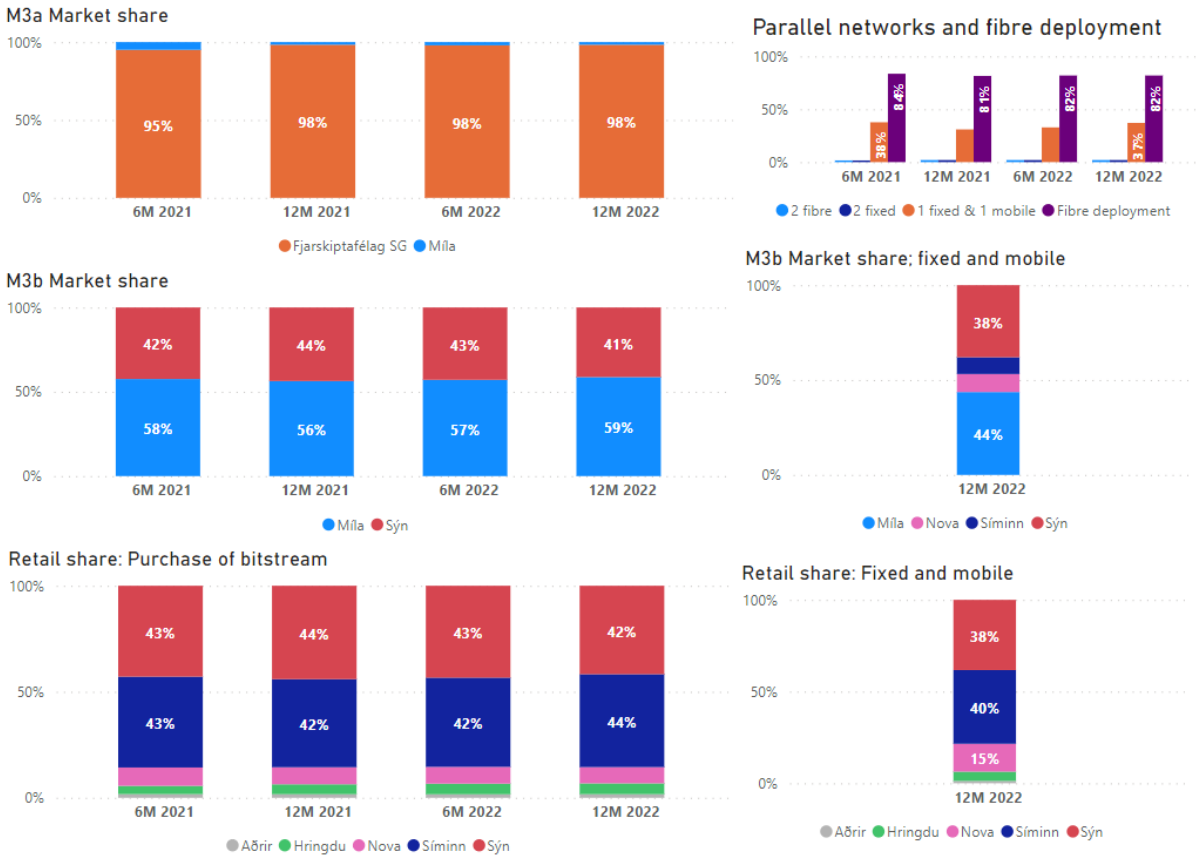
2055. There is almost no parallel fixed line network coverage in that location and Mila enjoys countervailing buying power vis-à-vis the small Hrafnshóll and Skaftárljós networks as the largest operator of bitstream service in the municipality. Mila has also purchased a network known as Hótel Laki[380] and Sýn has operated bitstream service, network. Ljósleiðarinn entry

[380] That network was then owned by Digraklettur ehf.

as a bitstream provider at that location, by taking over Sýn bitstream system, is unlikely to have a significant impact and create such competitive pressure on the Mila position that it will no longer be significantly strong for the coming years. The impact from mobile networks is unlikely to change this Mila position discernibly within the lifetime of the analysis.

2056. Having taken the above into account, ECOI deems the situation on market 3b in Skaftárhreppur to be such that Mila enjoys significant market power and that there is a need to impose appropriate obligations on Mila in that municipality.

6.3.32 Skeiða- og Gnúpverjahreppur



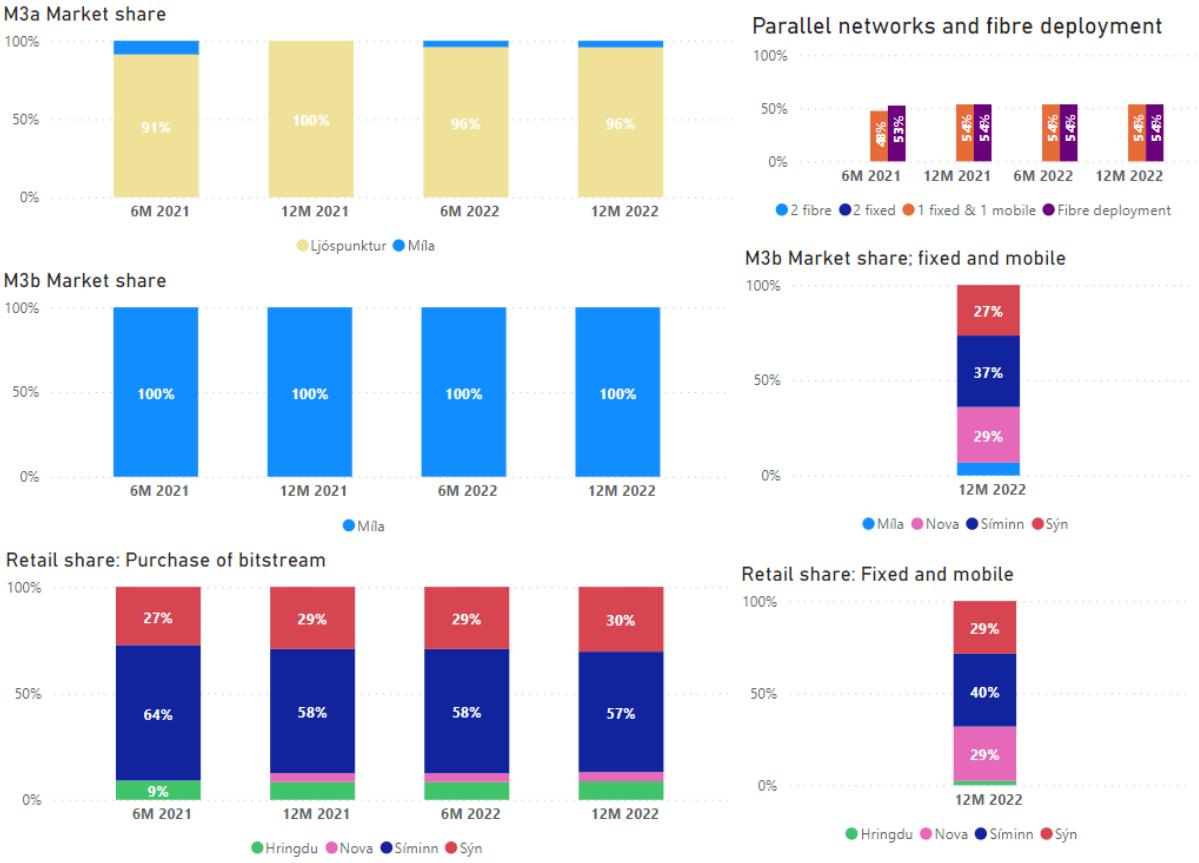
2057. In Skeiða- og Gnúpverjahreppur there were 316 bitstream connections in service at the end of 2022, including 325 on fixed line networks and 81 in mobile networks. In that municipality, Fjarskiptafélag Skeiða- og Gnúpverjahreppur has 98% market share on market 3a, an open network, built with public support.

2058. At the end of 2022, both Mila and Sýn operated a bitstream system with more or less equal shares, Mila having however slightly more, which had been on the increase in recent months. There is some impact from mobile networks, where Mila has 44% share against a 38% Sýn share, having taken mobile networks into account at that point in time.

2059. Ljósleiðarinn has made an agreement on the purchase of access networks and has taken over Sýn bitstream service. It is then expected that competition will be strengthened at retail level when more retailers have access to bitstream networks over which to provide the service.

2060. When examining the status and development of bitstream market in the municipality in a forward-looking manner, ECOI assesses that effective competition prevails on market 3b in Skeiða- og Gnúpverjahreppur and that this is likely to be the case throughout the lifetime of the analysis. The obligations that have rested on Mila in the municipality in question on market 3b up to this point in time will also be lifted.

6.3.33 Skorradalshreppur



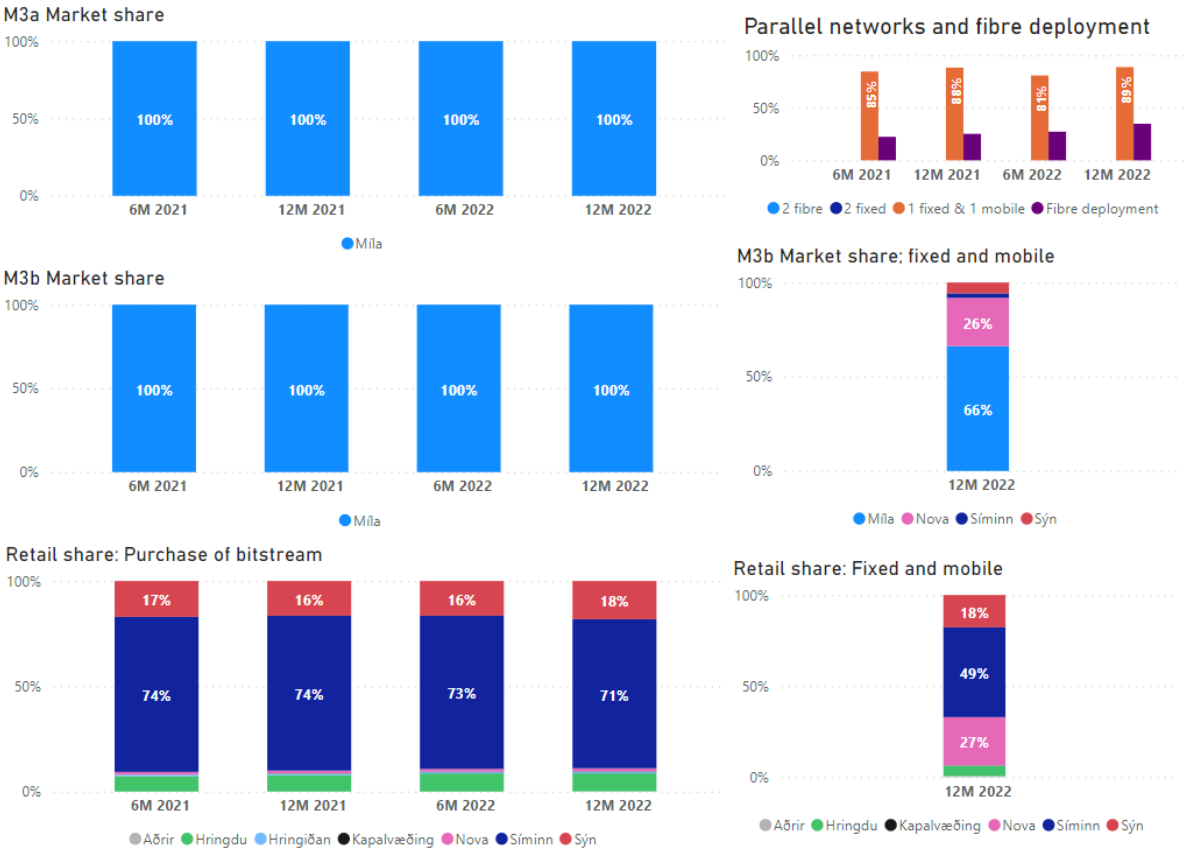
2061. In Skorradalshreppur there are 332 bitstream connections at the end of 2022, including 24 actives on local loops, almost all on the Ljóspunktur network, which was developed with public support. Access to the network is therefore governed by rules on state support and is an open network where Mila provides bitstream service. There is however a large number of summerhouses in the municipality and retail shares indicate this when service over mobile networks is included, as bitstream connections on mains connected mobile routers were 316 in total at the end of 2022.

2062. In retail over fixed line networks, Siminn has a significant share, at 57%, while Sýn is in second position with 30%. Although Mila enjoys 100% share in bitstream over fixed line networks, the company's share is fourth smallest when the Siminn, Nova and Sýn mobile networks are included as these companies' retail, and self-supply in this field is included in the relevant wholesale market.

2063. When one takes into account the wholesale shares on market 3b, having taken mobile network service into consideration, ECOI considers that there is effective competition in Skorradalshreppur on the relevant market and that this will be the case throughout the

lifetime of the analysis. The obligations that have rested on Mila in the municipality will therefore be lifted.

6.3.34 Suðurnesjabær



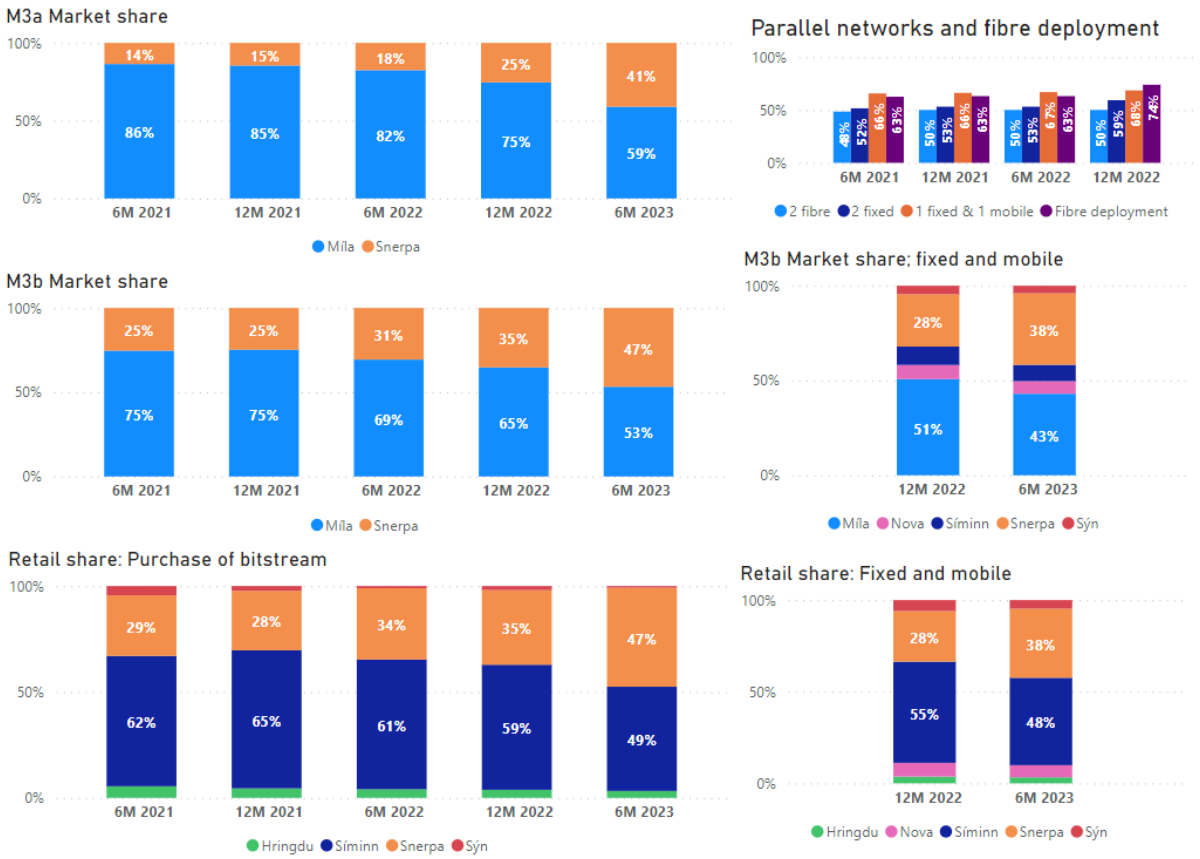
2064. Active bitstream connections at the end of 2022 were 1,583, of which 1,048 were on fixed lines, all on Mila networks, with nearly two thirds over the company's VDSL systems. Mobile network connections over mains connected mobile network routers were 535. Míla has deployed fibre to 37% of legal residences and to 35% of total homes and workplaces. Service over copper network is therefore in the majority on fixed line connections in the municipality. Siminn has a much smaller market share, 71% of service provided over fixed line networks and 49% when one takes into account mobile network connections, which have some impact in the municipality.

2065. In the opinion of ECOI, is not foreseeable that another party will build a new fibre or bitstream system. There in competition with the Mila networks within the immediate future, and if this were the case one must assume that there is little likelihood of such a network achieving such success that the Mila share would be impaired in a significant manner. One can also mention the high Siminn share in retail on a related market that strengthens Mila's position, and ECOI considers that one can discern the characteristics of vertical integration between the companies, at least in part.

2066. There is not significant competitive pressure from mobile networks on the Mila bitstream system, and Mila had 66% share in bitstream service at the end of 2022, having taken mobile networks into account.

2067. In the light of the above, ECOI considers it necessary to designate Mila as a company with significant market power on market 3b in Suðurnesjabær. ECOI therefore considers it necessary to impose appropriate obligations on Mila in this municipality.

6.3.35 Súðavíkurhreppur



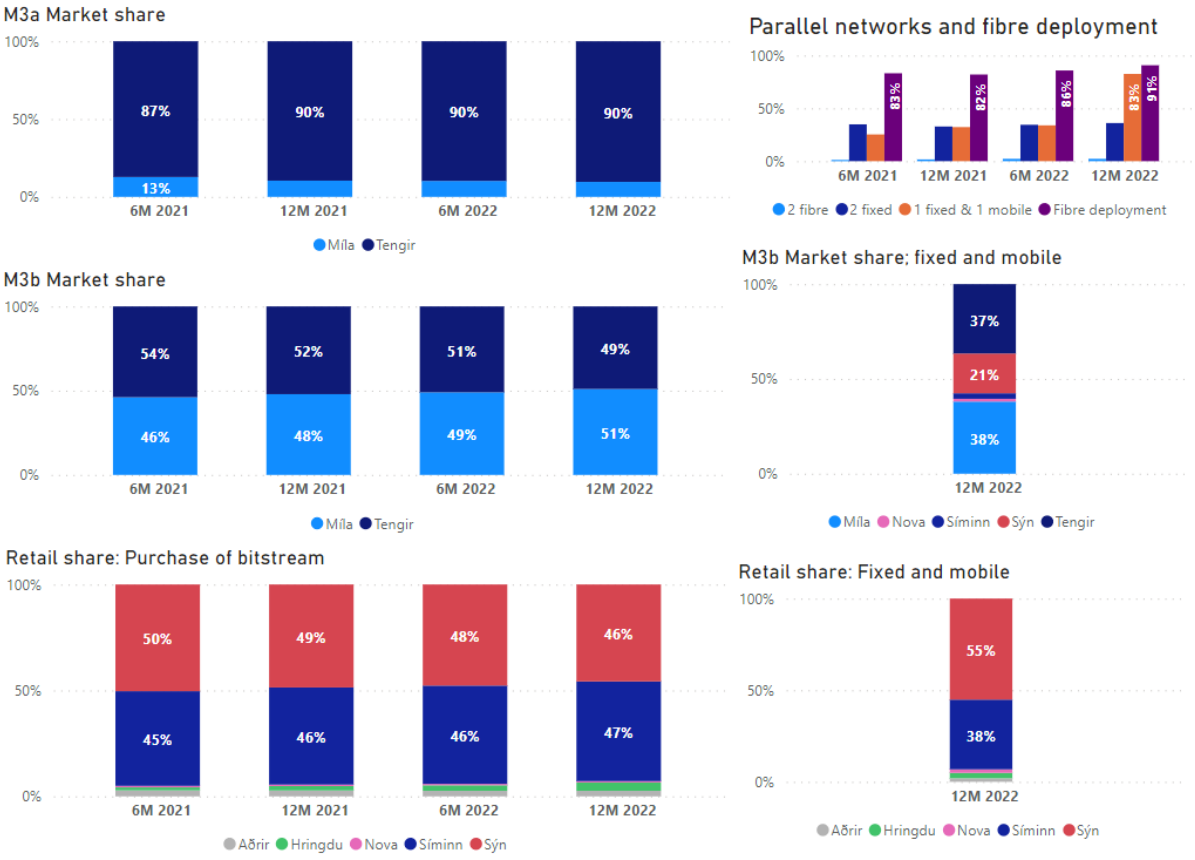
2068. In Súðavíkurhreppur there were 134 bitstream connections at the end of 2022, including 105 on fixed line networks and 29 in mains connected mobile network routers. Bitstream connections on fixed line network increased to 122 in mid-2023, and the large majority of the increase in bitstream is on the Snerpa local loops. Both Mila and Snerpa control fibre networks in the municipality, and a rapidly decreasing proportion of bitstream is provided with VDSL systems on copper lines. Parallel coverage of two fibre networks reached 50% of residences and workplaces at the end of 2022, while 59% of them then had access to fixed line network from two parties. In total, fibre deployment reached 75% of residences and workplaces at this point in time. Deployment in mid-2023 is not available.

2069. Snerpa is a vertically integrated company that has its own local loops, bitstream systems based on its own fibre local loops and it also operates its own retail which uses its own infrastructure, but also by access to Mila bitstream. Snerpa provides wholesale access to its bitstream service over fibre. There are a number of mobile network connections in the municipality, which can be seen in the 3b shares where mobile network connections are included. Having taken mobile network connections into account, Mila market share was 51% on the market 3b at the end of 2022 and 43% at the end of 2023, while the Snerpa share grew from 20% to 38%.

2070. Growth in the number receiving bitstream service from Snerpa was more than was expected in the prior consultation. Snerpa operations and balance sheet are however limited in comparison with Mila and for this reason, the company investment capability is not as large. Snerpa is both a competitor and customer of Mila on market 3b and Snerpa competition at retail level and success of the company is based there among other things on access to Mila fibre local loops. Access to Mila bitstream services is still important for retail competition in the municipality, as access to Snerpa bitstream service is only in its operational territory in the West Fjords, while Access Option 3 with Mila provides retailers on the relevant market with access to customers from a connection point in Reykjavik. In the light of changed Snerpa market share on market 3b in Súðavíkurhreppur, ECOI assesses that effective competition now prevails, or is at least tending strongly in that direction, and that it is likely that there will be effective competition in the municipality during the lifetime of the analysis.

2071. The obligations that have rested on Mila in the municipality will therefore be lifted.

6.3.36 Svalbarðsstrandarhreppur

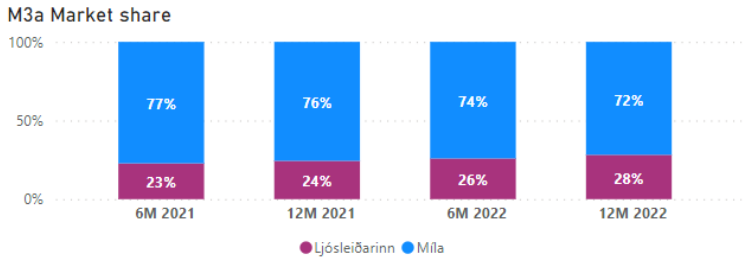


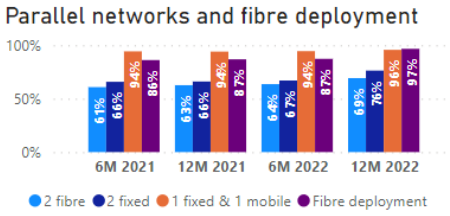
2072. In Svalbarðsstrandarhreppur there are 205 bitstream connections in use, of which 156 are on local loops from fixed line networks and Tengir has 90% share of these, while VDSL is used in a few Mila copper local loops. There are 52 connections on mains connected mobile network routers. Svalbarðseyri is a small urban location while the rural area of the municipality is along the east coast of Eyjafjörður. There are about 100 summerhouses registered in the municipality.

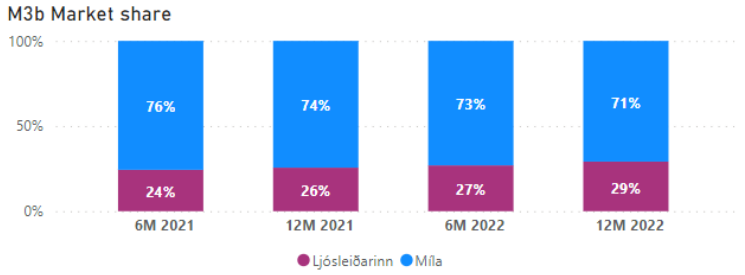
2073. Tengir provides access to its fibre local loops and Mila has developed successful operations and bitstream service, which competes with Tengir bitstream service. The shares of Tengir and Mila are equal on the municipality's fixed line network, and this has been the case for some time. Mobile networks have some impact towards strengthening the Sýn retail share in the municipality, where there are 100 summerhouses.

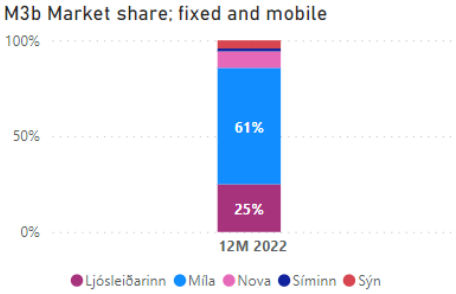
2074. In the light of this, ECOI deems there to be effective competition on market 3b in Svalbarðsstrandarhreppur and that it is likely that this will continue to be the case throughout the lifetime of the analysis. The obligations that have been imposed on Mila in the municipality on market 3b in the municipality will therefore be lifted.

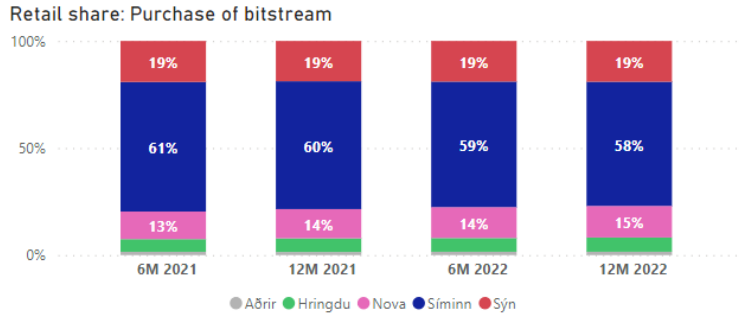
6.3.37 Sveitarfélagið Árborg

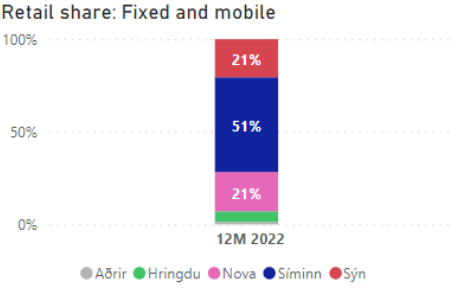












2075. In Árborg municipality there are 4,992 bitstream connections in service at the end of 2022, including 4,480 on local loops on fixed line networks and 416 in mains connected mobile network routers. At Selfoss, both Ljósleiðarinn and Mila have a substantial and equal deployment of fibre local loops. Ljósleiðarinn has deployed to the more sparsely populated rural parts of the community just south of Selfoss, and Mila to the fairly recent urban district, halfway between Selfoss and Eyrarbakki. Both companies have fibre conduits to Eyrarbakki og Stokkseyri, but only Mila has deployed local loops to those towns. Fibre deployment there is however not as common as in Selfoss and 445 connections are active on copper lines in the municipality.

2076. There is deployment of fibre to 97% of residences and companies in the municipality and parallel coverage of two fixed line networks reaches 76% of them. Access for homes and

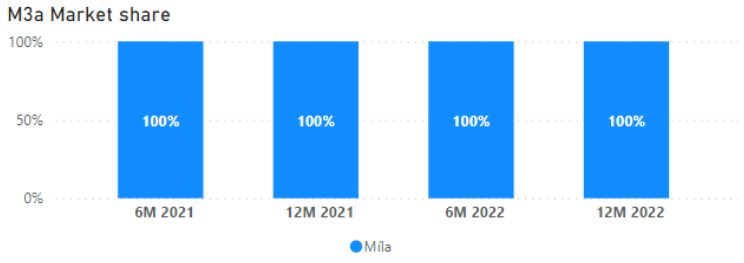
companies to one fixed line network and at least one mobile network with a good signal is available to 96%.

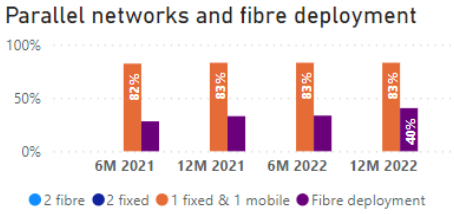
2077. The Mila market share is substantial on the local loop market and has been on the decline, while the Ljósleiðarinn share has been increasing. Mila share on the relevant market was 71% at the end of 2022 and 61% if one takes mobile networks into account. Siminn enjoys significant market share which strengthens the Míla position in the light of the long-term agreement between the companies, which exhibits the characteristics of vertical integration.

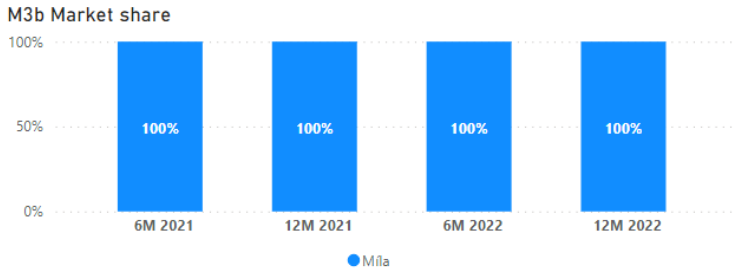
2078. Given the above, and particularly the extensive parallel coverage of fixed line networks, ECOI considers there to be no reason, neither on the basis of the current situation or from a forward-looking perspective, to designate Míla as having significant market power on the relevant geographic market. Competitive pressure from the Ljósleiðarinn network is in place and that company is making gradual progress. It cannot be seen that Mila can operate there without consideration for competitors, customers and consumers, as both the wholesale customers of the company and consumers on the retail market have almost without exception another option, either Ljósleiðarinn or through a mobile network.

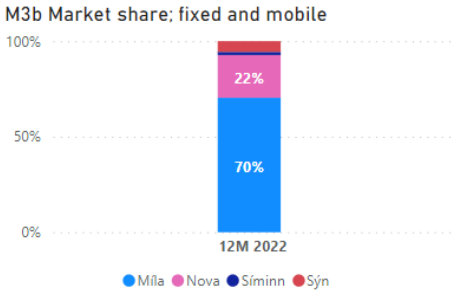
2079. ECOI therefore considers that effective competition does prevail on market 3b in Árborg municipality and that it will prevail throughout the planned lifetime of the analysis. The obligations that have rested on Mila will therefore be lifted in this area.

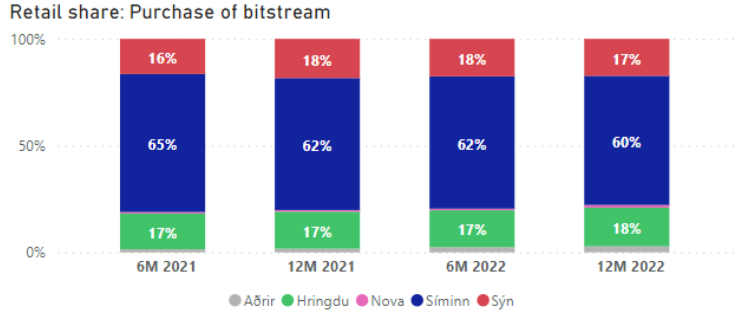
6.3.38 Sveitarfélagið Vogar

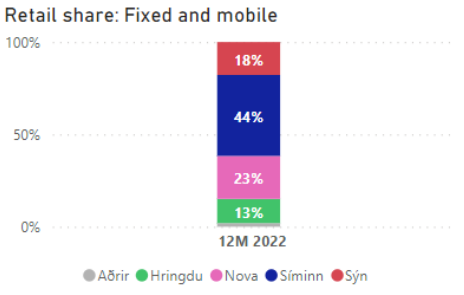












2080. At the end of 2022, there were 550 bitstream connections in Sveitarfélagið Vogar, 387 of them on fixed line networks and 163 on mains connected mobile network routers.

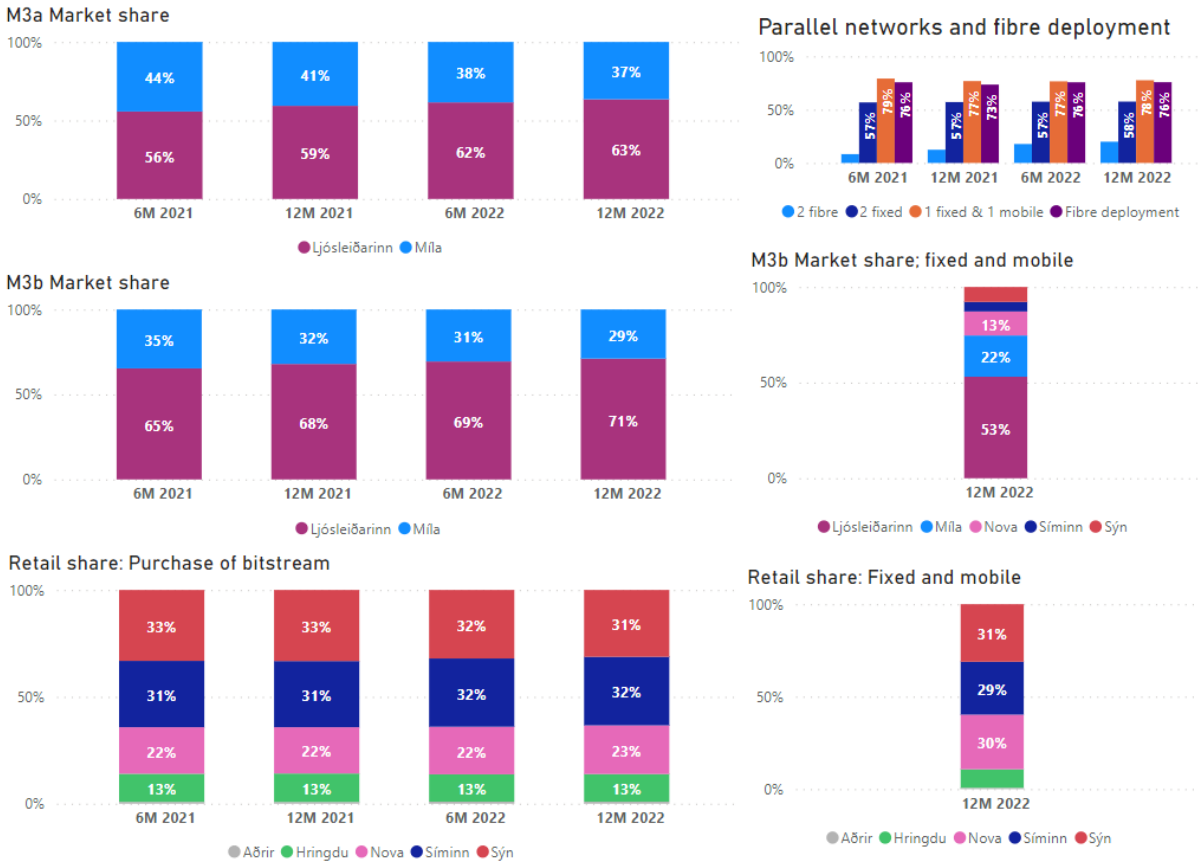
2081. Sveitarfélagið Vogar is characterised by a small urban nucleus where a large majority of the inhabitants live, and a number of buildings along the coast to the north-east of the urban area. Mila has deployed fibre to the town and to towns along the coast. The rural area has access to Mila fibre local loops but only a small part of the urban nucleus.

2082. Míla thus has 100% share of both local loop lease and bitstream service over fixed line networks, but the impact of mobile networks is significant, and Nova has some share in that sector.

2083. Ljósleiðarinn has made an agreement with Mila on joint projects in development to residences. ECOI considers that despite the fact that the joint development will probably be completed in the first part of the period of validity of this analysis, it is unlikely that Ljósleiðarinn will achieve such market share within the period of validity that this will have a significant impact on the Mila position in the municipality, where Mila now has 70% market share when one takes mobile networks into account. It is among other things at that location that one can consider it unlikely that Ljósleiðarinn will reach a significant proportion of the addresses that already have Mila fibre local loops. At the same time there is the high Siminn market share, and ECOI considers that one can discern the characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens Mila's position in the municipality.

2084. ECOI therefore designates Mila as a company with significant market power on market 3b in Sveitarfélagið Vogar, and ECOI therefore considers it necessary to impose appropriate obligations on Mila in the municipality.

6.3.39 Sveitarfélagið Ölfus



2085. In Sveitarfélagið Ölfus there were 1,140 bitstream connections at the end of 2022, of which 851 were on bitstream on fixed line networks, and 289 through mains connected mobile network routers.

2086. Ljósleiðarinn fibre reached 73% of residences and workplaces are 98% of residences at the end of 2022, where the number of active bitstream connections on Ljósleiðarinn fixed line network, has increased significantly in recent years. The Ljósleiðarinn network reaches rural parts of the municipality and ECOI does not expect that another parallel coverage network will be deployed to this area in the near future.

2087. For other discussion on the size and development of connections in Sveitarfélagið Ölfus, reference is made to discussion in the section here above, where it is stated among other things that parallel coverage deployment of two fixed line networks is such that 42% of residences and workplaces of access to one fixed line network, and thus to one bitstream service, which is Ljósleiðarinn service in a large majority of cases. Mila has modest deployment plans for further development of fibre in the municipality.

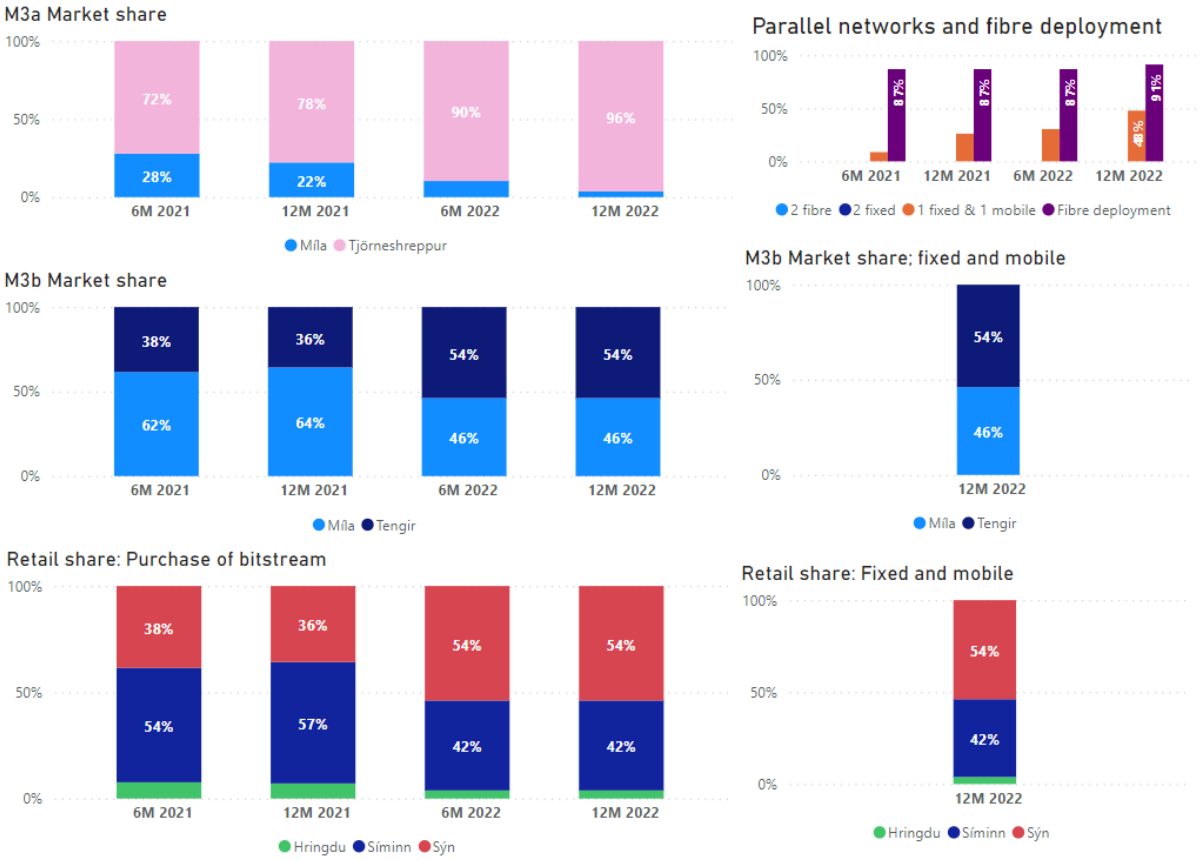
2088. Ljósleiðarinn market share was 71% in fixed line networks at the end of 2022 and 53% if one takes mobile networks into account.

2089. Retail competition is therefore based on access to Ljósleiðarinn bitstream service for a significant proportion of consumers. When one considers the Ljósleiðarinn position in share

of the wholesale bitstream market, it is not likely that the large share of Ljósleiðarinn will be impaired during the lifetime of the analysis.

2090. In the light of the above, ECOI therefore designates Ljósleiðarinn as having significant market power on market 3b in Sveitarfélagið Ölfus and considers it therefore necessary to impose appropriate obligations on Ljósleiðarinn on the relevant market.

6.3.40 Tjörneshreppur



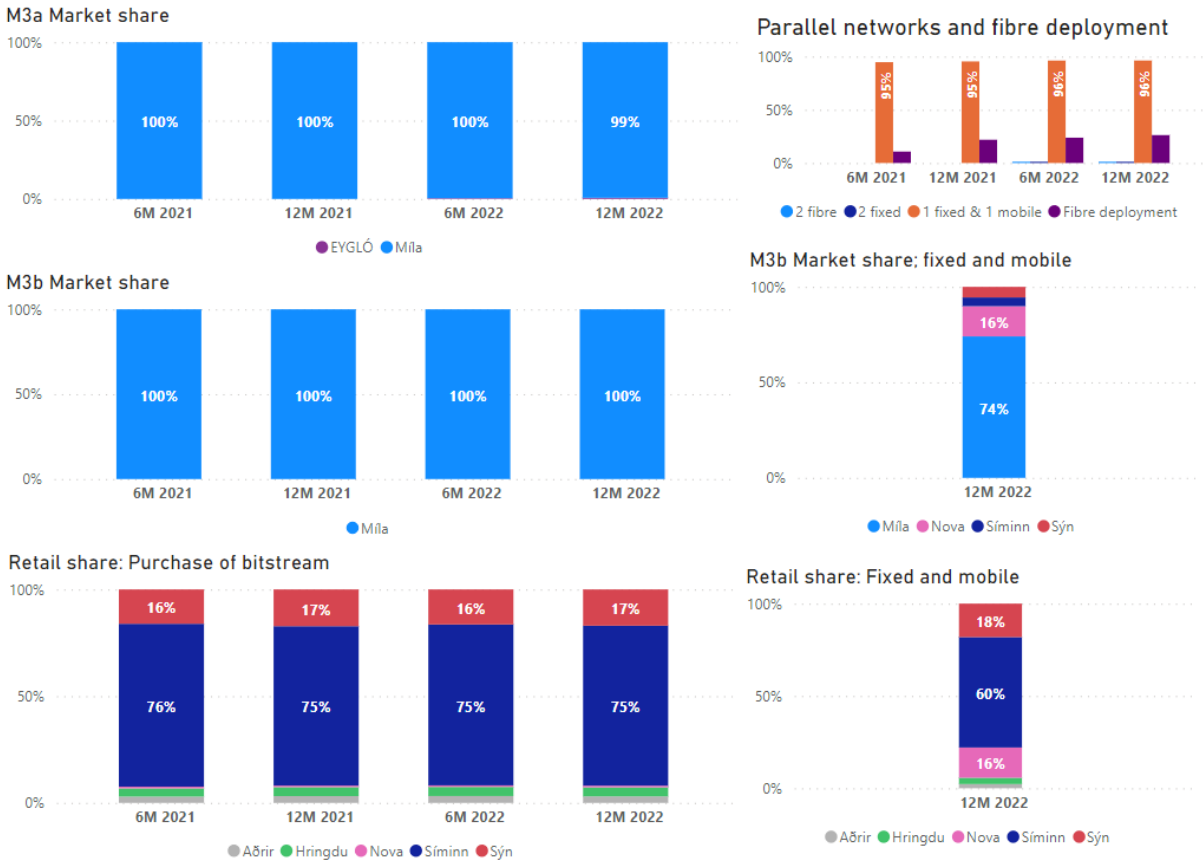
2091. There were 26 bitstream connections in use in Tjörneshreppur at the end of 2022, all on fixed line networks.

2092. In the rural part of the Tjörneshreppur municipality, both Tengir and Mila have bitstream service on the municipality's open network. The impact of mobile networks is not significant in the municipality, where about half of residences and companies in the municipality, about 48%, have access to one fixed line network and at least one mobile network with a good signal. The companies enjoy similar share of the relevant market. This market is very small, 26 connections and carries very little weight at a national level. It must therefore be considered very positive for the competition, that two electronic communications company have decided to provide service in the municipality.

2093. ECOI concludes that there are no grounds to impose obligations on the bitstream companies operating on the market and that effective competition prevails in the municipality on market 3b. ECOI considers there to be no indication that this situation will

change in the near future. The obligations that have been imposed on Mila in Tjörneshreppur will therefore be lifted.

6.3.41 Vestmannaeyjabær



2094. In Westman Islands there were 2,025 bitstream connections in service at the end of 2022, including 1,500 on fixed line networks and 525 through mobile network routers. With regards to the status and development of fixed line networks in the municipality references made to prior discussion in section here above.

2095. In prior discussion on potential development of network deployment in the Western Islands, the conclusion has been reached that there is some uncertainty as to whether the EYGLÓ plans for distribution within Vestmannaeyjabær will be realised, but if one looks to the future, it is likely that EYGLÓ will complete fibre local loop deployment in 2024 or 2025. On the other hand, there is more uncertainty about whether and then what parties will compete with parallel bitstream systems on that network. It does however appear clear that Mila will operate bitstream service on that network, and also the small company Tölvun.

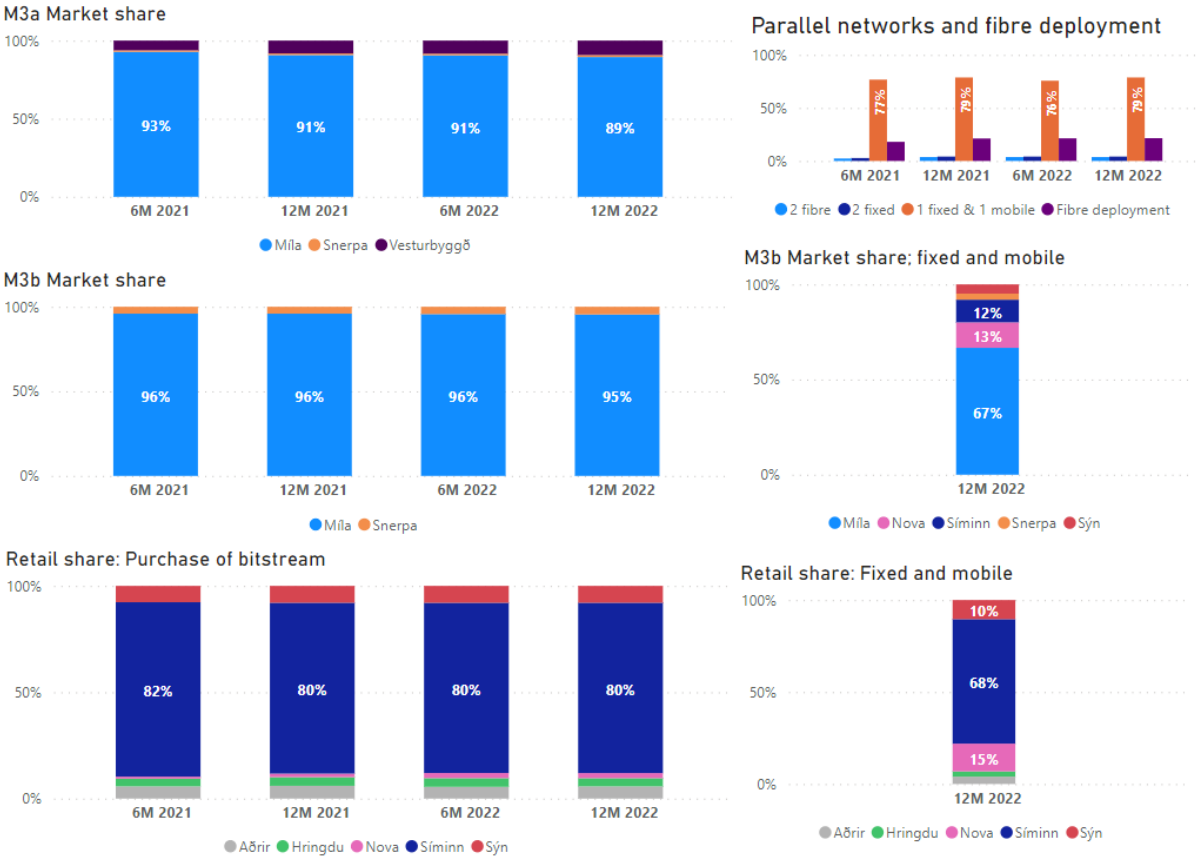
2096. One must consider there to be considerable uncertainty about whether Tölvun will achieve such success that the Mila share in bitstream service over fixed line network in Vestmannaeyjabær will decrease to any significant extent during the life of the analysis.

2097. There is a slight impact from mobile networks, but despite the fact that 5G deployment commenced quite vigorously some time ago, mobile networks have not achieved success there. Míla has 100% share in bitstream service on fixed line networks and will provide its

service on the EYGLÓ fibre network. Having taken mobile networks into consideration, Mila has 74% share of the bitstream service market, which is not foreseen as decreasing during the lifetime of the analysis.

2098. Having taken the above into account ECOI designates Mila as a company with significant market power on market 3b in Vestmannaeyjabær and considers it necessary to impose appropriate obligations on Mila in the municipality.

6.3.42 Vesturbyggð



2099. In Vesturbyggð, the total number of bitstream connections at the end of 2022 was 595, of which about 415 are in fixed line networks and 180 connections in mains connected mobile network routers. Mila offers VDSL service in the area and the proportion of VDSL of the total number of bitstream connections is 50% and Mila also provides bitstream service on the company's own fibre local loops and on the Vesturbyggð fibre local loops. Snerpa also provides bitstream service over Vesturbyggð fibre, but this is a very small number of connections. Hringdu, Nova, Siminn and Sýn provide mobile network service in the area.

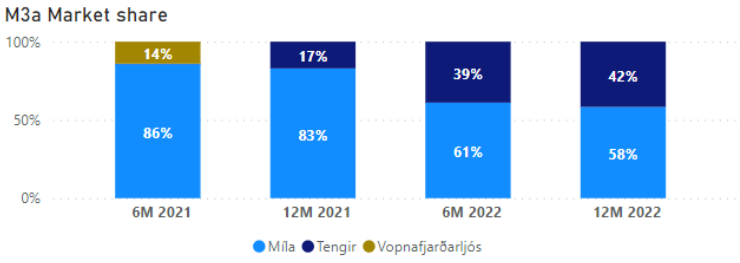
2100. Part of the fibre local loops that are registered as being owned by Vesturbyggð are jointly owned by Vesturbyggð and Míla. Mila has control of most local loops that are jointly owned by Mila and Vesturbyggð, as those local loops are directly connected to the Mila trunk line and it is not possible to connect them in another manner under current circumstances.

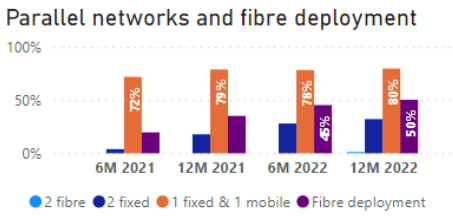
2101. Míla has plans for fibre deployment in the area[381] and according to information on the company's website the plans were immediately in place for the year 2023. ECOI is not aware of other parties that planned deployment in the municipality.

2102. There is some impact from mobile networks in the municipality, where Mila has 67% market share on market 3b, having taken into account connections through mains connected mobile network routers. The high Siminn market share on the retail market also strengthens the Mila position. ECOI does not consider it likely that the Mila position will weaken on this market during the lifetime of this market analysis.

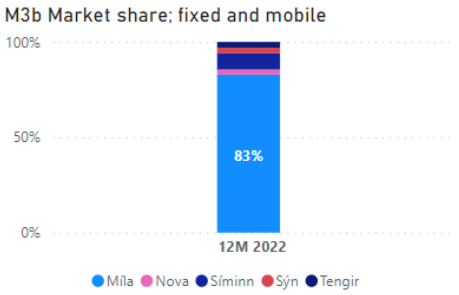
2103. Having taken the above into account, ECOI deems the situation on market 3b in Vesturbyggð to be such that Mila enjoys significant market power and that there is a need to impose appropriate obligations on Mila in that municipality.

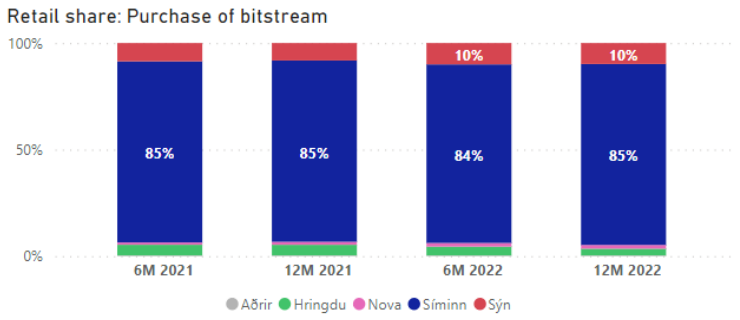
6.3.43 Vopnafjarðarhreppur

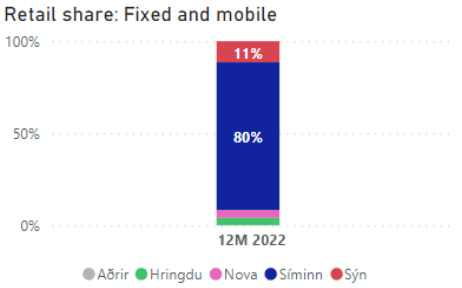












2104. There are about 330 bitstream connections in use in Vopnafjarðarhreppur in the end of 2022, including 285 connections over bitstream on fixed lines and 45 from connections over mains connected network routers. Mila enjoys an overwhelming share, i.e. 96%, on bitstream, or 83% if one takes mobile networks into account.

2105. Míla has a dominant position in bitstream service on the fixed line network in the municipality. Mila bitstream service is based almost equally on VDSL connections on the

[381] [...].

company's copper network and on Tengir fibre local loops. Mila thus enjoys countervailing buying power vis-à-vis Tengir.

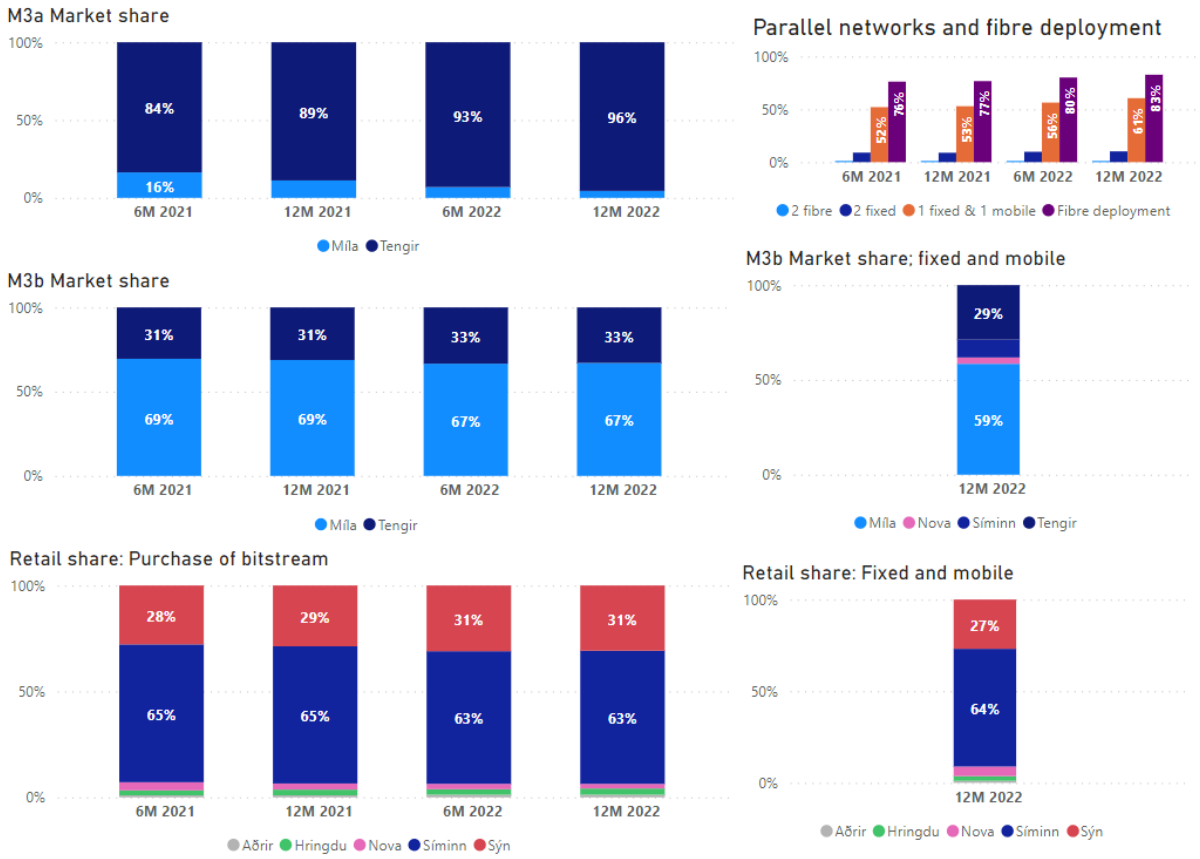
2106. Tengir bitstream service in Vopnafjörður is an island in the Tengir network, as Tengir does not have a trunk line network connection to the location. Retailers can thus not reach customers through this Tengir service, unless they have their own trunk line connection to Vopnafjörður. It is therefore only Sýn that has used the Tengir bitstream for part of its retail in the municipality. Mila on the other hand, offers Access Option 3 from the connection point in the Capital City Area through which retailers can reach all customers where Mila has connected bitstream equipment. Siminn has a very significant market share in the municipality and has rejected offers from Tengir for access to the company's bitstream service. ECOI considers that one can discern the characteristics of vertical integration between Mila and Siminn, at least in part, which strengthens Mila's position in the municipality.

2107. It is thus unlikely that Tengir can provide Mila with meaningful competition in the municipality. Though there is technically a possibility that Ljósleiðarinn can provide trunk line connections when the company's connection to the NATO around Iceland fibre cable is activated, a cable that lies through Vopnafjörður, and can offer retailers a trunk line connection, it is not certain that this would be considered economic, and even though it were, it is unlikely that the Mila share would decline to any significant extent during the lifetime of the analysis.

2108. There is not much impact from mobile networks in the municipality, where Mila has 83% market share on market 3b, having taken into account connections through mains connected mobile network routers.

2109. Mila is therefore designated as a company with significant market power on market 3b in Vopnafjarðarhreppur, and ECOI therefore considers it necessary to impose appropriate obligations on Mila in this area in the relevant market.

6.3.44 Þingeyjarsveit



2110. In Þingeyjarsveit there are about 630 bitstream connections in service at the end of 2022, including 550 on fixed line networks and 80 through mains connected mobile network routers. Bitstream connections on a fixed line network are almost all on the Tengir network, but there are a few copper lines in use in the municipality. Fibre reaches 96% of residences, 83% of all residences in workplaces and 61% of them have access to at least one fixed line network in one mobile network. There is a significant number of summerhouses in the municipality, i.e. 418 registered, and there are some connections over mains connected network routers in the municipality.

2111. Mila bitstream service cars are high share, about 67%, and has declined slightly in recent times, at the rate of about 2% per annum. It is therefore not likely that the Mila share will drop significantly below 60% during the lifetime of the analysis. At that location, Mila benefits from the strong Siminn retail market share, where one can discern the characteristics of vertical integration between the companies.

2112. Mila thus enjoys countervailing buying power vis-à-vis Tengir. One also has to assess the Mila financial power compared with Tengir, and the companies' economies of scope and scale. As Siminn has not shown interest in using Tengir bitstream for its retail, Tengir opportunities for growth are limited to the success of others in retail competition with Siminn. The Tengir access point is in Akureyri, and retailers therefore need to have a connection there to be able to provide the service in the Tengir network, but Mila can offer retailers access to the municipality through an access point in Reykjavik. Although Mila and others can provide connections over a trunk line to Akureyri, it is not possible to consider them to be an adequate

option for activating retail competition in the municipality. Continued access to Mila bitstream system is therefore necessary for competition at retail level in the municipality.

2113. There is a similar situation in the neighbouring municipalities of Norðurþing and Eyjafjarðarsveit, where Mila shares are also high and are supported by high Siminn market share is on a related retail market. Mila had 67% market share at the end of 2022 on the relevant market 3b, and the Mila share was 59% after having taken mobile networks into account. Competitive pressure from Mila competitors in neighbouring municipalities is therefore not significant.

2114. Having taken the above into account, ECOI deems the situation on market 3b in Þingeyjarsveit to be such that Mila enjoys significant market power and that there is need to impose appropriate obligations on Mila in that municipality.

6.3.45 Conclusion on assessment of electronic communications companies with significant market power on Market 3b

2115. In the following 31 municipalities, ECOI, assesses that effective competition prevails, or that the tendency is towards effective competition during the lifetime of the analysis.

- Akraneskaupstaður
- Árneshreppur
- Ásahreppur
- Bláskógabyggð
- Bolungarvíkurkaupstaður
- Borgarbyggð
- Flóahreppur
- Garðabær
- Grímsnes- og Grafningshreppur
- Grýtubakkahreppur
- Hafnarfjarðarkaupstaður
- Hrunamannahreppur
- Hvalfjarðarsveit
- Hveragerðisbær
- Hörgársveit
- Ísafjarðarbær
- Kjósarhreppur
- Kópavogsbær
- Mosfellsbær
- Mýrdalshreppur
- Rangárþing eystra
- Rangárþing ytra

- Reykjanesbær.
- The City of Reykjavík
- Seltjarnarnesbær
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Súðavíkurhreppur
- Svalbarðsstrandarhreppur
- Sveitarfélagið Árborg
- Tjörneshreppur

2116. 80% of the country's inhabitants live in the above specified municipalities.

2117. In the following 31 municipalities, ECOI considers that Mila has significant market power.

- Akureyrarbær
- Dalabyggð
- Dalvíkurbyggð
- Eyjafjarðarsveit
- Eyja- og Miklaholtshreppur
- Fjallabyggð
- Fjarðabyggð
- Grindavíkurbær
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Múlaþing
- Norðurþing
- Reykhólahreppur
- Skaftárhreppur
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Suðurnesjabær
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur

- Sveitarfélagið Vogar
- Tálknafjarðarhreppur
- Vestmannaeyjabær
- Vesturbyggð
- Vopnafjarðarhreppur
- Þingeyjarsveit

2118. 19% of the country's inhabitants live in the above specified municipalities.

2119. In the following municipality, ECOI considers that Ljósleiðarinn has significant market power:

- Sveitarfélagið Ölfus

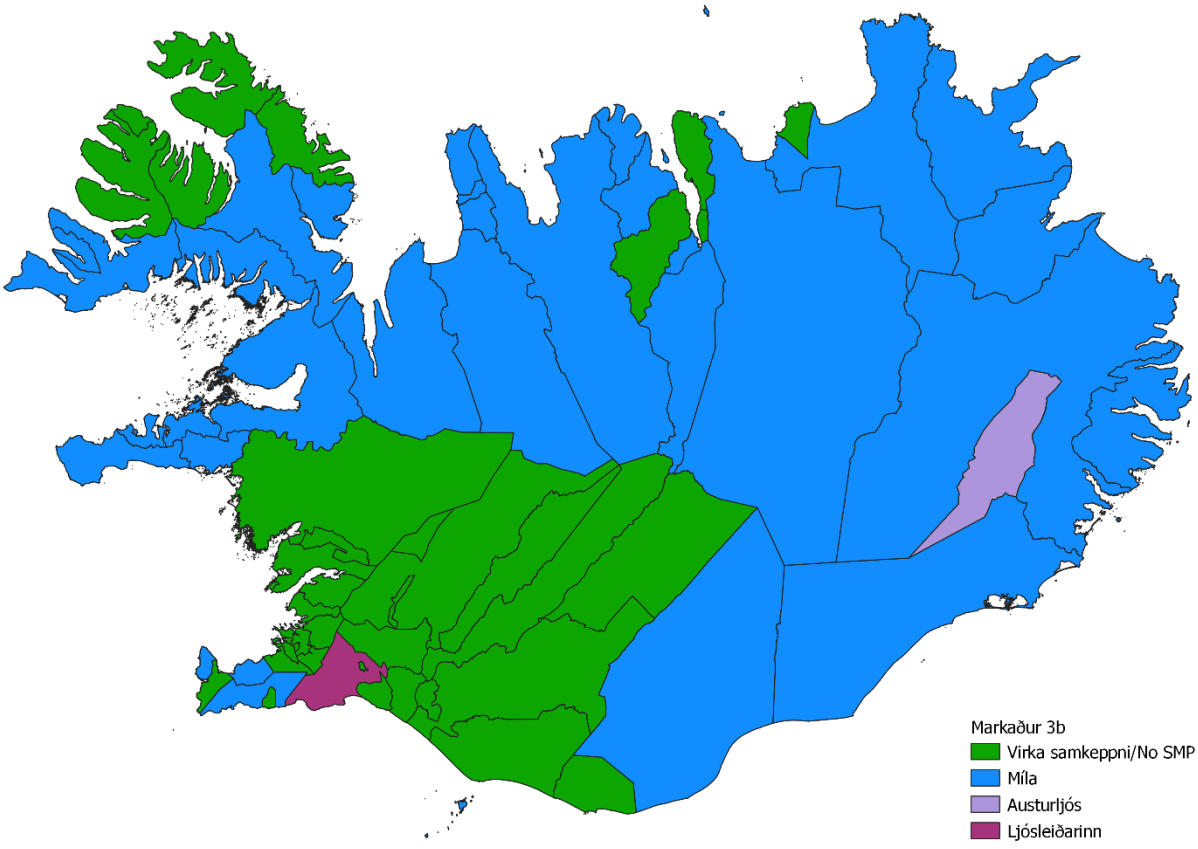
2120. 1% of the country's inhabitants live in Sveitarfélagið Ölfus.

2121. In the following municipality, ECOI considers that Ljósleiðarinn has significant market power:

- Fljótsdalshreppur

2122. Less than 0.1% of the country's inhabitants live in Fljótsdalshreppur.

Figure 6.2 Conclusion on assessment of significant market power on market 3b by municipality



7 Competition problems, wholesale-only companies and in general on imposition of obligations

7.1 In general, on obligations

2123. As stated in the paragraph 2 of Article 1 of Regulation no. 556/2023 on market analysis in the field of electronic communications, the purpose of market analysis is to show whether effective competition prevails on electronic communications markets and to decide on applying measures if competition is not effective, for the purpose of enhancing consumer interests. One must furthermore take into account whether deployment of high-capacity networks on commercial grounds is inadequate when elaborating obligations, where active competition does not prevail.

2124. In paragraph 1 of Article 1 of the above specified regulation, it states that the objective of the regulation is to increase transparency and harmonisation in the implementation of market analysis in the field of electronic communications, which among other things is intended to support the creation and maintenance of an environment for active competition in electronic communication in Iceland and to support the deployment of high-capacity networks, first and foremost fibre and of high-speed mobile networks on commercial grounds where possible, for the benefit of consumers.

2125. In paragraph 4 of the same Article, it states that one shall create competitive incentives and practice sharing of infrastructure in order to support economic development of high-capacity networks, with the aim of supporting innovation in service provided over electronic communications networks, including the Internet. Competition shall be strengthened in electronic communications with economic investments in new and existing electronic communications infrastructure and as appropriate by imposing obligations where they are needed, particularly at wholesale level, for the purpose of achieving active competition on retail electronic communications markets.

2126. When one has defined the relevant product or service market, geographic markets, conducted evaluation of competitive conditions on relevant markets and as appropriate having designated electronic communications companies, one or more, as having significant market power on those markets, the next step is to describe competitive problems on the relevant markets. One then needs to decide whether those electronic communications company that have been designated having significant market power on the relevant markets fulfil the legal conditions to be deemed wholesale-only companies and finally to implement obligations on the companies in question for the purpose of facilitating competition on related retail markets, for the benefit of consumers.

2127. In paragraph 1 of Article 4 of the regulation states that the purpose of obligations in market analysis is to create an advantage for consumers with respect to price, quality, choice and access to high-capacity networks, by supporting active and sustainable competition on retail electronic communications markets and the deployment of high-capacity networks on commercial grounds where possible. ECOI is required to decide whether it is justifiable to impose obligations on the relevant market under specific conditions. In paragraph 2 it states that when forming obligations on the basis of market analysis, one shall take care to avoid

that the impair investment incentives and to support that the introduction of new networks and service does not inhibit active competition. One must support sustainable investments in high-capacity networks, while at the same time protecting competition - as bottlenecks and access barriers have in many instances existed at the infrastructure level. In accordance with the above, obligations must support foreseeability and accordance in investments in high-capacity networks.

2128. As stated in paragraph 3 of Article 2 of the above specified regulation, market analysis shall be the basis for decisions on whether ECOI shall impose, maintain, amend or lift obligations on companies with significant market power.

2129. In paragraph 3 of the same Article, it prescribes that if competition is considered to be active on the relevant retail market and/or a specific geographic part of that market, without obligations on a related wholesale market, obligations shall not be imposed on companies on that retail market, nor on related wholesale markets and nor should obligations that have already been imposed be maintained.

2130. In paragraph 4 it however states that if there is not active competition on the relevant retail market, and/or on a specific part of the market, nor on the relevant wholesale market, a company, one or more, shall be designated as having significant market power on the relevant market, or on part of the market. If there is a need for obligations they shall first and foremost be imposed at wholesale level, and only in tightly defined exceptional instances at retail level. Under such circumstances, one may impose obligations on a company with significant market power according to electronic communications legislation and to this regulation or maintain or amend obligations that have already been imposed.

2131. In a report[382] from the European Regulators Group (ERG)[383] on ex-ante obligations emphasis is placed on developing competition in the construction of electronic infrastructure and networks where this is considered feasible. In such instances the imposed obligations should support such development. When infrastructure-based competition is not considered desirable due to significant and non-transitory economies of scale and scope or other barriers to entry, it is necessary to guarantee sufficient access to electronic communications networks and equipment at the wholesale level. In this context, it is necessary to ensure two things: first, to encourage service-based competition; and second, to guarantee a sufficient fee for access to existing electronic communications networks, thus providing an incentive for further investment in such networks, as well as for their renovation and maintenance. In addition to the above specified ERG report on obligations in general, the ECOI also took account of the document on the BEREC Common Position on obligations on the wholesale market for network access to fixed line networks, which was published in 2012.[384] ECOI furthermore takes into account the EU Recommendation on access to Next Generation Access

[382] ERG (06) 33, Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework - Final Version May 2006.
[383] Now BEREC: Body of European Regulators for Electronic Communications.
[384] BEREC Common Position on best practices in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market - BoR (12) 127.

networks dated 20 September 2010,[385] and Commission Recommendations number 2013/466/EU on consistent non-discrimination obligations and costing methodologies to promote competition and enhance investments in broadband.[386] It should be noted that the above specified Recommendation was replaced on 19 February 2004 with a commission Recommendation on strengthening the regulatory framework for gigabit connections no. 2024/539, called the Gigabit Recommendation. The new Recommendation was therefore published subsequent to national consultation and the analysis in fact being ready. For this reason, it is not taken into account in this analysis, and also because it remains for ESA to make analogous Recommendations.

2132. For the long-term, service-based competition that has its foundation in steered access to a cost-analysed price can be a tool for generating competition in the regeneration of electronic communications networks. This refers to what is called the investment ladder, and its objective is to create conditions that make it possible for new operators to build up their electronic communications networks in incremental steps.

2133. In selecting the obligations that are best fitted to promote competition in a given market, it is often beneficial to consider the position that would exist if obligations were not imposed on companies in the relevant market and whether it would be sufficient to use competition legislation alone to guarantee competition.

2134. In section 7.2 here below one can find general discussion on the imposition of obligations pursuant to electronic communications legislation and to the regulation on market analysis in the field of electronic communications.

2135. In section 7.3, a decision will be made on whether Mila, Ljósleiðarinn and Tengir fulfil the provisions of Article 59 of the Electronic Communications Act to be deemed wholesale-only operators, and if this is the case, ECOI has a choice of fewer potential obligations than otherwise.

2136. In section 7.4, one can see a summary of obligations in force on Mila pursuant to ECOI provisional Decision no. 9/2023 dated 15 September 2023.

2137. In section 7.5, one can find analysis of competition problems on markets 3a and 3b.

2138. In section 7.6 there is discussion on the impact of obligations in force on Mila and the effects that they have had.

2139. In sections 8-10, obligations on Míla, Tengir and Ljósleiðarinn on market 3a will be elaborated for those areas where the above specified companies are designated as having significant market power and an explanation will be provided for the necessity of these obligations and they will be supported by arguments. In sections 11-13, obligations on Mila, Ljósleiðarinn and Austurljós in market 3b will be specified for those areas where the above specified companies are designated as having significant market power and an explanation

[385] COMMISSION RECOMMENDATION of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) (Text with EEA relevance) (2010/572/EU).
[386] COMMISSION RECOMMENDATION of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU).

will be provided for the necessity of these obligations and they will be supported by arguments. In section 14 there is finally discussion about the lifting of obligations on Mila and the coming into force of obligations on Ljósleiðarinn, Tengir and Austurljós.

7.2 Imposition of obligations pursuant to electronic communications legislation and regulation on market analysis

2140. In paragraph 1 of Article 44 of the Electronic Communications Act no. 70/2022 it is stated that ECOI shall, having taken into account Article 43 of the Act, define the relevant markets, having in mind obligations pursuant to the EEA Agreement. Where appropriate, it shall co-operate with the CA in preparing such analysis. The analysis shall show whether conditions on the relevant market justify the imposition of obligations. Analysis shall take into account to the extent possible, ESA Guidelines on market analysis and on assessment of significant market power.

2141. In paragraph 2 of the same Article, it states that conditions on a market can be considered to justify the imposition of obligations pursuant to chapter IX of the Electronic Communications Act if all of the following conditions are fulfilled:

a. high, non-transitory and systemic access barriers, or access barriers in law and regulations exist;

b. the market does not tend towards active competition within the relevant time frame, having taken into account the status of competition in infrastructure and in other sources of competition that underlie access barriers, and

c. competition law on its own does not suffice to respond to an identified market failure.

2142. In paragraph 3 of the same Article, it states that when ECOI analyses the market prescribed in the ESA Guidelines on the relevant markets, it shall be deemed that the provisions of points a-c of paragraph 2 have been fulfilled unless ECOI comes to the conclusion that one or more of these criteria are not fulfilled under relevant national circumstances.

2143. In paragraph 4 of the same Article, it is stated that when making market analysis, ECOI shall in a forward-looking manner, assess how development of the relevant market would be if there were no obligations pursuant to this chapter and shall take into account the following elements:

a. market development that has an impact on the likelihood that the relevant market is tending towards active competition;

b. all competitive restraint at relevant wholesale and retail levels;

c. other rules or measures that have an impact on the relevant market, or related retail market, and

d. obligations that have been imposed on other relevant markets on or a related retail market.

2144. In paragraph 5 of the same Article, it states that if a market analysis on the basis of paragraphs 1-4 shows that circumstances on the relevant market do not justify imposition of obligations or if conditions pursuant to paragraph 6 do not pertain, then obligations shall neither be imposed nor maintained on the basis of Article 46 of the Electronic Communications Act. If obligations have been imposed on an electronic communications company with significant market power on the relevant market that no longer apply, it is obligatory to withdraw them.

2145. In paragraph 6 of the same Article it states however that if ECOI, on the basis of market analysis conducted in accordance with paragraphs 1-4, considers that the imposition of obligations is justifiable, the Authority shall identify companies that each or jointly, have significant market power, see Article 45, and shall impose, maintain or amend appropriate obligations pursuant to Article 46 of the Electronic Communications Act, if the Authority considers that without obligations, the result would not lead to active competition.

2146. In Article 46 of the Electronic Communications Act, there is discussion on obligations on companies with significant market power. In paragraph 1 it states that ECOI is authorised to impose obligations on electronic communications companies in accordance with the provisions of Chapter IX of the Act. In paragraph 2 it however states if subsequent to market analysis, an electronic communications company is considered to have significant market power on a specific market, ECOI shall impose obligations pursuant to Articles 47-52, 55 and 59, as applicable.

2147. The provisions of Article 47 prescribe on access to civil engineering, Article 48 on access to networks and service, Article 49 on transparency, Article 50 on non-discrimination, Article 51 on separation of accountancy, Article 52 on price control, Article 55 on new high-capacity networks and Article 59 on wholesale-only companies. In paragraph 2 of Article 59 it states that if ECOI comes to the conclusion that the provisions of paragraph 1 of Article 59 are fulfilled, the Authority can only impose on such a company an access obligation pursuant to Article 48 of the act and a non-discrimination obligation pursuant to Article 50 of the act and on fair and reasonable pricing, if this is considered justifiable on the basis of market analysis.

2148. In point 2 of paragraph 2 of Article 46 of the Act it states that one shall choose the method that causes least disruption to tackle problems identified in market analysis.

2149. In paragraph 5 of Article 46 of the Electronic Communications Act, it states that obligations imposed by ECOI pursuant to the Article shall be:

a. in accordance with the nature of the problem specified in market analysis;

b. proportional and take into account, to the extent possible, costs and benefits;

c. justifiable in the light of the objectives of the Electronic Communications Act, and

d. imposed subsequent to consultation in accordance with Articles 24 and 28 of the Act on ECOI no. 75/2021.

2150. In Article 29 of the above specified regulation on market analysis in the field of electronic communications, one can find general discussion on obligations on electronic communications companies with significant market power. There it states:

> "ECOI is authorised to impose obligations on electronic communications undertakings in accordance with chapter IX of the Electronic Communications Act and with this chapter of the regulation. Obligations can be necessary under specific conditions, in order to ensure development of a competitive market, where they support development and use of high-capacity networks and service over such networks and maximise benefits for end users. ECOI can decide to impose obligations on the basis of market analysis and can face their implementation and elaboration with a new administrative decision, given prior consultation with stakeholders and ESA and with other NRAs in the EEA, at both or all levels.
>
> When assessing wholesale obligations, in order to resolve specific competition problems at retail level, ECOI shall take into account that more than one wholesale market can provide wholesale supply for the specific retail market and that a specific wholesale market can provide more than one retail market with wholesale supplies. Competition on a specific market can be subject to influence from markets that are adjacent and not in vertical connection, such as between specific fixed line network and mobile network markets. ECOI shall conduct such assessment for each individual wholesale market that has been chosen for analysis, and shall first examine obligations for access to buildings, as such measures support general and sustainable competition, i.e. in electronic communications infrastructure - before examining obligations at a higher level in the value chain, i.e. competition in service. Should this not suffice, the wholesale market or wholesale markets shall be analysed that are most conducive to tackling the competition problems that have been identified at retail level.
>
> When a specific obligation is examined, ECOI shall assess its effectiveness and conduct a cost and benefit analysis, having in mind its ability to react to a specific competition problem at retail level and to create a competition environment based on differentiation and technical neutrality. ECOI shall assess its consequences and shall apply a specific obligation that may only be feasible against specific network topology, which could possibly hinder the deployment of high-capacity networks, to the disadvantage of end users.
>
> With a reservation on the rule for technical neutrality, ECOI shall assess whether to provide a specific incentive with the relevant obligations, and where possible, before an electronic communications network is developed, to support development of flexible electronic communication network topology, which could finally lessen the necessity to apply complicated and wide-reaching obligations at later stages.
>
> Before ECOI decides whether to impose further burdensome obligations on a company with significant market power, the authority is obliged to clarify whether there is a real lack of active competition on the relevant retail market or part of that market, among other things having taken into consideration the existence of potential commercial agreements or other reasons on wholesale market, including other kinds of obligations that have been imposed by the Authority or administration that is already

in force, such as for example general obligations for access to properties, which are either not possible or extremely costly to recreate and that have been imposed with the authority in Act number 125/2019 on measures for economic development of high-capacity electronic communications networks. Such an assessment that aims to ensure that only appropriate obligations necessary to tackle identified competition problems that are imposed, do not prevent ECOI from coming to the conclusion that mixing such measures, in accordance with the principle of proportionality, is the least burdensome measure to tackle the identified competition problems.

ECOI shall endeavour to simplify implementation of obligations where possible and to make them foreseeable."

2151. In Article 30 of the regulation there is discussion on the main rules for imposition of obligations. There it states:

"If, subsequent to market analysis, an electronic communications undertaking is considered to have significant market power on a specific market, ECOI shall impose on it obligations pursuant to Articles 47-52, 55, 59, of the Electronic Communications Act, and pursuant to the provisions of this chapter of the regulation, as appropriate, for the purpose of strengthening competition on electronic communications markets. Emphasis should be placed on proportionality in applying measures and ECOI shall choose the method that causes least disruption to tackle problems identified according to market analysis.

If significant market power of an electronic communications company on a specific market is considered to result in significant market power on a related market, i.e. transfer of market power, according to paragraph 2 of Article 45 of the Electronic Communications Act, one can only impose obligations for transparency, non-discrimination, separation of accountancy and price control in the latter related markets, and only obligations for non-discrimination and fair and reasonable pricing in the case of a wholesale-only company, see Article 44 of the regulation, see Article 59 of the Electronic Communications Act.

If ECOI plans, in exceptional circumstances, to impose obligations on an undertaking with significant market power with respect to access or interconnection, other than those specified in Articles 47-52, 55 and 59 of the Electronic Communications, act, the Authority shall seek endorsement from ESA in accordance with Article 28 of the Act on ECOI number 75/2021 and with obligations pursuant to the EEA agreement.

Obligations imposed according to Article 46 of the Electronic communications Act shall in each instance be among other things:

a. In accordance with the nature of the problem specified in market analysis and be designed to resolve it;

b. Transparent, justifiable and reasoned;

c. In accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity

networks, protect consumer interests and encourage the development of the internal market in the EEA;

d. Justifiable in the light of the objectives of the Electronic Communications Act, i.e. to ensure accessible, efficient, economic, effective and secure electronic communications in this country, and also to increase protection and range of choice for consumers, to support active competition, effective investments and innovation on the electronic communications market:

e. Proportional and take into account, where possible, costs and advantages, and they may not go further than necessary to achieve intended results. When assessing proportionality of obligations, one shall take into account varying competitive conditions that may prevail in varying geographic areas, particularly with reference to the ECOI database for general electronic communications networks, see Article 10 of the act on ECOI no. 75/2021,

f. Take into account, as appropriate, international demand,

g. imposed subsequent to consultation pursuant to Articles 24 and 28 of the Act on ECOI, no. 75/2021.

When imposing wholesale obligations, emphasis shall be placed on strengthening competition in the building of electronic communications networks, where this is suitable. Where such competition is not considered suitable, for example because of significant and non-transitory access barriers, adequate access to electronic communications networks at wholesale level shall be ensured, and thus encourage competition in services and furthermore adequate recompense for access to existing electronic communications networks shall be ensured, if it is authorised to impose an obligation for price control and loss encourage further investments, renewal and maintenance of networks.

If competitive conditions vary between geographic areas but are not sufficiently varied to justify segmented geographic markets, ECOI is authorised to apply varying obligations by geographic area, and also milder obligations where greater competition prevails."

7.3 Decision on whether Mila, Ljósleiðarinn, Tengir and Austurljós fulfil legal conditions to be deemed wholesale-only companies

7.3.1 In general, on provisions of Article 59 of the Electronic Communications Act on wholesale-only companies

2152. In Article 59 of the Electronic Communications Act no. 70/2022, one can find provisions on wholesale-only companies where, if an electronic communications company that has been designated as having significant market power is considered to fulfil the conditions of that Act, then ECOI has more limited options with respect to specification of obligations than if the company does not fulfil the legal requirements in question. Should such a company fulfil the

legal conditions then the only option for ECOI is to impose obligations for access, non-discrimination and fair and reasonable pricing. The provision is worded as follows:

> *"If the ECOI designates an electronic communications company as having significant market power and where it does not operate on any retail electronic communications market, the Authority shall consider whether the company has the following characteristics:*
>
> *a. All companies and operational units within the undertaking; all companies that are under the management, but not necessarily entirely owned by the same beneficial owner, and shareholders who can exercise power management over the undertaking, only have operations, now and in the foreseeable future, all wholesale markets for electronic communications service and therefore do not have operations on retail markets for electronic communications service provided for end users, and*
>
> *b. the company is not bound to conduct business with one specific company which operates on a downstream market and is active in a retail market for electronic communications service which is provided to end users, as a result of an exclusive agreement or an agreement which in reality is equivalent to an exclusive agreement.*
>
> *If ECOI comes the conclusion that the conditions prescribed in paragraph 1 are fulfilled, the Authority can only impose obligations on the company pursuant to articles 48 and 50 and for fair and reasonable pricing if such is considered justifiable on the basis of market analysis.*
>
> *ECOI shall review obligations imposed on the company in accordance with this provision at any given time, if the Authority comes to the conclusion that the conditions prescribed in paragraph 1 are no longer fulfilled. The company in question shall, without unnecessary delay, notify ECOI about all changes to circumstances related to conditions pursuant to paragraph 1.*
>
> *ECOI shall also review obligations imposed on the company in accordance with this provision, if the Authority comes to the conclusion, on the basis of information and terms and conditions that the company offers its customers in downstream markets, that competition problems exist or are likely to arise and damage end users, and that there could be a need to impose obligations for transparency, separation of accountancy, access to buildings or price control or make amendments to obligations that have been imposed pursuant to paragraph 2."*

2153. In Article 44 of regulation no. 556/2023 on market analysis in the field of electronic communications, one can find provisions on obligations on wholesale-only companies that are mostly identical to the above specified provisions of Article 59 of the Electronic Communications Act, but that constitute a more detailed elaboration of the above specified legal provisions. The provisions of paragraph 1 of Article 44 of the regulation are as follows (main additions in bold):

"If ECOI designates an electronic communications company as a company with significant market power, which operates solely on the retail market, ***given that the wholesale model is genuine*** *and* ***that there are no incentives in place to discriminate between electronic communications companies that provide electronic communication service in retail****, the Authority shall examine whether the company has the following characteristics:*

a. All companies and operational units within the undertaking; all companies that are under the management, but not necessarily entirely owned by the same party, and shareholders who can exercise power management over the undertaking, only have operations, now and in the foreseeable future, all wholesale markets for electronic communications service and therefore do not have operations on retail markets for electronic communications service provided for end users mobile device within the EEA, and

b. the company is not bound to conduct business with one specific company which operates on a downstream market and is active in a retail market for electronic communications service which is provided to end users, as a result of an exclusive agreement or an agreement which in reality is equivalent to an exclusive agreement."

2154. The above specified additions in the provisions in the regulation constitute a more detailed elaboration of Article 80 of the Code from 2018 and its preamble, and the Electronic Communications Act no. 70/2022 was intended to transpose this in Icelandic law.[387]

2155. In the final words of paragraph 208 of the preamble to the Code it is stated that the provision of electronic communication service to large companies that are not deemed to be electronic communications companies, should not prevent an electronic communications company being deemed a wholesale-only company. This exception is not presented in the

[387] Item A of paragraph 1 of article 80 of the Code is as follows: *"All companies and business units within the undertaking, all companies that are controlled but not necessarily wholly owned by the same ultimate owner, and any shareholder capable of exercising control over the undertaking, only have activities, current and planned for the future, in wholesale markets for electronic communications service and therefore do not have activities in any retail market for electronic communications services* ***provided to end-users in the Union.****" (FST emphasis edit).*
In paragraph 208 of the preamble to the Code, there is discussion on wholesale-only companies which is as follows: „Network owners whose business model is limited to the provision of wholesale services to others, can be beneficial to the creation of a thriving wholesale market with positive effects on retail competition downstream. Furthermore, their business model can be attractive to potential financial investors in less volatile infrastructure assets and with longer term perspectives on deployment of very high-capacity networks. Nevertheless, the presence of a wholesale-only undertakings does not necessarily lead to effectively competitive retail markets, and wholesale-only undertakings can be designated as having significant market power in particular product and geographic markets. Certain competition risks arising from the behaviour of undertakings following wholesale-only business models might be lower than for vertically integrated undertakings, ***provided the wholesale-only model is genuine*** *and* ***no incentives to discriminate between downstream providers exist.*** *The regulatory response should therefore be commensurately less intrusive but should preserve in particular the possibility to introduce obligations in relation to fair and reasonable pricing. On the other hand, national regulatory authorities should be able to intervene if competition problems have arisen to the detriment of end-users. A company active on a wholesale market that supplies retail services solely to business users larger than small and medium-sized enterprises should be regarded as a wholesale-only undertaking."* (ECOI emphasis edit)

clear wording of Article 80 of the Code, nor was it adopted in Article 59 of the Electronic Communications Act number 70/2022 or in Article 44 of regulation no. 556/2023 on market analysis in the field of Electronic Communications. ECOI therefore considers, in the light of the clear wording of the provision in question in the Code, Electronic Communications Act and the regulation, that such an exception is not an option. The size of companies that are not considered to be electronic communications companies has therefore no significance in assessing whether an electronic communications company is deemed a wholesale-only company.

2156. With the above in mind, it is clear that for the relevant electronic communications company in question to fulfil legal requirements to be deemed a wholesale-only electronic communications company pursuant to the above provisions, require both condition a (the ownership condition) and condition b (the behaviour condition) in paragraph 1 to be fulfilled.

2157. In the memorandum to Article 59 of the bill of law which became the above specified electronic communications legislation, there is not much reference to the provision in question, but it is stated there among other things that the provision is an innovation with respect to companies that operate solely on the wholesale market and is based on Article 80 of the Code. It is stated there that if a company with significant market power that operates solely on the wholesale market and has no connection or special agreements with retail companies, ECOI can generally only impose obligations on access to networks and service, on non-discrimination and for fair and reasonable pricing.

2158. ECOI considers that the reference in the memorandum to the relevant wholesale company not having any connections or special agreements with retail companies, to be somewhat strange in the light of the clear wording of Article 59 of the Electronic Communications Act and of the above specified discussion in the Code and in its preamble, where the intention had been to adopting the Code with the above specified legal provision, and that it is normal to take account of the wording of the legal provision itself, and to the spirit of the provision in the Code and the explanations in its preamble.

7.3.2 Decision on whether Mila is considered to fulfil legal conditions to be deemed a wholesale-only company

2159. The first issue to be examined is whether Mila fulfils the conditions of point a of the provision in question, i.e. the ownership condition. It states in the provision that in order to fulfil the condition in question, the relevant company, and all companies that it controls, but not necessarily totally owned by the same beneficial owner, must only operate on wholesale markets for electronic communications service and may therefore neither the relevant company nor its owner conduct operations on retail markets for electronic communications services provided to end-users. There is no specific discussion there on whether such retail operations are limited to Iceland or to the whole of the EEA.

2160. This is however dealt with in point a of paragraph 1 of Article 44 of the above specified regulation, and it is clearly specified that this refers to retail operations across the whole of the EEA. The regulation constitutes a valid administrative instruction which ECOI is obliged to implement. The regulatory provision in question includes, as previously stated, further elaboration of the legal provision in question, where among other things it is taken into

account that the provision in question in Article 80 of the Code is clear in this respect that the company in question or its beneficial owner may not conduct retail operations in the field of electronic communications within the European Union.

2161. In Article 30 of the regulation there is, in addition to this, discussion on the main rules for imposition of obligations. In point c of paragraph 4 of the provision, it is prescribed that obligations imposed pursuant to Article 46 of the Electronic Communications Act shall be in accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA.

2162. Mila is in 90% ownership of Ardian France SA[388], which also owns 100% share in the Spanish electronic communications company Adamo and EWE in Germany, which among other things operates on the retail markets in Spain. In a letter of reply from Mila to ECOI, dated 7 March 2023, to a query from ECOI the following is stated on this issue on page 3:

> *"The provisions of point a of paragraph 1 of Article 59 also refer to shareholders capable of exercising control over the undertaking, i.e. that they, like the company and related companies should only have activity, now and in the foreseeable future, on wholesale markets for electronic communications service and therefore do not have activities in retail markets for electronic communications services provided to end-users. With respect to this reference to controlling shareholders, it is appropriate to explain the significance of that Mila now being owned by a foreign party, Ardian France SA (Ardian) which, as ECOI is aware is a French asset management company with investments worldwide. Ardian does not operate on retail markets for electronic communications service provided to end users. Ardian does however have a wide variety of investments in asset management in a large number of markets in various countries, including in electronic communications markets outside Iceland. For example, Ardian is a shareholder in the electronic communications companies Adamo in Spain and EWE in Germany. These companies currently operate on both wholesale and retail markets in the specified countries, i.e. on markets that are in no way related to electronic communications markets in Iceland. Ardian's interest and involvement in these companies is solely from the point of view of asset management which means that there is an entirely different impact of shareholders than when one considers the shareholder relationship such as for example with the German electronic communications company Deutsche Telecom AG and its management of subsidiaries on electronic communications markets across Europe. It is important in this entire connection to view the real impact, the dissimilar incentives and involvement that varying shareholders can have, i.e. on the one hand with an asset management company like Ardian and on the other hand an electronic communications undertaking.*
>
> *Ardian investments in markets outside Iceland cannot have any impact on whether Mila is deemed a wholesale company on the Icelandic electronic communications market. Unlike the wording of the final paragraph of point a of paragraph 1 of article 80 of the Code (Directive 2018/1972) where reference is made to retail markets in the Union, the provisions of article 59 are limited to Iceland the authority and jurisdiction of*

[388] Ownership is through the company Sunstone IV hf.

ECOI is limited to supervision of electronic communications within the jurisdiction of the Icelandic state. Possible owner relationship and investments of a foreign shareholder in Mila in companies operating on electronic communications markets outside Icelandic jurisdiction are therefore irrelevant to an assessment of whether Mila can be deemed a wholesale company in Iceland in the understanding of article 59 of the Electronic Communications Act.

With reference to the above, it is Mila's view that the company fulfils the former condition of article 59 of the Electronic Communications Act."

2163. When the above specified letter from Mila was written, the above specified regulation had not been published, which was done on 23 May 2023. As previously stated, it is clearly prescribed in point a of paragraph 1 of Article 44 of the above specified regulation that this refers to retail operations across the whole of the EEA. The regulation constitutes a valid administrative instruction which ECOI is obliged to implement. It is furthermore stated in the above specified point c of paragraph 4 of Article 30 of the regulation that one of the objectives of the imposition of obligations is to support development of the internal market for electronic communications in the EEA. The provisions of Article 80 of the Code, that the provisions of Article 59 of the Electronic Communication Act was intended to adopt, clearly prescribe that it is not possible to interpret the provision in such a manner that it is limited to retail service within an individual state, but rather within the whole of the Union. One must therefore interpret the provisions of Article 59 in such a manner that it refers to retail service within the whole EEA, and not only within Iceland. Had it been the wish of the legislature to contravene the clear wording of the Code, it would have been necessary to clearly specify this in point a of paragraph 1 of Article 59, and this was not done.

2164. News was received on 27 November 2023 that Ardian had made a purchase offer for all share capital in Verne Global, which among other things operates a data centre in Iceland. Verne Global hf. is a registered electronic communications company in Iceland. The purchase has been confirmed by the Competition Authority. Telecom companies operate a point-of-presence within Verne data center from which customers of data center purchase telecom connectivity directly, without Verne acting as a intermediary. In addition, Verne offers and sells telecom services to its customers in retail which the ECOI has received confirmation of. It must though be stated that this is a very small portion of Verne's turnover. From this it is clear that Ardian is also the owner of a telecommunications company that operates in retail in Iceland. In this matter it has no effect that another fund of Ardian's is the owner of Verne, than the fund that invested in Mila.

2165. ECOI does not accept the Mila assertion to the effect that the nature of Ardian as an asset management company should have an impact on the conclusion. This should have been stated clearly in the legal provision, which was not done.

2166. With the above in mind, one must consider that the relevant company or its controlling owners may not conduct retail operations in the field of electronic communications within the EEA area, in order to fulfil the legal provisions of point a of paragraph 1 of Article 59 of the Electronic Communications Act, to be considered a wholesale-only company, and Mila does not fulfil the above specified condition.

2167. In submissions from parties to the market on the consultation document with regards to the last part of the analysis, which was published on 29 November 2023, it was pointed out that neither Mila, Ljósleiðarinn nor Tengir fulfilled the provisions of Article 59 as all operated on an electronic communications retail market in this country. ECOI subsequently called for information on customer lists of the companies. In the case of Mila, it came to light that among Mila customers are parties that cannot be deemed electronic communications companies. As stated in the section immediately above, it doesn't matter whether these are large companies or not.

2168. As it is clear that the company needs to fulfil both conditions of the provision to be deemed a wholesale-only company, and that Mila does not fulfil the conditions of point a, ECOI considers it unnecessary to decide here on whether Mila fulfils the conditions of point b of the provision.

2169. With the above in mind, Mila does not fulfil the legal requirements of Article 59 of the Electronic Communications Act to be deemed a wholesale-only company. The provision in question does thus not restrict the options for imposition of obligations that can be applied by ECOI vis-à-vis Mila, but one must naturally respect the main principles explained in section 7.1 and 7.2 here above. Although Mila does not fulfil the legal requirement of Article 59, ECOI considers the fact that Mila's incentives in this market may have changed with the sale of the company to Ardian. In sections 8 and 11 here below, obligations on Mila will be specified on the relevant wholesale markets.

7.3.3 Decision on whether Ljósleiðarinn is considered to fulfil legal conditions to be deemed a wholesale-only company

2170. In general, the access charge for Ljósleiðarinn fibre local loops is collected along with Internet service from electronic communications companies that purchase wholesale service from Ljósleiðarinn. In exceptional circumstances (about 1% of connection), Ljósleiðarinn collects the access charge separately from end users on the residential market but provides them on the other hand with no electronic communication service such as Internet service, voice telephony or TV service. In the opinion of ECOI, these transactions are not considered to be electronic communications service provided to end users in retail, as is referred to in point a of paragraph 1 of Article 59 of the Electronic Communications Act.

2171. For years, Ljósleiðarinn has operated as a wholesale company in the field of electronic communications to residences and companies, i.e. the company has not offered Internet service, voice telephony service or TV service in retail. Although one can however categorise Ljósleiðarinn in general as a wholesale company, that does not necessarily mean that the company fulfils the conditions of the above specified Article 59 of the Electronic Communications Act for wholesale-only company.

2172. In submissions from parties to the market on the consultation document with regards to the last part of the analysis, which was published on 29 November 2023, it was pointed out that neither Mila, Ljósleiðarinn nor Tengir fulfilled the provisions of Article 59 as all operated on an electronic communications retail market in this country. ECOI subsequently called for information on the companies' customer lists. In the case of Ljósleiðarinn, it came to light that among the company's customers are parties that cannot be considered electronic

communications companies. This means that Ljósleiðarinn, in the opinion of ECOI, operates on the electronic communications retail market in this country according to the definition of Article 59 of the Electronic Communications Act. It is appropriate to note that when examining customer lists, all electronic communications service is being examined and not just electronic communications service related to markets 3a and 3b.

2173. There will now be discussion on whether Ljósleiðarinn fulfils point b of the above specified provision. In the CA Decision no. 37/2023, *Ljósleiðarinn ehf purchase of the Sýn hf trunk line network*, it is stated that these transactions between Sýn and Ljósleiðarinn and thus the merger in the case would have covered a takeover of part of the operations in the Sýn company. These were assets and rights pursuant to agreements that first and foremost related to the Sýn trunk line network that Ljósleiðarinn took over. The parties to the agreement had argued in the merger memorandum that a wholesale agreement between Sýn and Ljósleiðarinn on a wide range of electronic communication service subsequent to the transactions had been a necessary instrument in implementing the merger.

2174. In the light of the wholesale agreement and the case made by the parties in the merger document, CA conducted an investigation of the agreement with an assessment of the impact of the merger. It was the CA opinion in the above specified decision, having taken into account provisions on obligation to purchase or minimum transactions, that they did not distort competition, being below the levels of sole purchasing and vertical competition barriers used as a reference in competition law, and there was furthermore the fact that Ljósleiðarinn had not been deemed to have market dominance on the wholesale markets in the case.

2175. It is very clear that Ljósleiðarinn is not bound to sell electronic communication service on the relevant wholesale markets to only one electronic communications company. Ljósleiðarinn therefore fulfils the conditions of point b.

2176. Having taken the above into account, Ljósleiðarinn does not fulfil the legal conditions to be deemed a wholesale-only company as the company does not fulfil point a of paragraph 1 of article 59 of the Electronic Communications Act.

7.3.4 Decision on whether Tengir is considered to fulfil legal conditions to be deemed a wholesale-only company

2177. Tengir provides electronic communications companies with wholesale service in the field of electronic communications to the company's fibre network. Unlike Mila and Ljósleiðarinn (mostly), Tengir does however collect and access charge to its fibre network directly from end-users but provides some on the other hand with no electronic communications service such as Internet service, voice telephony service or TV service. In the opinion of ECOI, this arrangement on its own cannot be considered to have the impact that Tengir is not defined as a wholesale-only company. What matters most in this regard, is that the company does not provide electronic communication service in retail on its local loop network, such as Internet service, voice telephony or TV service.

2178. In the opinion of ECOI, these transactions are not considered to be electronic communications service provided to end users in retail, as is referred to in point a of paragraph 1 of Article 59 of the Electronic Communications Act.

2179. For many years, Tengir has operated as a wholesale company in the field of EC, to residences and companies are, i.e. the company has not offered Internet service, voice telephony service or TV service in retail. Although one can however categorise Tengir in general as a wholesale company, that does not necessarily mean that the company fulfils the conditions of the above specified Article 59 of the Electronic Communications Act for wholesale-only.

2180. In submissions from parties to the market on the consultation document in the second part of the analysis, which was published on 29 November 2023, it was pointed out that neither Mila, Ljósleiðarinn nor Tengir fulfilled the provisions of Article 59 as they all operated on an electronic communications retail market in this country, but it had been the preliminary assessment of ECOI that Ljósleiðarinn and Tengir fulfilled the conditions to be considered wholesale-only companies. ECOI subsequently called for information on the companies' customer lists. In the case of Tengir it came to light that among Tengir customers are parties that cannot be deemed electronic communications companies. This means that therefore Tengir in the opinion of ECOI conducts operations on an electronic communications retail market in this country pursuant to the definition of Article 59 of the Electronic Communications Act. It is appropriate to note that when reviewing customer lists, all electronic communications service is being examined and not just electronic communications service related to markets 3a and 3b.

2181. Tengir is not bound to do business with only one electronic communications company and the company's agreements do not indicate that they should be deemed exclusive agreements. This means that the condition of point B of paragraph 1 of Article 59 of the Electronic Communications Act is fulfilled with respect to TT.

2182. With the above in mind, Tengir does not fulfil the legal conditions to be deemed a wholesale-only company as the company does not fulfil point a of paragraph 1 of Article 59 of the Electronic Communications Act.

7.3.5 Decision on whether Austurljós is considered to fulfil legal conditions to be deemed a wholesale-only company

2183. Austurljós is a retailer of Internet service and does not therefore fulfil the conditions of point a of paragraph 1 of Article 59 of the Electronic Communications Act. It is therefore unnecessary to discuss other points in the Article. Austurljós can therefore not be deemed a wholesale-only company.

7.4 Obligations on force on Mila pursuant to ECOI provisional Decision no. 9/2023

2184. The analysis here under discussion document replaces a provisional decision from market analysis of markets 3a and 3b in case no. 9/2023, dated 15 September 2023 which replaced the Electronic Communications Office of Iceland (ECOI) Decision no. 5/2021, dated 19 October 2021 on the designation of undertakings with significant market power and the imposition of obligations on the wholesale markets for local access provided at a fixed location (market 3a) and central access provided at a fixed location for mass-market products

(market 3b). The above specified provisional decision was set a time limit for being in force until 1 March 2024, born with an ECOI notification dated 29 February 2024, the time limit was extended until 1 June 2024. With Decision no. 5/2021 Míla was designated as an electronic communications undertaking with significant market power on those both markets and appropriate obligations were imposed on the undertaking in an endeavour to solve the identified competition problems on the markets in question. ECOI considered it however justifiable to apply obligations that were burdensome to a varying degree in 17 more specific municipalities, where it was deemed that there was more active competition, and in other municipalities in the country where competition was low or even non-existent. The obligations were mostly comparable to obligations imposed on Mila with PTA Decision no. 21/2014, but there was however an obligation added to the effect that Mila and Siminn - that then constituted a vertically integrated company group and were considered to form one economic unit in the understanding of competition law - passed an economic replicability test (ERT). The new obligation led to Siminn being designated as a company with significant market power in the context of that obligation.

2185. As has been previously stated Mila and Siminn appealed ECOI Decision no. 5/2021 to the Appellate Committee for electronic communications and Postal Affairs (AC). With the above specified ruling from the committee from 29 December 2022, the committee changed in parts the appealed decision on the Siminn sale of Mila, which was endorsed by the Competition Authority just under a year after the ECOI appealed decision was made. The ruling was mainly based on the changed situation brought about by the sale of Mila by Siminn.

2186. The Appellate Committee therefore rescinded parts of the appeal decision that were based on the premise that Mila and Siminn belonged to the same company group. The Appellate Committee noted that although there were still some connections between the companies as a result of their service agreement, it was not clear whether it would be possible to apply milder measures to counteract damaging impact from those connections on competition on the electronic communications market. The Committee considered it proper to rescind imposition of obligations that directly concerned the existence of the Siminn Group from and including 15 September 2022 when the merger had been authorised. This meant that the designation of Siminn as a company with significant market power was rescinded, and the obligation on Siminn to pass, along with Mila, an economic replicability test (ERT) of the companies' fibre products, was withdrawn. This obligation was of course also withdrawn from Mila, as was the obligation that the companies needed to take care that there should not be an unnecessarily small difference between the Mila wholesale price and Siminn retail price. The Committee furthermore withdrew the obligation that had been imposed on Mila that the company should connect its bitstream equipment with fibre local loops of other network operators that so requested against a reasonable charge, as this obligation was intended to counteract the impact of vertical integration of Siminn and Mila. These obligations were never implemented. The Committee defined the validity of its decision as until 15 September 2023, but did not specify what would happen were ECOI not able to complete a new market analysis with a decision within these time limits.

2187. With the ECOI professional Decision no. 9/2023 dated 15 September 2023, ECOI imposed obligations on Mila on the local loop and bitstream markets (M 3 a and M 3b) in accordance with the obligations prescribed in the above specified decision by AC in case no. 3/2021. Obligations were provisionally kept in force until a decision in a new market analysis

of the relevant markets had come into force. In point 2 of the wording of the decision, the lifting of obligations on Mila in 36 municipalities in market 3a and in 31 municipalities in market 3b is prescribed. A reasonable glidepath, pursuant to Article 47 of the regulation on market analysis in the field of electronic communications, with respect to withdrawal of obligations in those areas where active competition on the relevant market was deemed to prevail pursuant to the draft market analysis published for national consultation on 15 September 2023, began on and including the date of the provisional decision and ends on the day specified by ECOI in the final decision in the case.

2188. The reason that ECOI consider there to be a need to make the provisional decision in question, despite the fact that the Electronic Communications Act number 70/2022 clearly prescribes that a period without obligations cannot exist between market analysis, was that ECOI had realised that Mila considered that a period without obligations would be in force from and including 16 September 2023 until the making of a final decision subsequent to a revised ECOI market analysis. ECOI considered it necessary to make the provisional decision in question in order to prevent legal uncertainty and to ensure predictability with respect to obligations on the relevant markets, while ECOI concluded an ongoing review of market analysis of the relevant markets.

2189. Mila and Ljósleiðarinn appealed the above specified provisional decision but with a ruling from the Appellate Committee dated 27 December 2023, the committee dismissed the appeals as the provisional decision in question was not a decision that was subject to appeal, which ended the case, but rather became an item in case procedure of the market analysis here under discussion. As previously stated, ECOI extended the period of validity of the provisional decision until 1 June 2024 with a notification dated 29 February 2024.

2190. From the above one can conclude that the obligations that were imposed with the ECOI provisional decision, and that are in accordance with older obligations as amended with the AC Decision in case no. 3/2021, rest on Mila until a final decision is available in the case here under discussion. Obligations in force on Mila on market 3a are as follows:

- **Obligation to provide access.** Mila shall accede to normal and fair requests for local access at wholesale level to its copper and fibre networks, whether this is fully unbundled or shared access. Access shall furthermore be provided to related facilities and service. Where it is not possible to provide access to a physical local loop, Mila shall offer VULA virtual solution which perform the same functions. Mila shall provide access to ducts, conduits and civil works and cable laying projects. Information shall be published on ducts and conduits, civil works and cabling projects and changes to the arrangement for access, in the manner described in Section 2.1 in ECOI Decision no. 5/2021. The obligation to provide access to ducts and conduits, the Mila duty to advertise with respect to civil works and the rule on 5 years' notice to inform about migration of network systems does not apply in those 17 municipalities where more competition was deemed to prevail: Reykjavíkurborg, Kópavogsbær, Seltjarnarnesbær, Garðabær, Hafnarfjarðarkaupstaður, Mosfellsbær, Akraneskaupstaður, Svalbarðsstrandarhreppur, Grýtubakkahreppur, Tjörneshreppur, Hveragerðisbær, Sveitarfélagið Ölfus, Flóahreppur, Ásahreppur, Fljótsdalshreppur, Rangárþing ytra and Skeiða- og Gnúpverjahreppur.

- **Obligation to respect non-discrimination** vis-à-vis all electronic communications companies that purchase central access provided at a fixed location or access to related facilities. Equivalence of Input (EoI) shall be in place, and also equal access to information, and equal opportunities to influence development of wholesale products. Unrelated parties shall be able to replicate the product offer of related parties in a sustainable manner (Technical Replicability). Mila is obliged to make service level agreements (SLA) with all purchasers of access and to publish information on quality guarantees (SLG). Mila shall collect and publish on a monthly basis, specific key performance indicators (KPI).

- **Obligation for transparency** Mila shall issue a reference offer on local access, related facilities and access to ducts and conduits. Mila shall among other things publish information on registration of local loops and ducts and conduits, technical descriptions, characteristics of networks, terms and conditions for delivery and on usage and tariff.

- **Obligation for separation of accountancy.** Mila is required to deliver annually to the ECOI separate profit and loss accounts and balance sheet for local access, which shows the division between copper local loops, fibre local loops, access to facilities (hosting) and access to ducts and conduits, along with the opinion of an independent auditor on the implementation of separation.

- **Obligation for price control.** The tariff for access to copper local loops, Ljóslína in street cabinet, VULA on copper local loops and facilities related to local access on copper local loops shall be cost-oriented. They shall be based on historical costs which are allocated to the appropriate services (HCA FAC). The Mila tariff for ducts and conduits shall be based on historical costs or on benchmarking. Mila pricing of the local loops shall be fair and reasonable and without and without discrimination. Mila is furthermore banned from applying damaging predatory pricing. Mila shall publish a tariff for fibre local loops and VULA service on fibre local loops.

- **Obligation on cost accountancy** for copper and fibre local loops and related facilities, backhaul fibre for local loop access, hosting and access to ducts and conduits. A description of cost accounting and a report from an independent auditor on correspondence between the description and execution shall be delivered to the ECOI.

2191. Obligations in force on Mila on market 3a are as follows:

- **Obligation to provide access.** Mila shall accede to all reasonable and fair requests from other electronic communications companies for central wholesale access, see definition of service Market 3b, whether the access is provided over copper or fibre local loops. Mila shall also, if this is requested, handle the sending of bitstream through its backbone network to a location where the electronic communications company in question has a connection with the Mila network. Mila shall furthermore provide access to related facilities and service that are needed in connection with central access. Changes to arrangements for bitstream access shall be notified in the manner described in Section 4.1, but the duty to notify changes

to arrangements for bitstream access with two years' notice does not apply to those 17 municipalities where more competition was deemed to prevail, i.e. Reykjavíkurborg, Kópavogsbær, Seltjarnarnesbær, Garðabær, Hafnarfjarðarkaupstaður, Mosfellsbær, Akraneskaupstaður, Svalbarðsstrandarhreppur, Grýtubakkahreppur, Grýtubakkahreppur, Tjörneshreppur, Hveragerðisbær, Sveitarfélagið Ölfus, Flóahreppur, Ásahreppur, Fljótsdalshreppur, Rangárþing ytra and Skeiða- og Gnúpverjahreppur. Mila is unauthorised to withdraw its bitstream equipment or service from the fibre networks of other network operators than Mila, from whom Mila has leased dark fibre against the wishes of the network operators in question, while Siminn does not provide service over bitstream systems of such operators.

- Obligation to respect non-discrimination vis-à-vis all electronic communications companies that purchase central access to a copper or fibre network. Equivalence of Input (EoI) shall be in place, and also equal access to information, and equal opportunities to influence development of wholesale products. Unrelated parties shall be able to replicate the product offer of related parties in a sustainable manner (Technical Replicability). Mila is obliged to make service level agreements (SLA) with all purchasers of access and to publish information on quality guarantees (SLG). Mila shall collect and publish on a monthly basis, specific key performance indicators (KPI).

- **Obligation for transparency** Mila shall publish a reference offer on central access and related facilities. Mila shall among other things publish information on registration of local loops, technical descriptions, characteristics of networks, terms and conditions for delivery and on usage and tariff.

- **Obligation for separation of accountancy.** Mila is required to deliver annually to the ECOI separate profit and loss accounts and balance sheet for bitstream access, which shows the division between bitstream access over copper local loops, bitstream access over fibre local loops and access to facilities (hosting), along with the opinion of an independent auditor on the implementation of separation.

- **Obligation for price control.** The tariff for bitstream access over copper local loops and related facilities shall be cost-oriented. They shall be based on historical costs which are allocated to the appropriate services (HCA FAC). Mila pricing of the local loops shall be fair and reasonable and without discrimination. Mila is furthermore banned from applying damaging predatory pricing. Mila shall publish a tariff for central access to fibre local loops.

- **Obligation for cost accounting** for central access to copper and fibre local loops and related facilities. A description of cost accounting and a report from an independent auditor on correspondence between the description and execution shall be delivered to the ECOI.

7.5 Competition problems on the relevant markets

7.5.1 In general, on competition problems

2192. As stated in of Article 1 of regulation no. 556/2023 on market analysis in the field of electronic communications, the purpose of market analysis is to show whether active competition prevails on electronic communications markets and decide on applying measures if competition is not effective, for the purpose of supporting consumer interests. Market analyses and measures according to such analysis are thus intended to create and maintain an effective, competitive environment in electronic communications in this country. They are also intended to support the distribution of high-capacity networks, as competition in infrastructure is considered most conducive to increasing competition on electronic communications markets. Competition in electronic communications shall therefore be strengthened, including with economic investments in new and existing electronic communications infrastructure, and as appropriate by imposing obligations where they are needed, particularly at wholesale level, for the purpose of achieving active competition on retail electronic communications markets.

2193. One can therefore provide good arguments for the contention that competition supports increased distribution of high-capacity networks, and also that the distribution of high-capacity networks from more than one operator leads to increased competition. This has been shown to be the case in this country in recent years.

2194. When infrastructure-based competition is neither realistic or feasible, and thus not likely, due to significant and persistent access barriers, including in sparsely populated and extensive areas, it is necessary to guarantee adequate access to electronic communications networks and equipment at wholesale level. Service competition based on regulated access, often with cost analysed prices, as widely in Europe been used as a tool for generating competition in the regeneration of electronic communications networks. This refers to what is called the ladder of investment, the objective of which is to create conditions that make it possible for smaller or new operators to build up their electronic communications networks in incremental steps. Sýn (previously Vodafone) aimed for this for a considerable period of time but has now sold its fixed line network electronic communications infrastructure to Ljósleiðarinn, so one can say that the company has taken a step down the ladder of investment on the relevant wholesale markets. Nova is possibly the only company today that could be said to be climbing the ladder investment on the relevant markets, where the company's investments mainly relate to mobile network infrastructure and equipment for data transfer over trunk line networks.

2195. Competition in this country has rather been based on distribution of fibre networks by a number of operators, that do not rely on Mila electronic communications infrastructure, with the possible exception of trunk lines. In this context one can mention for example Ljósleiðarinn, Tengir and Snerpa. The above views are reflected in paragraph 5 of Article 30 of the above specified regulation:

> "When imposing wholesale obligations, emphasis shall be placed on strengthening competition in the building of electronic communications networks, where this is suitable. Where such competition is not considered suitable, for example because of

significant and non-transitory access barriers, adequate access to electronic communications networks at wholesale level shall be ensured, and thus encourage competition in services and furthermore adequate recompense for access to existing electronic communications networks shall be ensured, if it is authorised to impose an obligation for price control and loss encourage further investments, renewal and maintenance of networks."

2196. As stated in Article 4 of the above specified regulation, the purpose of obligations in market analysis is to create an advantage for consumers with respect to price, quality, choice and access to high-capacity networks, by supporting active and sustainable competition on retail electronic communications markets and the deployment of high-capacity networks on commercial grounds, where possible. As was stated here above in section 6, this has become the reality across the country. This is however not the situation in many areas and for this reason, ECOI is obliged to decide whether it is justifiable to impose obligations on an electronic communications company in those areas, and then to decide which obligations.

2197. When the relevant product or service markets and geographic markets have been defined, and when an assessment has been made of competitive conditions on the relevant markets and electronic communications companies have been designated as having significant market power in those areas where there is a lack of competition, the time has come to describe the competitive problems on the relevant markets in the areas in question, before appropriate obligations are then elaborated on the electronic communications companies in question, for the purpose of facilitating competition on a related retail market, for the benefit of consumers.

2198. In paragraph 2 of Article 46 of the Electronic Communications Act it states among other things that when imposing obligations, the method shall be chosen that causes when tackling *problems* identified in market analysis. In point a in paragraph 5 of Article 46 of the Electronic Communications Act, it states that obligations imposed by ECOI shall be in accordance with the nature of *the problem* specified in market analysis. In point a of paragraph 4 of Article 30 of the above specified regulation, it states that obligations shall be in accordance with the nature of *the problem* specified in market analysis and shall be designed to resolve this.

2199. In paragraph 2 of Article 29 above specified regulation it states that when assessing wholesale obligations, for the purpose of resolving specific competition problems at retail level, ECOI shall take into account the more than one wholesale market could provide wholesale procurements for a specific retail market. This applies among other things to a related retail market in this analysis, where wholesale procurement related to that market could result from access to both market 3a and market 3b, although access to market 3b is much more common than access to market 3a in this country today. ECOI shall conduct such an assessment for each individual wholesale market that is taken for analysis, i.e. Both market 3a and 3b in this analysis, and first examine whether obligations on access to buildings/infrastructure, see Article 47 of the Electronic Communications Act, could suffice on their own, as such remedies normally support more sustainable competition, before examining obligations higher in the value chain, i.e. service competition. Should such infrastructure obligations not suffice, the wholesale market or wholesale markets shall be analysed that are most conducive to tackling the competition *problems* that have been identified at retail level.

2200. Obligations are imposed on companies with significant market power with the aim of combating real and/or potential *problems* in the field of competition on the market in question, and on the downstream wholesale market (3b) and related retail market. Problems on retail markets almost always result from problems are also level which means that it is not possible to focus solely on competition problems at retail level, but also at wholesale level.

2201. Problems in the field of electronic communications, with the exception of problems that can derive from market structure, refers to any kind of behaviour by a company with significant market power, which is intended to, or leads to any other electronic communications companies being forced out of markets, which prevents potential competitors from entering the market and/or damages consumers' interests. This refers first and foremost to electronic communications companies that operate on a retail market and the purchase procurements from companies operating on the relevant wholesale markets 3a and/or 3b. When obligations are applied pursuant to the Electronic Communications Act, where the methodology in market analysis is based on the main principles of competition law, the reason for such does not need to be that significant market power is in reality being leveraged, and even less that a competition infringement has been committed, but it suffices that competition problems could possibly arise from the prevailing conditions, among other things because of specific market structure, that are detrimental competition, for example lack of infrastructure competition in a specific area.

2202. A company with significant market power can leverage its market power in many ways. As a result of a specific market structure, for example a lack of infrastructure competition, vertical market power, or characteristics of such, or a superior position with respect to trunk line connections across the country, a company can deny other companies access to systems or through other facilities, for example hosting, can price service too high/low, discriminate between companies on the basis of price for service or quality and can leverage information in an unfair manner. Despite the fact that Míla and Siminn are no longer under the same ownership, a long-term agreement is in force between the companies which creates very strong ties between the companies for an extended period of time, and Mila is Siminn's priority supplier. It is therefore not out of the question that this agreement can at least to a certain extent have a similar impact as if these were vertically integrated companies, or that the commercial interest relationship between the companies is at least still in place. To some, though lesser extent, one can say the same about the agreement between Ljósleiðarinn and SS, at least with respect to the commercial relationship between the companies. In the CA opinion number 37/2023, dated 29 September 2023, it does however say on page 78 that if one takes the distort in the above specified decision, having taken into account provisions on obligation to purchase or minimum purchase, CA considers that they do not distort competition, being below the levels of sole purchasing and vertical competition barriers used as a reference in competition law, and there was furthermore the fact that Ljósleiðarinn was not been deemed to have market dominance on the wholesale markets in the case. In addition to this it was stated the Sýn would have significantly less market share on the relevant retail market than Siminn.

2203. The above specified aspects could easily affect the downstream wholesale market, and related retail market. Another consequence of a company's significant market power can be that a company hinders access by others to a market, practises abuse with excessive pricing which returns inflated profits (where a company with significant market power sets prices

without needing to take customers or competitors into consideration) and in addition to this there is a significant risk of inefficiency in production as competition is unable to exert the constraints necessary. These aspects related rather to competition on the relevant wholesale market, which can then in turn impact on market 3b and thus affect a related retail market. Problems on an adjacent trunk line market could also have an impact on markets 3a and 3b, and Mila is the company in the best position with respect to facilities and investment in infrastructure on the trunk line market in question in this country.

2204. Discussion on competition problems in this analysis differs somewhat from discussion in the older ECOI analysis in case no. 5/2021, as the ownership connections between Siminn and Míla have been severed. In section 10 of Appendix a in the prior ECOI analysis, one can find considerable discussion on the position of the Míla and Siminn Group and how the relationship between the companies could create competition problems on the relevant markets. Despite the fact that ECOI has identified the characteristics of continued vertical integration, at least in part, between the companies, the discussion here will mostly be directed at those competition problems that result from significant market power over companies on the relevant wholesale markets. It is necessary here to emphasise that it is not necessary to demonstrate that damaging behaviour has taken place but rather it suffices to indicate likely incentives and opportunities for behaviour that could inhibit competition, among other things as a result of market structure. So in the following sections there will be discussion on competition problems that competitive conditions on the relevant wholesale markets and on a related retail market, create. There will also be discussion on the impact that the difference in relative position that exists between Mila on the one hand other local network operators on the other hand on the market for trunk line lease (market 14/2004), could have on competition on the above specified market. Among other things, an assessment shall be made of what competition problems could arise if no obligations were in place on the relevant wholesale markets.

7.5.2 Competition problems on market 3a

7.5.2.1 General

2205. In Section 6 here above, ECOI came to the conclusion that in specific areas on Market 3a, there was no active competition and that Mila, Tengir and Ljósleiðarinn had significant market power in specific areas. Such a situation means that the companies, each in their own areas, have such economic strength that it can hinder efficient competition and that they could to a substantial extent operate without concern for competitors, customers and consumers.

2206. In the following sections there is discussion on competition problems created by competitive conditions on the market, both on the relevant market and on related markets. There was also discussion on the impact that the difference in relative position that exists between Mila on the one hand other network operators on the other hand on the market for trunk line lease (market 14/2004) could have on competition on the above specified market. Among other things, an assessment shall be made of what competition problems could arise if no obligations were in place on the relevant wholesale market 3a. As previously stated, it is not necessary to demonstrate that damaging behaviour has taken place, but rather suffices to indicate likely incentives and opportunities for behaviour that could inhibit competition,

among other things as a result of market structure. There will nevertheless also be discussion on instances that have arisen during past years that can indicate that the position of Mila and the former Siminn Group in connection with market 3a could create competition problems, but as will be explained in more detail, there remain the opinion of CA and ECOI characteristics of vertical integration between the companies in the light of the long-term agreement between Mila and Siminn, which among other things prescribes very substantial minimum purchases by Siminn from Míla, where Míla is according to the agreement the Siminn priority provider. Analysis of competition problems aims to provide a basis for a decision on imposition of obligations and on elaboration of the types of obligations that could be most useful in combating competition problems on the market, or on specific parts of that market.

2207. In the ERG report from 2006 on a common position with respect to the imposition of obligations on electronic communications markets[389], there is discussion on the main categories of competition problems that can arise on electronic communications markets. Problems are also mentioned that relate to significant market power on the relevant market, to vertical integration and horizontal integration. ECOI furthermore takes account of the BEREC document from 2012 in this connection[390]. In the opinion of ECOI, the most likely competition problems on wholesale market 3a are on the one hand those that are caused by or could be caused by significant market power on that market alone, and on the other hand by vertical integration, or its equivalent, and transfer of market power to related markets. In the opinion of ECOI, one must consider these problems could arise in this country in specific geographic areas and even though in the case of Mila the ownership relationship with Siminn had been severed. In the following sections, these problems are described mostly in a general manner, and after that there is discussion on the individual instances that have arisen.

2208. Míla has for example control over facilities in telephone exchanges and technical spaces widely across the country, which is extremely important and is difficult for other electronic communications companies to duplicate. Hosting of equipment in these facilities is therefore often critical for those electronic communications companies that lease or have a potential interest in leasing access to Mila local loops, and also for those companies that wish to serve such parties that lease local loops with the connections necessary for the service provided all the local loops. There is furthermore the fact that access to such facilities, such as access to ducts and conduits can be important in areas where only one party operates electronic communications networks, or where the electronic communications networks of other parties reach a limited number within the area, in order to facilitate parallel coverage of another electronic communications network where this is economically feasible. Ljósleiðarinn leases substantial facilities from Mila for this purpose, both for passive connections and active equipment, and the scope of this may increase at this point in time when Ljósleiðarinn has acquired access to two threads in the NATO cable and has purchased electronic communications networks from Sýn widely across the country. Though this may not have involved substantial amounts of money in the broader context, these facilities are

[389] ERG (06) 33, Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework - Final Version May 2006.

[390] BoR (12)127: BEREC Common Position on best practices in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence position of significant market power in the relevant market.

important for Ljósleiðarinn, and possibly for other parties, and at the same time for those Mila customers that are also customers of Ljósleiðarinn. Tengir also has such hosting options in the company's operational territory, as has Ljósleiðarinn in some case, with all that company mostly leases such hosting options from OR in the OR operational territory. There will also be discussion on the impact that the difference in status that exists between Mila on the one hand other local network operators on the other hand on the market for trunk line lease (market 14/2004), could have on competition on the above specified market, a market that is important for local network operators being able to expand their operational territory and thus support competition in infrastructure.

7.5.2.2 Problems related to assessment of significant market power on the relevant market 3a

2209. Problems related to significant market power on the relevant market and as appropriate on the related wholesale market 3b, and that can arise on those same markets, are of varying kinds where one can mainly name access barriers, abuse vis-à-vis customers operating at retail level, for example with pricing, abuse vis-à-vis competitors on the relevant markets and inefficiency in production or service offer.

2210. A company that enjoys market power on the relevant market, and as appropriate on an adjacent market for trunk line lease (market 14/2004),[391] can endeavour to create new entry barriers on the market, or on a specific geographic part of the market, in order to hinder new competition or make competition difficult for competitors on the relevant market, or on the downstream wholesale market 3b. This this can for example be done in the form of discounts originating from other operational elements of a wholesale company with a broad service offer, which lead to abnormally low price on the relevant market, or on a specific geographic part of the market, in the short or long term and can prevent competitors on that market in the areas in question that do not have as broad a service offer and do not have as substantial economic strength, can enjoy normal profitability, or can prevent that potential competitors enter the relevant market. If such a company succeeds in increasing its market power on the relevant wholesale market in the relevant area even more, or even drives its competitors off the market or prevents potential competition, it is clear that both an incentive and an opportunity are created for the party in question to once again increase his wholesale price in the relevant area and thus damage competition on downstream markets, i.e. on market 3b and related retail market.

2211. Competition problems can furthermore manifest themselves in the behaviour of such a party that has a broad service offer and substantial economic strength vis-à-vis weak competitors or potential competitors, by directing access seekers to its own electronic communications network on the relevant market or on the downstream wholesale market 3b, for example with advantageous wholesale bundles that are not on offer on other networks, where for example products are bundled together related to market 3a, market

[391] There will be more detailed discussion on the impact of difference in status on market 14 between meal on the one hand other network operators on the other, in section 7.5.2.3, which is entitled vertical integration, transfer of market power, bundling of wholesale service, economy of scope and status difference related to trunk line lease.

3b, trunk line connections and even mobile network distribution and hosting, where competitors or potential competitors have no possibility of matching such an offer.

2212. Another example constitutes increasing the cost of switching to customers with agreements that are binding for a long duration.

2213. These are only a few examples of a great number of dangers that can threaten competition because of the structure of a market in a specific geographic area as described here above and/or behaviour a party to the market which is further described here below. ECOI reminds that in order for it to be possible for ECOI to react to competition problems with obligations, it is required that an incentive and opportunity exist for a party with significant market power to use his dominance, and not that it is demonstrated that he has done this.

2214. More precisely, a company with significant market power on the relative market, and as appropriate on the market for trunk line lease (market 14/2004), can endeavour to make it difficult for those companies that operate in competition with such a company on the relevant wholesale market and downstream wholesale markets, for example on market 3b and market 4, or for potential new competitors in the relevant areas, or even force them out of the market. If appropriate obligations are not in place, there is a risk that such a company could for example arrange its pricing in specific areas in the short or medium term, such that other operating companies would find it difficult to compete, so retailers on downstream retail markets would move their business over to the system of the significant market power operator. If such a party succeeded in preventing a new operator from installing fibre local loops in specific areas, that party could then increase its prices, with consequent damage for consumers in those areas.

2215. It is the opinion of ECOI that parties like Ljósleiðarinn and Tengir do not make the same demands to their customers to refrain from transferring their business to the Mila network as Mila has required of Siminn, which is the country's largest retailer, that it does not transfer its business to Ljósleiðarinn and/or Tengir. This applies even although Siminn made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn fibre network in July 2020, where Siminn began to offer service on the Ljósleiðarinn network towards the end of August 2021. Given that agreement and the above specified wholesale agreement between Siminn and Mila, it is clear that by far the largest proportion of Siminn customers will remain on the Mila electronic communications networks for the lifetime of the analysis. This means that potential Mila predatory pricing on the relevant market in specific areas, which the company's competitors find difficult or impossible to compete with, could create a substantial and serious competition problem in specific areas, or maintain market structure that does not support competition. It is true that Ljósleiðarinn and Sýn have also made a mutual long-term agreement, but Sýn has a much smaller market share of the retail market than Siminn, and is bound to a much lesser degree than Siminn is vis-à-vis Mila. Countervailing buying power of service providers against Ljósleiðarinn and Tengir is thus much greater than the Siminn countervailing buying power against Mila because of the above specified long-term agreement between Siminn and Mila. Nova has for example 1st and foremost operated on the Ljósleiðarinn fibre network, but there is no long-term agreement in force between these parties. ECOI considers it not unlikely that Nova will begin to do business with Mila on the wholesale markets in question during the lifetime of this analysis, and at least some part of

the Nova customers will therefore be on Mila fixed line networks during the lifetime of the analysis, which could mean that Nova business with Ljósleiðarinn could decline accordingly.

2216. A company with significant market power in a specific area can furthermore have both an opportunity and incentive to abuse its position with respect to purchasers in a specific area by excessive pricing or discrimination in pricing. Excessive pricing is a measure of how much higher prices in comparison with the price that would have been achieved in free competition between the companies in question. Excessive pricing at wholesale level can thus lead to higher retail price than would be considered normal, which damages the interests of consumers and could even prevent some of them being able to use the service where the price was extremely high.

2217. Another potential competition problem can be manifested by an electronic communications company that is required to respect obligations on a specific wholesale market, e.g. for transparency, price control or, transparency but not another markets, attempts to move a product offer from a regulated market over to a non-regulated market. This can in some instances be justified on the basis of technological development but can also constitute avoidance of obligations.

2218. Inefficiency in production or service offer, is a problem that can arise when there is no active competition on a market or specific part of the market. When a company is not subject to constraint by competitive pressure, this can lead to the company making little effort in many areas of operations such as with respect to cost restraint, quality requirements, new investments and innovation. These problems have not been conspicuous on market 3a in this country, but they could possibly arise if competitive pressure were to decrease or remain low in specific areas, or with the lifting of obligations in specific areas, particularly where only one operator has an electronic communications network in place.

7.5.2.3 Vertical integration, transfer of market power, bundling of wholesale service, economies of scope and difference in status with respect to trunk line lease

2219. Vertical transfer of significant market power is described as where a vertically integrated company with significant market power at wholesale level or as appropriate in specific areas, endeavours to transfer market power on adjacent wholesale markets to a downstream wholesale market by blocking or working against competitors on downstream markets. Market 3a is a wholesale market and is connected to a number of downstream markets such as the wholesale Market 3b for central access, the wholesale market for high quality connections on the corporate market (previously the market for terminating segments of leased lines, now Market 4) and related retail market or retail markets. An adjacent trunk line market is then extremely important for carrying bitstream service across the country, such as in the case of local loops.

2220. With respect to vertical integration and transfer of market power, one can make divisions into several main categories when considering the relevant analysis of market 3a.

a. Denial of access
b. Pricing
c. Other aspects relating to communications with competitors on downstream markets

d. Tying or bundling of wholesale service
e. Varying economies of scope
f. Difference in status regarding trunk line lease

Denial of access

2221. A company which has significant market power on the wholesale market, depending on circumstances in specific areas, can tend to deny companies that are competing with the company on downstream markets or potential new competitors, access to wholesale service, for the purpose of preventing competition or at least making it more difficult for competitors. Such behaviour can be manifested in absolute denial of access or that access is provided at such unreasonable terms, including pricing, that is tantamount to denial.

2222. ECOI considers that Mila, Tengir Mila, Ljósleiðarinn and Austurljós could have the opportunity and incentive in those areas where they enjoy significant market power, to deny specific electronic communications companies access to market 3a, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b. In addition to providing access to local loops, this could also apply to access to ducts and conduits and to hosting options.

2223. It is clear that Ljósleiðarinn has not provided access to dark fibre (market 3a) on the residential market. Meal only sells a small number of local loops in its fight fixed line networks to external parties, despite obligations relating to this, as electronic communications companies on the retail electronic communications market have in recent years chosen to purchase bitstream connections instead of local loops. This is among other things because of Mila network topology which uses a PON system on the company's fibre local loops. Tengir has on the other hand provided access to dark fibre, among other things to Mila in large volume. DTR no hand only provides bitstream service on its own local loops in competition with companies like Mila that provide bitstream service on the Tengir network. Tengir could therefore have an incentive to deny access or provided on unacceptable rates or with unacceptable conditions.

2224. For denial of access to create significant competition problems, circumstances must generally exist where, as appropriate in specific geographic areas, an electronic communications company on a downstream market does not have the option of using other networks that could provide them with comparable access or could not provide it at acceptable terms. Despite the fact that in this country, fibre networks have been deployed by parties other than Mila, they do not have national coverage and at many locations retailers need to rely on Mila wholesale service. One also has to keep in mind that there are still just over 20% of Internet connections in this country on the copper network, which is only available from Mila. Mila has also taken over operations or purchased many of the local fibre networks that have been deployed in the countryside with grants from the Telecommunications Fund. A denial by Mila of access to connections in those areas on market 3a where the company has significant market power, or at least on market 3b and as appropriate on adjacent markets for trunk line lease (market 14/2004), could therefore have serious consequences for competition on downstream markets, particularly if the operational basis of competitors on the market in question is not assured as a result of the structure of

the market and/or behaviour of Mila. A denial in this case does not only mean a clear denial but also on offer for access at such unacceptable rates or with such unacceptable conditions that can be equated to denial. The same can be said about Tengir and Ljósleiðarinn on those areas where those companies have significant market power.

Pricing

2225. The transfer of market power in the formal pricing can have various manifestations, such as discrimination in pricing, cross subsidies and damaging predatory pricing or excessive pricing. The purpose of such behaviour can be to increase costs for competitors (current and potential), to lower their turnover and put them in a tight position by having a very small difference between the price on the relevant wholesale market on the one hand on downstream markets on the other. Furthermore, a party that has a dominant position on the market for trunk line lease (market 14/2004) can leverage its position on that adjacent market in such a manner that it could have a damaging impact on downstream markets 3a and/or 3b, particularly with respect to connections into an area where the party in question as a monopoly or dominant position with respect to trunk line connections. The pricing of wholesale bundles, such as for example including trunk line transfer, possibly IP-MPLS and goods on markets 3a/b, and possibly mobile network distribution, could cause problems on the relevant wholesale markets 3a/b, particularly if no competitor can match such an offer.

2226. A company with significant market power, as appropriate in specific geographic areas, can have incentives to sell its wholesale service at varying prices depending on who the purchaser is, or the area concerned. The company can for example sell service to specific retailers at a lower price than to other purchasers, for example to priority suppliers in connection with binding long-term agreements. This can lead to costs for competitors of this retail company becoming higher and thus making it difficult for them to compete. When the retail share of such a priority supplier increases, this benefits the wholesale company in question, as the parts supplier have a long-term commitment to purchase a specific minimum volume from the relevant wholesale company, even having provisions for incremental increases in purchase, year by year. There could also be an incentive for such a company to price the service higher in areas where there is little competitive pressure. Such could to some extent be normal if there are cost grounds to support this, but there could also be examples of excessive pricing as a result of lack of infrastructure competition.

2227. Differing prices can in some instances be justifiable, for example if the cost of providing a service differs verifiably, or if discounts are given for fidelity or bulk purchase. If a bulk purchase discount is however based on the number of transactions that could only apply to one or few retailers that have made binding long teen agreements with the wholesale company in question, then this indicates that this is a measure to inhibit competition. ECOI considers that if appropriate obligations are not applied then such wholesale company would have the opportunity and incentive to discriminate between electronic communications companies in pricing on the relevant market and/or on downstream markets.

2228. Cross subsidies can occur between services on Market 3a and downstream markets, i.e. Market 3b and retail markets, and also as appropriate between service and adjacent markets for trunk line lease and on downstream wholesale markets 3a and/or 3b. A vertically integrated companies or company, where the characteristics of vertical integration are a

result of long-term agreements, could have the opportunity and incentive to collect an abnormally high price on Market 3a, and a price that is too low on the basis of cost on downstream markets, if obligations for price control were not in place, or at least an obligation for fair and reasonable pricing. Profit on Market 3 a could then be used to subsidise losses on downstream markets., or as appropriate on adjacent markets for trunk line lease, but as previously stated, Mila sales extremely few local loops in external sales on its fixed line networks and Ljósleiðarinn does not do this at all on its fibre network on the residential market, but it is rather the case that the vast majority of sales take place on market 3b Cross subsidies of this type can impose price difficulties on competitors on downstream markets (current and potential), or on customers operating on the retail market.

2229. Predatory pricing is when a company sells a product or service under a specified cost criterion. Generally, this means prices that are below average variable costs. A company with significant market power on a wholesale market, depending on circumstances in specific areas, can have the incentive to under-price on downstream markets for the purpose of strengthening its position and even of pushing its competitors out of the market, or to hinder the entry of new competitors, depending on circumstances in specific areas. The competition authorities have in a number of instances needed to take action because of damaging predatory pricing by an significant market power operator, for example against Siminn in case 30/2011, see ruling by the at Appellate Committee number 10/2011 where it says, among other things:

> *"The dominance of the appellant on submarkets of the electronic communications market, particularly in the field of fixed line systems and mobile phone service, make it particularly urgent to prevent the appellant from leveraging his strong position there, to create a corresponding position on new or related telecommunications markets that are in development. Otherwise there is a danger that competition will not be allowed to develop naturally on such markets."*

2230. ECOI considers that under cover of a strong market position in specific areas on Market 3a, Mila, Tengir and Ljósleiðarinn could have ability and incentives to use predatory pricing on downstream markets at wholesale level, in those areas where the companies have significant market power and thus have a damaging impact on competition. A company with a strong position on the market for trunk line lease could then leverage that market with predatory pricing on markets 3a and/or 3b or could on the price on the drum line lease market.

2231. With predatory pricing and cross subsidies, normal balance in pricing between Markets 3a and 3b could be distorted and this could result in making competition more difficult for competitors and customers on downstream markets or even drive them out of the market or prevent the entry of new parties to the market. An abnormally small difference in price on 3a and 3b could also direct competitors from market 3a and force them to purchase more service on market 3b or prevent such parties from ascending the ladder of investment and cause them to consider local loop lease, possibly virtual access (VULA)instead of bitstream access. Advantageous wholesale bundles could also create problems when competitors cannot match such offers.

Other elements related to communications with competitors on downstream markets

2232. Transfer of significant market power that is not related to pricing can be in the form of various behaviour that constitutes discrimination between a company's own sales units, customers and those of competitors. For example, this could be a case of delays in negotiations or delivery, irregular demands on counterparties in negotiations, discrimination in quality, discrimination in provision of information or misuse of information from the counterparty.

2233. A company with significant market power in the relevant market or on an adjacent market for trunk line lease (market 14/2004), as appropriate in specific areas, could have the incentive to delay when competitors on the relevant wholesale market or downstream markets or specific customers that operate at retail level, request access to wholesale service. This can create competitive advantage for the relevant company as competitors are slower to react to demand on a market when they do not receive rapid access to necessary wholesale service and can also lead to discrimination between customers at retail level and for example can favour priority purchasers. With such behaviour, a priority purchaser can then gain an advantage known as first mover advantage. It can be necessary to prevent behaviour like this by imposing obligations for non-discrimination and for a maximum time that negotiations and the delivery of service, to mention some.

2234. In some instances, companies with significant market power make unreasonable demands on wholesale purchasers who are competitors on downstream markets or that operate at retail level. Such demands can for example relate to bank guarantees, minimum number of transactions or demands for unnecessary information, which delay negotiations.

2235. This can also be a case of discrimination in quality between the service that a company's own departments receive on the one hand competitors or customers operating at retail level on the other, e.g. with respect information on and reactions to faults.

2236. Problems related to exchange of information between companies can in the first instance be such that a wholesale company with significant market power, as appropriate in specific areas, provide competitors or specific retail companies for example priority purchasers, better and more prompt information before others are informed, for example with respect to development plans and upgrades of technical equipment, including increased performance capacity. This could mean that competitors and/or specific retail companies become slow to react to changes and miss opportunities to gain or retain customers that are interested in purchasing the newest service solutions on the market. Such a company's treatment of information from customers can furthermore create competition problems. When making wholesale agreements, the wholesaler receives various information concerning the operations of the wholesale purchaser, their plans and estimates of the number of users. A company could have incentives to disseminate such information in some manner to other company departments or for example to priority purchasers operating at retail level, which could make it easier for them to work against competition. It is clear for example that Mila handles almost all technical service for Siminn in connection with service on the wholesale markets in question and is for example some kind of intermediary for the implementation of the Siminn agreement with Ljósleiðarinn and would be in the same role also if Siminn should make a direct agreement with parties like Tengir and Snerpa.

Tying or bundling of wholesale service/ economy of scope

2237. Tying bundling of wholesale service and varying economies of scope at wholesale level can cause competition problems, particularly on market 3b, but also on market 3a. N section 7.5.3.3 there is detailed discussion on this, and reference is made to this discussion mutatis mutandis.

Difference in status regarding trunk line lease

2238. Up to this point in time, Mila has been considered the only company with significant market share on wholesale markets 3a and 3b, see ECOI Decision no. 5/2021. With the review of the market analysis published in this document, Mila is designated as having significant market power on markets 3a and 28 municipalities, Ljósleiðarinn in one municipality and Tengir in 8 municipalities. On wholesale market 3b, Mila is designated as having significant market share in 32 municipalities and Ljósleiðarinn in one municipality.

2239. In addition to the above specified wholesale markets 3 a 3b there are markets for leased lines that provide data transfer service between node points/technical spaces in trunk line network (trunk line segments of leased lines) and from node points/technical spaces two demarcation boxes are end users (termination segments of leased lines). Trunk lines are the necessary carrying layer for electronic communications connections for it to be able to provide service on the relevant wholesale markets 3a and 3b across the whole country. In this connection it should be stated that Mila has also been designated as having significant market power on the relevant wholesale markets for electronic communications in this country, see for example the leased line market, both trunk line segments and termination segments, pursuant to PTA Decision no. 8/2014 and number 21/2015. ECOI will review the above specified market analysis for both trunk lines and termination segments of leased lines in the year 2024.

2240. It is not inconceivable that it will be possible to transfer market power on the market for trunk line lease (market 14/2004) to downstream wholesale markets 3a and/or 3b.

2241. A company that is in the strongest position on the relevant trunk line lease market can enjoy an advantage when it comes to deployment of fibre networks in individual areas in the countryside and can thus have an impact on the competitive position on market 3a in specific areas. This could furthermore apply to operation of bitstream equipment and could thus also have an impact on the competitive position on market 3b in specific areas.

2242. The market analysis decision currently in force on the above specified trunk line lease market dates back some years, see PTA Decision no. 21/2015 from 12 August 2015. Review of this market analysis will be made in 2024 as previously stated but work on this has suffered significant delays because of work on the analysis currently being elaborated here, and on the ECOI decision on the same markets that concluded with ECOI Decision no. 5/2021.

2243. The conclusion of the above specified market analysis of the trunk line lease market from 2015 was to designate Mila as having significant market power across the whole country, with the imposition of appropriate obligations on the company, i.e. access obligation, non-discrimination obligation, transparency obligation, obligation for separation of accountancy, obligation for price control on obligation for cost accounting.

2244. The service market was considered to comprise various types of communication protocols and transmission media, see ATM, IP-MPLS, MPLS-TP, Ethernet, Ethernet VLAN, SDH/PDH, wavelength division multiplexing (WDM, CWDM og DWDM), dark fibre, copper and wireless connections. This was the market for transfer capacity which is sold to electronic communications companies for the purpose of interconnection of their networks and distribution locations. There are normally telephone exchanges between access networks and trunk lines in Iceland which creates a physical distinction between these two types of lines. Trunk lines were most often fibre cables, but traditional telephone lines (copper) and wireless connections could also belong to the market if they were used as trunk lines. With respect to communications protocols development had tended towards increasing use of IP-MPLS solutions.

2245. ECOI consider that to be no reason to segment geographic markets on the relevant market and therefore deemed the geographic market to be the whole country. Competitive conditions[392] were not sufficiently heterogeneous between individual geographic areas to justify dividing the country into geographic markets and in addition to this, the boundaries in network distribution were unclear. In addition to having a dominant position in the areas where there was no competition, Mila still had a very strong position in those areas where another network was also on offer. It was thus clear that Mila was designated as a company with significant market power on all the geographic markets that might be segmented.

2246. As market 14/2004 was not in the ESA Recommendation from the first one in 2004, ECOI evaluated whether it still fulfilled the conditions required for it to be susceptible to ex-ante obligations (the Three Criteria Test). The ECOI conclusion was that the market still fulfilled these conditions. The situation in this country was that on many transfer routes, there was only one service provider. ECOI considered there to be significant and non-transitory entry barriers on the market and that active competition was not expected within the coming years. Mila still had an overwhelmingly dominant market share (70- 80%),[393] whether measured by revenue from trunk line lease or by number of active connections.

2247. In a summary of status on the relevant market in 2015, it was stated that parties to this market were in very unequal positions. Mila operates its own network with national coverage and offers a comprehensive network with a service offer that is both deep and broad. Although the Orkufjarskipti network reached across regions of the country it was 1st and foremost developed to serve power stations and electricity distribution stations according to the needs of the owners of the company. Orkufjarskipti operates on the relevant market and leases dark fibre to those who require this, if there were any available free threads that the company did not plan to use for its owners. Those who lease this capacity must then invest in and operate their own fibre endpoint equipment and network switches at the Orkufjarskipti connection points and they must procure connections to the connection points which were in most instances at remote locations. The Orkufjarskipti market share was very small on the relevant market. Sýn leased one thread in the NATO circular fibre line and it leased threads and connections from other service providers outside the scope of the circular line. Sýn

[392] The most important issues in the opinion of the ECOI were comparable prices and the large Mila market share, whether one looked at the country as a whole or the Capital City Area.
[393] Calm in the prior analysis of the relevant market from 2007, Mila had 85-90% market share on the relevant market.

provides certain value-added features in its network operations, largely in the form of active network equipment and access to communication protocols, for example IP-MPLS communication protocols. As Sýn based its network almost exclusively on the core networks of other network operators one must consider the company's involvement in the relevant market to be rather limited. Ljósleiðarinn had made progress, but it was limited to the service territory of its owner, OR, and did not have clear plans for further distribution outside this area.

2248. It was then stated that because of their ownership, Orkufjarskipti and OR were bound by the provisions of Article 36 of the Electronic Communications Act no. 81/2003 among other things with respect to a ban on subsidising of electronic communications by operations of the relevant energy companies enjoying concessions, which would limit the competitive latitude of the companies in question, for example with respect to participation in price competition. To a certain extent this also applies to Tengir in the Eyjafjörður area. Operations of competitors of Mila on the relevant market were subject to various limitations. The number of companies on the market were thus not entirely indicative of the state of competition on the market.

2249. It is now 8 years since the above specified PTA market analysis from 2015 was published. Various things have happened on the relevant trunk line lease market during that time, particularly in the most recent times, where Ljósleiðarinn has among other things acquired access to two NATO threads, one of which was formally leased to Sýn, and in addition to this CA endorsed with its Decision no. 37/2023 dated 29 September 2023, the Ljósleiðarinn purchase of the Sýn trunk line network.

2250. It is appropriate to give an account of the above specified CA decision which provides insight into the current status on the relevant trunk line lease market, and as previously stated, ECOI will analyse the market in the year 2024.

2251. Mila's position has long been stronger on the leased line markets in question than on the relevant wholesale markets 3a and 3b. On the leased line market, no company other than Mila has been able to offer access to trunk lines based on his own fibre across the whole country, but the cases rather been that there have been local trunk line's in the operating territories of the parties in question that offer service on markets 3 a 3b. Those parties that mainly operate on the leased line market and that all fibre networks are Orkufjarskipti, Ljósleiðarinn and Tengir, but none of these companies has a fibre trunk line network equal in scope to the Mila trunk line network. One can also point out that the Mila trunk line network is considerably larger than the network that Ljósleiðarinn will have at its disposal subsequent to the lease of two threads in the NATO cable on the basis of an auction by the Ministry of Foreign Affairs. One can furthermore point out that the Sýn trunk line network recently purchased by Ljósleiðarinn, see CA Decision no. 37/2023 *Ljósleiðarinn ehf purchase of the Sýn hf trunk line network* is entirely based on carrying layer (fibre threads or trunk line connections) being leased from a third party.

2252. Despite the Ljósleiðarinn purchase of the Sýn trunk line network and the lease of two NATO threads, the company is dependent on Mila for service to enable use of the infrastructure in question. In this connection one can mention that subsequent to the conclusion of the NATO auction, Ljósleiðarinn commenced negotiations [...]. The equipment

is mostly in hosting facilities owned by Mila (with the exception of Hvolsvöllur in Rangárþing eystra, where the equipment is in a connection facility leased from Orkuveitan). All work on the NATO fibre and in internal cabling + electricity in Mila exchanges is done by Mila which means that work progress is dependent on Mila.

2253. From the above we can see that the Mila position is as before, extremely strong on the trunk line market, despite the Ljósleiðarinn leasing of two threads in the NATO cable, where 5 threads are owned by Mila. Although Ljósleiðarinn has an agreement with the Ministry of Foreign Affairs for the renting of 2 fibre threads, there still remains the same unsolved project, to move the Sýn trunk line network over to the Ljósleiðarinn DWDM system without causing disruption to operation of the service provided today through the Sýn trunk line network. This project is much more demanding for Ljósleiðarinn than Mila, as Mila does not have at its disposal the same resources at a national level as Mila, such as fibre capability on the national circular cable (5 threads versus 2), trunk lines from the national circular cable used by the Sýn trunk line network, and the fact that Ljósleiðarinn does not have an IP/MPLS system with national coverage that could be used as a step in the direction of a final solution.

2254. In the above specified CA Decision no. 37/2023 Ljósleiðarinn *ehf purchase of the Sýn hf trunk line network*, it was stated that on the wholesale market for trunk line segments of leased lines, Mila is the largest with 65-70% share in 2022, Ljósleiðarinn with 15-20% share before the merger and other parties, i.e. Orkufjarskipti, Sýn, Tengir and Síminn with under 5%. Despite the fact that CA is referring above to the whole country, the Authority gathered data on the market status of wholesale companies in trunk lines, by specific areas. In the gathering of data all revenue by municipality, both Ljósleiðarinn and Mila could not provide CA with revenue information on the trunk line markets with such a breakdown. CA: information and in the case, data was available on development and distribution of trunk and backbone networks of the main competitors on the market, including the number of node points or connection locations in trunk line networks and their location. It was stated that the number of Mila node points we are close to 600 in total across the whole country and they are located in technical spaces that are variously owned or leased by Mila. By comparison, node points or connection locations in Ljósleiðarinn network are fewer than Mila connection points. Ljósleiðarinn connection locations will however increase in line with company development and activation of two NATO threads progresses during the coming months or years.

2255. In the CA decision, the share of companies was also examined on the basis of external revenue from IP-MPLS data transfer network alone. Mila was the largest in 2022 with 75-80% share, Ljósleiðarinn had 10-15%, Sýn had 5-10% and Siminn had 0-5%.

2256. It was the CA assessment in Decision no. 37/2023 that Ljósleiðarinn will, subsequent to taking over the Sýn trunk line network, continue to be subject to considerable competitive restraint from parallel or adjacent Mila trunk lines. With all of the above in mind, one can see that the Mila position on the trunk line marker is significantly better when one compares it with those of the company's competitors, and this advantageous position undoubtedly improves the position of the company on the relevant wholesale markets 3 a 3b.

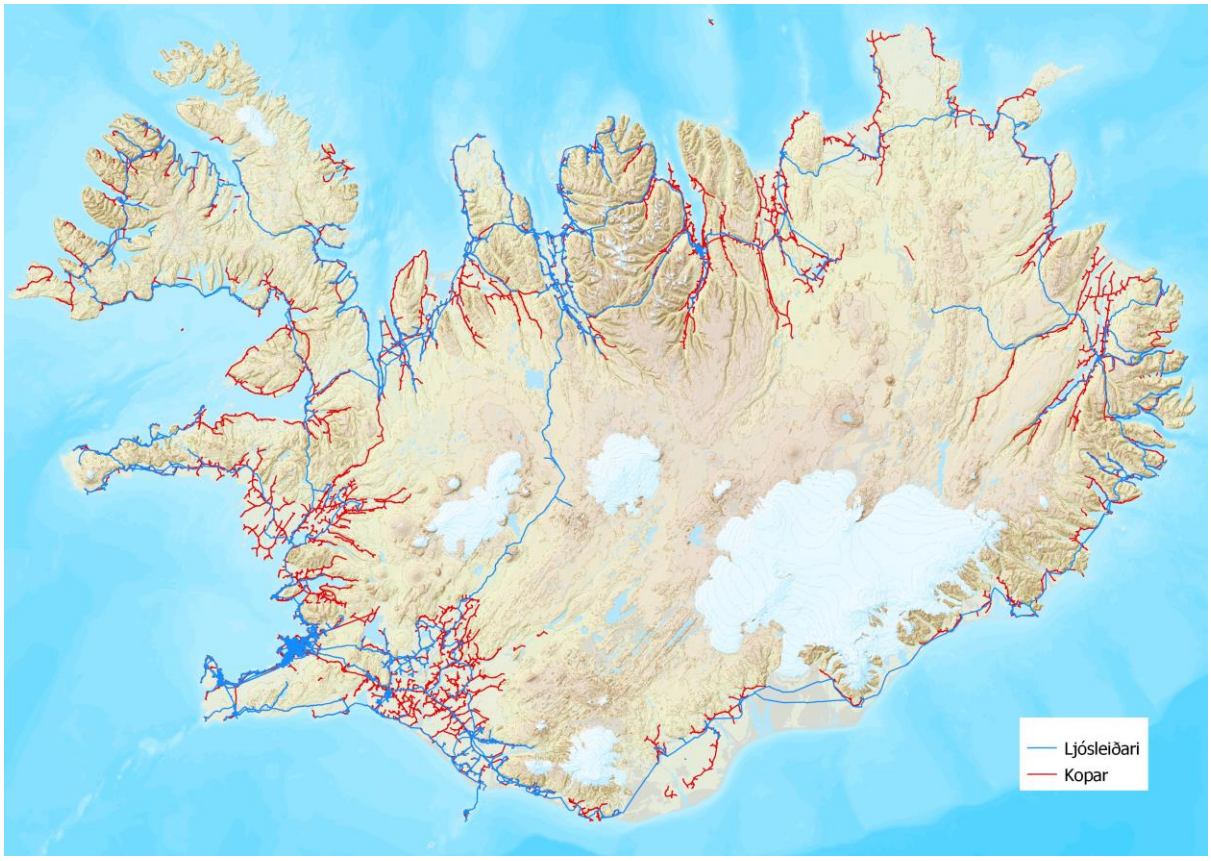
2257. In the figures specified below one can see clearly that the Mila position is much stronger than that of the competitors when it comes to national coverage of an electronic communications network and position.

Figure 7.1 Ljósleiðarinn fibre network



2258. In the above specified figure one can see the Ljósleiðarinn fibre network, where one can also see a network that was previously owned by Líf í Mýrdal in South Iceland, which was purchased by Ljósleiðarinn. As one can see, the network is mostly limited to the south-west corner of Iceland.

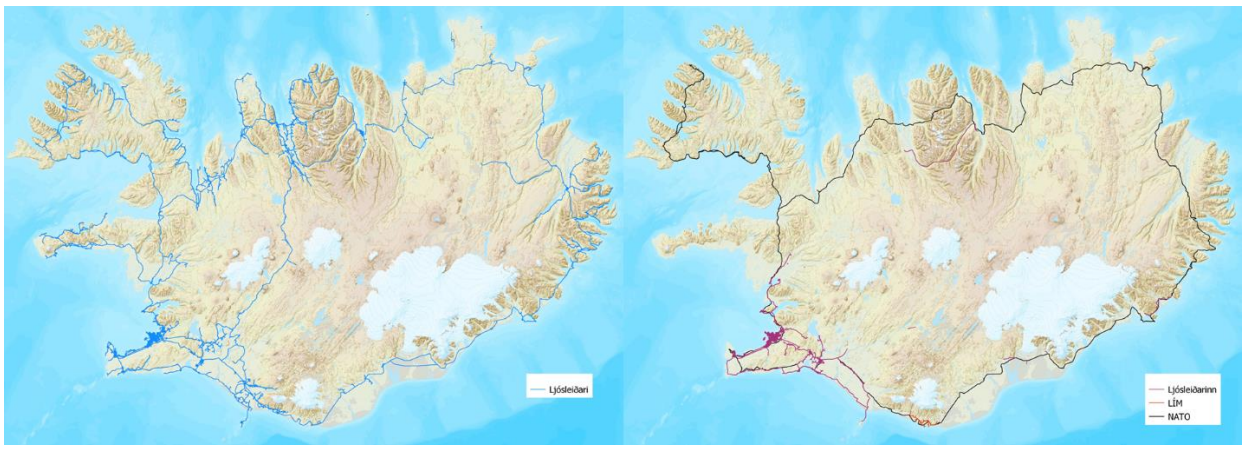
Figure 7.2 Mila copper and fibre networks



2259. As can be seen in the above specified figure, the Mila network is much more extensive than the Ljósleiðarinn fibre network. Given Mila plans for decommissioning the copper local loops, one can expect that the Mila copper network will be finally decommissioned at the end of the lifetime of this analysis. Mila also has wireless connections in its trunk line network door

2260. When one considers the Ljósleiðarinn has reached an agreement on lease of two threads in the NATO cable and when one compares this with the Mila fibre network, one can see that the scope of Mila fibre network is national level is much greater than that of Ljósleiðarinn.

Figure 7.3 Mila fibre network compared with Ljósleiðarinn fibre network, having taken into account the NATO fibre cable



2261. When Ljósleiðarinn purchased the Sýn trunk line network, Ljósleiðarinn was not purchasing fibre as the Sýn network was based on leasing fibre or connections and also on having control of one NATO thread.

2262. The parties the lease fibre from others also need to lease hosting facilities that are most likely to be owned by the same party that owns the fibre. The considerable difference in the number and distribution of technical space owned by network operators.

2263. In the following figure one can see the number and location of Ljósleiðarinn technical spaces.

Figure 7.4 Ljósleiðarinn technical spaces[...][394]

By comparison one can see the following figure showing me the technical spaces which are much more numerous and located widely around the country.

Figure 7.5 Míla technical space[...][395]

2264. The very substantial difference in the positions of the companies is reflected in these figures, but it should however be noted that some of Mila's technical spaces are not related to the company's fibre network, but they are rather for wireless connections. In addition to this, some of Mila technical spaces are only used for transmitters.

2265. When Ljósleiðarinn uses its access to the two NATO threads that the company has leased, Ljósleiðarinn in most instances needs to lease access to Mila hosting and is thus dependent on that company for access to such hosting. In order for Ljósleiðarinn to be able to offer bitstream service in competition with Mila in the countryside, the company is therefore dependent on Mila for access to technical spaces and at many locations also for

[394] Owners of technical spaces have not authorised publication of these illustrations. These are technical spaces that the party in question controls and in some instances are owned by third parties.
[395] It is appropriate to point out that the importance and size of Mila technical spaces varies greatly, from being timber sheds in uninhabited areas which contain transmitters to being very large technical halls that hosts a large number of items of sensitive equipment.

access to fibre or connections. Mila could thus have an incentive to limit such access for the company's competitors.

2266. If one considers incentives for companies to invest in fibre deployment in the countryside, it is clear that it is much riskier to embark on such investments if the connection with such a local network is dependent on leasing infrastructure from an external party. The agreement on lease of NATO threads is limited to a duration of 5 years, which can then be extended for 5 years and possibly again after that. There is precedent for lease of NATO threads not being renewed, which makes this a risk factor. Furthermore, the NATO thread does not reach all urban locations, and in such cases Ljósleiðarinn would need sometimes to rely on access to fibre or connections from a competitor, with attendant costs and a weaker position. It is therefore clear that it would be a greater risk for Ljósleiðarinn to embark on fibre roll-out in the countryside than for Mila.

2267. In the opinion of ECOI, the location of technical spaces of network operators provides a certain picture of their operational territories and for this reason pictures of technical spaces of TT, Snerpa and Orkufjarskipti are shown. It is worthy of note that Orkufjarskipti participates only to a very small degree in the local market and almost exclusively on the trunk line market, and it is the main objective of this company to serve the electronic communications needs of energy companies.

Figure 7.6 Tengir technical spaces[...]

Figure 7.7 Snerpa technical spaces[...]

Figure 7.8 Orkufjarskipti technical spaces[...]

7.5.2.4 Further on competition problems related to market 3a in this country

In general, on status of the market

2268. In the previous sections there are descriptions of the main problems likely to arise if no obligations are in force on Market 3a all Mila, Tengir and Ljósleiðarinn in those areas where the companies have significant market power. In addition to these problems one can identify various aspects of the real situation today which may be categorised as competition problems on Market 3a and related markets, both with respect to market structure and to behaviour of parties to the market. With respect to potential problems resulting from market structure, there was discussion on difference in position that exists between Mila on the one hand other network operators on the other hand with respect to economies of scope and possibilities for bundling wholesale service, and also with respect to access and control of leased trunk lines that can have an impact on downstream wholesale market, including market 3a. Then a number of cases will be described that have arisen in recent years on the relevant wholesale markets and downstream retail markets, some of which have ended with decisions by ECOI (previously PTA) that can be categorised as competition problems.

2269. The market for local access in this country is characterised by duopoly in the most densely populated areas and buy anything from monopoly to extreme oligopoly in many geographic areas in the countryside. Only one company, i.e. Mila, controls an access network with close to national coverage, and in addition it has a comprehensive, fully developed trunk

line lease network and has dominance over its competitors with respect to connections into the various areas. Competitors are not operating on all locations on markets 3a 3b in the country, but they rather operate, each in their own territory, which can cover a number of municipalities. Ljósleiðarinn and Tengir now operate outside the utility service territory in of their owners, but only in specific geographic areas. There are not many examples of two parties competing on market 3a and are many locations outside the main urban locations, Mila is the only party on the market. Mila had about 49% market share on market 3a at national level at the end of 2022 and has thus the highest share of the relevant market if one considers the country as a whole. Ljósleiðarinn is however not far behind, but the company only operates locally in the south-west part of the country as the situation is today.

2270. What matters however most is that Mila and Tengir market share is very high in those areas where those companies are deemed to have significant market power, and in addition to this, parallel coverage of fixed line networks is almost zero or very little in the relevant areas. Ljósleiðarinn market share is also very high in the area whether companies deemed to have significant market power and parallel coverage of fixed line networks is also high.

2271. Though the minutia has decreased and a national level since the last analysis was made in 2021, Mila dominance is still considerable on the relevant market if one considers the country as a whole and large and many areas. Is also the fact that Mila is in the best position with respect to trunk line lease connections across the country and in the various areas. The company has recently been making great advances in development of fibre networks, particularly in urban areas, but also by purchasing or by long term leasing of fibre networks in country areas. The market is characterised widely by substantial entry barriers where it has proven rather difficult for new companies to establish themselves, and it took a long time for Ljósleiðarinn and Tengir and costs were high during the last 20 years or so and is also localised. While companies like Ljósleiðarinn and Tengir have over a long period of time widened their fibre network to households in their operational territories, Mila emphasised upgrading its copper local loops until just a few years ago when the company launched a major effort in deploying its own fibre network to households and companies in 2016. After the sale of Mila to Ardian was finalised at the end of September 2022, the company has significantly increased investments in fibre networks and its deployment plans for the coming years an ambitious, while they are much more modest with Ljósleiðarinn and TT. As the market is very small, with respect to the number of end users compared with most other domestic markets in the EEA, while the country is at the same time sparsely populated in the European context, new investments are risky and there are few who have the capability of developing an access network with the necessary trunk line connections into the various areas in competition with Mila, and furthermore, this takes a very long time. It is therefore likely that the Mila dominance in market share will remain in place, at least for the time being, particularly in specific geographic areas, and there are certain indications that this dominance could strengthen even further in the lifetime of the analysis, for example if the country were possibly to gain Nova as a customer which is not unlikely during the lifetime of this analysis, as that company is not bound by agreements to a specific service provider wholesale level for an extended period of time as is the case with other companies on the retail market.

2272. In recent years, Ljósleiðarinn has continued investing in its fibre network, particularly with co-investment with Mila, and the service area of this company on the relevant market now covers a large area in south-west Iceland all the way east to Mýrdalshreppur in South

Iceland. Ljósleiðarinn had about 43% share of the relevant market at national level at the end of 2022 and up to 70% in Seltjarnarnes. Then Tengir has about 6% market share at national level and other local players jointly have less than 1% share.

2273. The Mila market share has decreased from 56% since the last analysis to 49% at the end of 2022 and the company still has the highest share on the market if one considers the country as a whole. As previously shown, there are various indications that this development could stop or even reverse a little during the lifetime of this analysis. So, these average proportions do not give a true picture of individual geographic markets in the case, and Mila has a dominant market share in many geographic areas and is even the only operator in specific areas. The incentive for Mila to sell products that have not been bound by obligations does not appear to have been strong in recent years.[396] One can however also note that certain types of service are offered by Míla that are not subject to obligations. Mila has the most widely distributed network in the country and electronic communications companies are dependent on access to it if they wish to provide services throughout the whole country. One must assume that Mila incentives have changed to significant degree after the ownership connection was severed between Siminn and Mila, but one must however reiterate what has previously been stated about the long-term wholesale agreement between Siminn and Mila and about the position of CA and ECOI that there is still what could be equated to vertical integration between the companies or at least very strong common interests. In addition to this Mila has most economies of scope, most deployment across the country, including trunk line network and opportunities to offer attractive wholesale bundles. Development on the market has therefore not given a reason to assume otherwise than the there is still a need for obligations in specific areas on the relevant market, and not only vis-à-vis Mila but also vis-à-vis Tengir and Ljósleiðarinn in specific areas.

2274. Vertical integration in the Siminn Group was previously conducive to limiting active competition in a variety of ways, and as is stated above, the ownership ties between the companies were severed at the end of September 2022. On downstream markets the Siminn Group also had a large market share, and this applied both to market 3b and the retail market for Internet connections. The Siminn Group also had dominance on the adjacent market for trunk line lease. In addition, Siminn has had a dominant position on the retail market for bundles, where electronic communications services and TV services are bundled together. Markets strength on Market 3 a afforded the Group various opportunities and devices to protect its advantage quite effectively on downstream markets, but this could also work in the other direction such that the strong position of Siminn on retail markets, including for line charges, which in recent years has among other things manifested itself in great success of the Heimilispakki bundle, directed customers to the Mila access network, which presumably slowed down the dropout from the Mila network, despite a very substantial increase in deployment of fibre by independent operators since 2014. The Siminn market share on the

[396] There are various examples of how Mila has not acceded to requests for access that the company considered not to be covered by obligations in force. There one can among other things mention the PTA Decision no. 34/2010 and in that case, Mila denied a Vodafone (now OSS) request for facilities for the NATO fibre, among other things because Mila considered that access not to be covered by obligations in force. PTA Decision no. 28/2011 concerns denial of access to dark fibre in trunk line cables where Mila considered that it was not obliged to do so according to obligations in force. One could also mention Decision no. 34/2014 regarding a Snerpa access request to Mila street cabinets and Decision no. no. 15/2020 on facilities for demarcation boxes in technical spaces.

retail market has not decreased much since 2014 if one only considers fixed line network connections. Various aspects of the behaviour of the former Siminn Group with respect to vertical integration were examined during the past years.

2275. Although the Siminn Group was a thing of the past subsequent to the Ardian purchase of Míla at the end of September 2022, there are still as previously stated, very strong common interests and commercial connections between the company, with the addition of the fact that CA and ECOI consider that an impact similar to vertical integration was still in place between the companies. According to a long long-term wholesale agreement between the companies, Mila is Siminn's priority supplier for those wholesale services in question on the relevant wholesale markets and Siminn must purchase at least 80% of its total connections from Mila. Mila competitors therefore cannot compete on this share for the coming 15 to 20 years, which is considered to be about 35% of the total market. Siminn does not have bitstream equipment at its disposal and Ljósleiðarinn is the only network operator apart from Mila from which Siminn has purchased bitstream service up to this point in time and it is not expected that this will change. This means that outside the operational territory of Ljósleiðarinn on the local loop and bitstream market, Siminn only purchases from Mila. It is worth noting in this connection that Siminn has significant market power in retail in the countryside from which Mila benefits because of the agreement with Siminn. It is clear that Siminn latitude to purchase 20% of connections from other network operators is only used in part, at least so far. Mila has thus clear interests in maximum success for Siminn on the retail market. In this way they could still be an incentive with Mila to favour Siminn at the cost of other retailers, though this incentive is by the nature of things significant less than when the companies were within the same consortium, and in addition to this such an incentive could diminish even more as time passes.

The impact of the strong Mila position on operations of smaller local networks

2276. Mila is as previously stated, the owner of the largest trunk line and access network in the country and the only one which reaches nearly all users. The network was initially based on copper local loops, but in 2016 Mila commenced rapid and extensive fibre roll-out and steadily increased the company's fibre local loops. Mila fibre local loops numbered about 120,000 at the end of 2022 and there is continued vigorous development planned by the company for the coming years and 2023, according to the company, will set an absolute record in such investments. At the end of 2022, Ljósleiðarinn fibre local loops were about 120,000 and Mila fibre local loops where for the first time more than Ljósleiðarinn fibre local loops, which had been rolling out its fibre network for more than 20 years.

2277. During the last years there has been development of local fibre networks at many locations in the countryside. This development is broadly speaking based on two scenarios, on the one hand there are companies owned by utility companies, entirely or partly, that implement the projects, such as Ljósleiðarinn and Tengir, or they are state funded networks in sparsely populated communities. In addition to this, municipalities and/or local inhabitants have in some instances deployed a fibre network without state aid[397], such as Snerpa in the

[397] It is appropriate to note that rules for state support also apply the networks developed by municipalities, even where they receive no support from the state.

West Fjords, Austurljós at Egilsstaðir and surrounding area and now finally Eygló in the Westman Islands.

2278. Ljósleiðarinn operates its own network mostly independent of Mila, but it is worthy of note that many of the smaller networks are not in direct competition with Mila but rather cooperating with the company and in a large number of cases, Mila has purchased their networks or leased long-term, as Mila is in the best position to do this with its powerful trunk line network with national coverage. In addition to this, Mila has to a considerable extent deployed fibre networks in rural areas that have enjoyed state support. It seems to prove difficult for the owners of the smaller networks to operate them and their active equipment, which is where Mila has entered in a strong position. These very numerous networks are like islands where the parties in question do not have trunk line connections from them to other locations. Mila is responsible for the operation of GPON connections on over 23 such networks. Mila has also deployed fibre networks that have been supported with grants from the state or from municipalities or house acquired ownership or long-term leasing of 29 additional networks. This is a total of 52 local networks. This has not been an option available to Ljósleiðarinn because of a lack of its own trunk line connections outside the south-west part of the country and according to the company because of for disadvantageous terms offered by Mila for such trunk line connections. Now the company has acquired access to 2 fibre threads in the NATO cable, but the company still lacks connections from there to various urban nuclei widely across the country, which involve distances of often tens or even hundreds of kilometres. This with the Ljósleiðarinn purchase of fibre networks and electronic communications systems from SS, which was finally completed with the CA endorsement on 29 September 2023, the company gained access to small fibre networks in country areas in South Iceland, and this progress is largely based on access to a Mila fibre network, as Sýn did not own the fibre network on which the Sýn network was based. In 2023 Ljósleiðarinn then purchased the Líf í Mýrdal network in Mýrdalshreppur. As has been stated here above, the relative position between Ljósleiðarinn and Mila with respect to access to and control of trunk line connections is huge.

2279. Tengir purchased a network initially owned by Skútustaðahreppur, a municipality that merged with Þingeyjarsveit in 2022, in addition to operating bitstream equipment on the small Tjörneshreppur network, where connections number a few tens. Tengir also purchased a local network in Vopnafjarðarhreppur from Vopnafjarðarljós. The relative position between Tengir and Mila with regards to access and control of trunk line connections is also very substantial. For example, Tengir does not control its own trunk line connections between its operational territory in Northeast Iceland the Capital City Area, where retailers need to purchase access to such connections from 1/3 party, including from Mila which owns and operates the most powerful and widely distributed trunk line network in the country. Nor does Tengir control its own trunk line network between all of the company's access networks.

2280. It could be that is not realistic for owners of the smallest networks to take part in their operation and to invest in active equipment and other necessities to provide retailers and thus consumers with the necessary service. Such a party also lacks control of trunk line connections to locations outside its own territory. It could thus be that in many instances there are no possible operators available other than Mila, among other things because Mila operates the most unified and powerful trunk line system, which also has national coverage. This demonstrates the strong Mila position as the only company in this country that operates

access and fully developed trunk line networks with close to national coverage. This development is also conducive to strengthening Mila's position on the local loop market and results in new investments in smaller networks, in many instances not leading to increased competition on the market to any significant extent, and in addition to this these are few connections of the total number of connections in this country.

Reluctance of the Mila and Ljósleiðarinn to provide specific types of access

2281. As stated here above, a company with significant market power on a wholesale market, in some cases in specific areas including on an adjacent market for trunk line lease, can have a tendency to try and transfer this power to a downstream market by refusing access to a specific wholesale service to specific clients or competitors. Instances have arisen where access is refused or delayed or made difficult in some manner despite obligations on access being in force.

2282. In this connection one can for example mention that it proved extremely difficult for some time for companies to be granted full access to the Mila VDSL system (which was then in fact owned and operated by Siminn), during the years 2010-2012. For example, Vodafone (now Sýn) repeatedly requested access to VDSL with multicast on Access Option 1 for an extended period of time, but Mila had only offered Internet migration to Access Option 3 in VDSL. A PTA (now ECOI) decision was needed to require the Group to desist from such behaviour, see PTA Decision no. 38/2012. With such access Vodafone could offer its customers access to the company's IPTV system through Mila networks. More specifically, Mila for some time did not offer access to multicast for parties other than Siminn, nor access to Access Option 1 except with major and detailed conditions, among other things with respect to a projection on the number of customers at each location.

2283. In addition to this, companies failed year after year to have Siminn IPTV service over their own bitstream system and it is very important for network operators to be able to offer IPTV service on their network, as such TV service has long been extremely popular among consumers in Iceland, though the importance of this has somewhat diminished with increased streaming services. The importance of IPTV distribution is however still high on the national electronic communications market. Ljósleiðarinn had repeatedly and over long periods of time, offered Siminn bitstream access for Siminn to use for its IPTV service on for other service, e.g. Internet service. It was then not until July 2020 that Siminn finally made an agreement with Ljósleiðarinn on such access. Síminn began offering its service on the Ljósleiðarinn network in August 2021. Despite the agreement in question, it is clear that by far the largest proportion of Siminn customers will remain on the Mila network throughout the lifetime of the analysis. Sýn has also been in dispute with Siminn on access to material owned by Siminn for distribution on the Sýn IPTV system since the autumn of 2015, but has made no progress. At the same time, Siminn has strongly emphasised the bundling of electronic communications and TV service with TV content (Heimilispakkinn), with good results from the time the policy was adopted in the autumn of 2015.

2284. Access to the Mila VDSL system is still important in many parts of the country, as the reality is that in the areas where Mila has developed its VDSL service and where another network based on fibre is not in place or only to a limited degree, there is no other option for fast broadband access. Other bitstream providers that used to have their own ADSL system

in the area therefore lost a large number of the customers in bitstream service in a few months after VDSL was rolled out in the area in question during the period 2011-2015. For such parties fit was made impossible to upgrade their systems from ADSL to VDSL and compete with Mila in provision of bitstream service, but they rather had to move their retail business over to wholesale purchase of bitstream on Mila VDSL systems as no other infrastructure company was operating there, and thus moved down the investment ladder.

2285. With respect to other disputes on access, in connection with Mila VDSL roll-out one can mention the PTA Decision no. 34/2014 where the PTA considered that Mila had not had the right to deny Snerpa certain specific inter-cabinet connections in Holtahverfi in Ísafjörður and Mila was considered to have breached the non-discrimination obligation by not providing Snerpa with adequate information and instructions with regards to VDSL - roll-out in the district. The PTA considered the Snerpa access requirements in some instances not to be fair and normal but instructed Mila to resolve that part of the access needs by offering VULA access. From the time that the Mila reference offer was revised with respect to VULA access, no player has seen an advantage in using it, as the pricing is such that economy of scale needs to be so high for it to be realistic and there are few if any such players in this country with the exception of Siminn, but Siminn does however not purchase such access from Mila.

2286. As previously stated, Mila incentive to refuse or complicate access to its networks is significantly less now than when the company was part of the Siminn Group. Though the Siminn Group was a thing of the past subsequent to the Ardian purchase of Mila at the end of September 2022, there are still as previously stated, very strong common interests and commercial connections between Siminn and Mila, and in addition to this CA and ECOI consider that impact of vertical integration between the companies still exists. Time will tell the competitive impact that this may have. According to a long-term wholesale agreement between the companies, Mila is Siminn's priority supplier with respect to the wholesale services in question on the relevant wholesale markets and Siminn must purchase at least 80% of its total connections from Mila. It is clear that this latitude is only used in part, at least up to this point in time. Mila has thus clear interests in maximum success for Siminn on the retail market. In this way they could still be an incentive in place for Mila to favour Siminn at the cost of other retailers, though this incentive should by the nature of things be less than when the companies belonged to the same group.

2287. Throughout the years, Mila (previously the Siminn Group) made determined efforts to acquire dark fibre from Ljósleiðarinn (access to market 3a), like that being offered by TT. The Ljósleiðarinn business model has from the start been based on providing only access to bitstream service over the company's fibre network, except two larger parties on the electronic communications market. It cannot be seen that retailers have on the other hand requested such local loop access from Ljósleiðarinn, at least not in recent years, as retail companies have been moving down the ladder of investment and choose to spend less on investments in fixed line service and to rather purchase first and foremost bitstream access from network operators. As has been previously stated, almost all Mila external sales on fixed line network connections take place on market 3b. One result of this is that Mila has from the year 2016, conducted vigorous fibre roll-out, among other things in those areas where Ljósleiðarinn operates, and parallel fibre network deployment is therefore generally quite substantial in the most densely populated areas, and is increasing rapidly.

2288. ECOI does therefore not see this as a competition problem on market 3a or on downstream markets, but quite the contrary, as infrastructure competition creates more effective and sustainable competition than competition in service. Obligations on the relevant wholesale markets should among other things support the deployment of high-capacity networks on commercial terms, see paragraph 1 of Article 4 of the regulation on market analysis in the field of EC. ECOI cannot see that obliging Ljósleiðarinn to provide access on market 3a is in accordance with proportionality, more that is conducive to increasing competition on electronic communications markets or to supporting the deployment of high-capacity networks are thus competition in infrastructure. For this reason, access to the Ljósleiðarinn fibre network on market 3b should be adequate to support competition on downstream retail markets in the area where Ljósleiðarinn is considered to have significant market power. In the opinion of ECOI, the obligation that Ljósleiðarinn provide access to ducts and conduits and hosting in the area where the company is considered to have significant market power, is more likely to support increased infrastructure competition there than access to dark fibre.

Competition problems where characteristics of vertical integration are manifest etc.

2289. While the Siminn Group existed, it showed behaviour in many instances which in the opinion of the company's competitors could be conducive to making it difficult for them to find a footing on Market 3a and on the downstream wholesale market (Market 3b). Under the section carrying the same name i.e. competition problems where characteristics of vertical integration are manifest etc., in section 7.5.3.4 here below where there is an explanation of competition problems on market 3b, one can find discussion on this, but these competition problems can both originate from markets 3a and 3b, as these wholesale markets are closely related. Reference is made to that discussion.

2290. One can point out here that there have been disputes about configuration of cables in demarcation boxes, and in disputes that have been referred to ECOI in this regard, the conclusion has variously been that the configuration by Ljósleiðarinn or by Mila has not been according to the rules. Such disputes have now recently been arising in the Tengir territory, or ECOI has not made any decision in those cases.

2291. Sharing of civil works for ducts and cable routes has not always been without problems and in most instances, Ljósleiðarinn and Tengir have deployed their own network without access to the Mila ducts and civil works, though there are examples of joint civil works of these companies. According to the PTA Decision no. 21/2014, an obligation was imposed on Mila to notify civil works with six months' notice for the purpose of making sharing possible. The PTA came to the conclusion in Decision no. 5/2018 that Mila had breached the obligation by not advertising part of its civil works in the Setbergshverfi district in Hafnarfjörður, and that with respect to that part that was advertised, the information given was not sufficiently clear. It was also deemed that Mila had breached the provisions of the access obligation and non-discrimination obligation by refusing Ljósleiðarinn access to its local loop ducts in a number of streets and by not respecting non-discrimination between related and unrelated parties. In the decision by the Appellate Committee for Electronic Communications and Postal Affairs number 2/2018, the PTA conclusion was confirmed with respect to the part of the civil works that was not advertised but the PTA decision with respect to the provision of information on access to ducts was deemed void on the grounds that the obligation that had

been imposed with Decision 21/2014 had not been sufficiently clear in this regard. ECOI consider that this conclusion had provided a reason to explain the nature of the duty to inform in more detail with ECOI Decision no. 5/2021.

2292. ECOI considers that the examples given in this section, see also section 7.5.3.4 here below, show unequivocally that Mila, and previously the Siminn Group, have throughout the years employed various methods to make competition difficult for Mila competitors at wholesale level, despite obligations on Mila. ECOI is not expect otherwise than that this behaviour may continue during the lifetime of the analysis and that there is therefore an absolute need for appropriate obligations on Mila in those areas where the company is deemed to have significant market power, although the Siminn sale of Mila and the severance of ownership and management connections between Siminn and Mila should, if everything were an order, diminish such incentives. ECOI agrees with CA that time will tell in this matter in the coming months and years.

7.5.2.5 Conclusion regarding competition problems related to significant market power on the relevant market 3a

2293. Obligations are imposed on companies with significant market power with the aim of combating real and/or potential problems in the field of competition on the market in question, and on corresponding wholesale markets and related retail market. Problems in the field of competition, with the exception of problems that derive from market structure, refers to any kind of behaviour by a company with significant market power, which is intended or leads to competitors of the relevant company that has significant market power, being forced out of markets, which prevents potential new customers or competitors from entering the market and/or damages consumers' interests. When obligations are applied pursuant to the Act on Electronic Communications the reason does not need to be that a dominant market position, is being leveraged and it is not a criterion that the competition infringement has been committed, but it suffices that competition problems could possibly arise from the circumstances, among other things because of specific market structure, that are detrimental to the market.

2294. In the sections here above, a variety of potential and real competition problems are described in section 7.5 that are related to market 3a, and also that interaction with competition problems related to market 3b, as these markets are closely related. There was furthermore a description of competition problems or disadvantages on a related market for trunk line lease that can have an impact on the relevant wholesale markets 3a and 3b. Problems that are likely to occur on the relevant wholesale market, or on a related leased line market, and that can have an impact on the relevant wholesale market, or on a related leased line market, and on those markets and/or related wholesale markets, if obligations are not in place on the market, can for example be manifested in denial of access, discrimination in pricing, cross subsidies, damaging predatory pricing, delays in negotiations and delivery, abnormal demands on counterparty, discrimination in quality, discrimination in provision of information or abuse of information from a counterparty. A company with significant market power in a specific area can furthermore have both an opportunity and incentive to abuse its position with respect to purchasers in a specific area by excessive pricing or discrimination in pricing.

2295. In discussion on problems related to significant market power in the relevant market, ECOI came to the conclusion that Ljósleiðarinn and Tengir did not have the same guarantee that service providers would not switch their business to the Mila network, as Mila has a guarantee for Siminn not moving its business to Ljósleiðarinn and/or Tengir to a significant degree, even though Siminn made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn fibre network in July 2020. It is then clear that by far the largest proportion of Siminn customers will remain on the Mila electronic communications networks for the lifetime of the analysis. This means that potential Mila predatory pricing on the relevant market in specific areas, which the company's competitors find difficult or impossible to compete with, could create a substantial and serious competition problem in specific areas, or maintain market structure that does not support competition. Excessive pricing can furthermore become a problem and can damage consumers if there are no other available networks than Mila networks. The possibility for Mila to provide wholesale bundles that competitors could not compete with, could furthermore cause competition problems. This could also be a problem in those areas where Tengir and Ljósleiðarinn have significant market power.

2296. There was then discussion on vertical transfer of significant market power which manifests itself in vertically integrated companies with significant market power wholesale level, depending on circumstances in specific areas, endeavouring to transfer market power to a downstream market by excluding or working against competitors on those markets. ECOI came to the conclusion that Mila, Tengir and Ljósleiðarinn could have the opportunity and incentive in those areas where they enjoy significant market power, to deny specific electronic communications companies access to market 3a, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b. It was then considered that that under cover of a strong market position in specific areas on Market 3a, Mila, Tengir and Ljósleiðarinn could have ability and incentives to use predatory pricing on downstream markets at wholesale level, in those areas where the companies have significant market power and thus have a damaging impact on competition in the long term by increasing price where there was no or little competition in place. In such a case, Mila's economy of scope and relative position on the adjacent trunk line lease market, to Mila's advantage, can cause competition problems on the relevant wholesale market and on the downstream market 3b.

2297. With all of the above in mind, identified and potential competition problems still exist, despite change circumstances on the market in the light of the Mila sale to Ardian. It is clear that there are still strong common interests between Siminn and Mila and the future must show whether these connections create an incentive for Mila to leverage its market power in a manner that inhibits competition. The conclusion was also reached that Mila, Tengir and Ljósleiðarinn could have the opportunity and incentive in those areas where they have significant market power to deny specific electronic communications companies access to market 3a, or offer access art unacceptable terms that one could equate to denial, and it was also considered that the companies had the capacity and incentive to apply predatory pricing or excessive pricing on the relevant market or on downstream markets wholesale level in those areas where the companies have significant market power. The characteristics of vertical integration still exist with Mila and Siminn, which could have a damaging impact in those areas where Mila is deemed to have significant market power. It is thus clear the

opinion of ECOI that obligations need to be imposed on those companies that enjoy significant market power in an endeavour to prevent or mitigate damaging consequences of the competition problems in question.

2298. In other respects, reference is made to the detailed discussion on competition problems on the relevant market in the sections here above.

7.5.3 Competition problems on market 3b

7.5.3.1 General

2299. In Section 6 here above, ECOI came to the conclusion that in specific areas on Market 3b, there was no active competition and that first and foremost Mila, but also Ljósleiðarinn in one area, had significant market power in specific areas. Such a situation means that the companies, each in their own areas, have such economic strength that it can hinder efficient competition and that they could to a substantial extent operate without concern for competitors, customers and consumers.

2300. In the following sections there is discussion on competition problems created by competitive conditions on the market, both on the relevant market and on related markets, including on adjacent market 3a which was discussed in section 7.5.2 here above. There will also be discussion on the impact that the difference in relative position that exists between Mila on the one hand and other network operators on the other on the market for trunk line lease (market 14/2004) could have on competition on the above specified market. Among other things, an assessment shall be made of what competition problems could arise if no obligations were in place on the relevant wholesale market. Reference is also made here to discussion on competition problems on market 3a and section 7.5.2 here above, as there is substantial and strong connections between these two wholesale markets. In some places one can also find discussion on market 3b in this connection. In general, one can say that competition problems are greater on market 3b in this country than in market 3a, as Mila has in many more locations a dominant position on market 3b than on market 3a. This is the opposite of what is generally the case widely across Europe, as electronic communications companies have entered the market that provides service on market 3b, despite not having an underlying electronic communications network.

2301. As previously stated, it is not necessary to demonstrate that damaging behaviour has taken place, but rather suffices to indicate likely incentives and opportunities for behaviour that could inhibit competition, among other things as a result of market structure. There will nevertheless also be discussion on instances that have arisen during past years that can indicate that the position of Mila and the former Siminn Group in connection with market 3b could create competition problems, but as previously explained and will be explained in more detail, there remain the opinion of CA and ECOI characteristics of vertical integration between the companies Mila and Siminn in the light of the long-term agreement between the companies, which among other things prescribes very substantial minimum purchases by Siminn from Míla, where Míla is according to the agreement the Siminn priority provider. Analysis of competition problems aims to provide a basis for a decision on imposition of obligations and on elaboration of the types of obligations that could be most useful in combating competition problems on the market, or on specific parts of that market.

2302. In the ERG report from 2006 on a common position with respect to the imposition of obligations on electronic communications markets[398], there is discussion on the main categories of competition problems that can arise on electronic communications markets. Problems are also mentioned that relate to significant market power on the relevant market, to vertical integration and horizontal integration. ECOI furthermore takes into account the BEREC document from 2012 in this connection[399]. In the opinion of ECOI, the most likely competition problems on a wholesale market like 3b are on the one hand those that are caused by or could be caused by significant market power on that market alone, and on the other hand by vertical integration, or its equivalent, and transfer of market power to related markets. In the opinion of ECOI, one must consider these problems could arise in this country in specific geographic areas and even though in the case of Mila ownership relationship with Siminn had been severed. In the following sections, these problems are described mostly in a general manner, and after that there is discussion on the individual instances that have arisen.

2303. Míla has for example control over facilities in telephone exchanges and technical spaces widely across the country, which is extremely important and is difficult for other electronic communications companies to duplicate. Hosting of equipment in these facilities is therefore often critical for those electronic communications companies that lease or have a potential interest in leasing access to Mila local loops, and also for those companies that wish to serve such parties that lease local loops with the connections necessary for the service provided all the local loops. Ljósleiðarinn leases substantial facilities from Mila for this purpose, both for passive connections and active equipment, and the scope of this may increase at this point in time when Ljósleiðarinn has acquired access to two threads in the NATO cable and has purchased fibre local loops and other electronic communications networks from Sýn widely across the country. Though this may not have involved substantial amounts of money in the broader context, these facilities are important for Ljósleiðarinn, and possibly for other parties, and at the same time for those Mila customers that are also customers of Ljósleiðarinn. Tengir also has such hosting options in the company's operational territory, as has Ljósleiðarinn in some case, with all that company mostly leases such hosting options from OR in the OR operational territory. There will also be discussion on the impact that the difference in relative position that exists between Mila on the one hand other network operators on the other on the market for trunk line lease (market 14/2004) could have on competition on the above specified market, a market that is important for local network operators being able to expand their operational territory and thus support competition in infrastructure.

7.5.3.2 Problems related to assessment of significant market power on the relevant market 3b

2304. Problems related to significant market power on the relevant market and as appropriate on the related wholesale market 3a, and that can arise on those same markets, are of varying kinds where one can mainly name access barriers, abuse vis-à-vis customers

[398] ERG (06) 33, Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework - Final Version May 2006.

[399] BoR (12)127: BEREC Common Position on best practices in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence position of significant market power in the relevant market.

operating at retail level, for example with pricing, abuse vis-à-vis competitors on the relevant markets and inefficiency in production.

2305. A company that enjoys market power on the relevant market, and as appropriate on adjacent market 3a and on an adjacent market for trunk line lease (market 14/2004),[400] can endeavour to create new entry barriers on the market, or on a specific geographic part of the market, in order to hinder new competition or make competition difficult for competitors on the relevant market, or on the adjacent wholesale market 3a. This this can for example be done in the form of discounts originating from other operational elements of a wholesale company with a broad service offer, which lead to abnormally low price on the relevant market, or on a specific geographic part of the market, in the short or long term and can prevent competitors on that market in the areas in question that do not have as broad a service offer and do not have as substantial economic strength, can enjoy normal profitability, or can prevent that potential competitors enter the relevant market. If such a company succeeds in increasing its market power on the relevant wholesale market in the relevant area even more, or even drives its competitors off the market or prevents potential competition, it is clear that both an incentive and an opportunity are created for the party in question to once again increase his wholesale price in the relevant area and thus damage competition on downstream or related markets.

2306. Competition problems can furthermore manifest themselves in the behaviour of such a party that has a broad service offer and substantial economic strength vis-à-vis weaker competitors or potential competitors, by directing access seekers to its own electronic communications network on the relevant market or on the adjacent wholesale market 3a, for example with advantageous wholesale bundles that are not on offer on other networks, where for example products are bundled together related to market 3a, market 3b, trunk line connections and even mobile network distribution and hosting, where competitors or potential competitors have no possibility of matching such an offer.

2307. Another example constitutes increasing the cost of switching to customers with agreements that are binding for a long duration.

2308. These are only a few examples of a great number of dangers that can threaten competition because of the structure of a market in a specific geographic area as described here above and/or behaviour a party to the market which is further described here below. ECOI reminds that in order for it to be possible for ECOI to react to competition problems with obligations, it is required that an incentive and opportunity exist for a party with significant market power to use his dominance, and not that it is demonstrated that he has done this.

2309. More specifically, a company with significant market power in the relevant market can endeavour to make it difficult for those companies, or potential new competitors in the relevant areas, that operate in competition on related wholesale markets, for example on markets 3a and 4, or even force them off the market. If appropriate obligations are not in place, there is a risk that such a company could for example arrange its pricing in specific areas

[400] There will be more detailed discussion on the impact of difference in status on market 14 between meal on the one hand other network operators on the other, in section 7.5.3.3,, which is entitled vertical integration, transfer of market power, bundling of wholesale service, economy of scope and status difference related to trunk line lease.

in the short or medium term, such that other operating companies would find it difficult to compete, so retailers on downstream retail markets would move their business over to the system of the significant market power operator. If such a party succeeded in preventing a new operator from installing fibre local loops in specific areas, or if applicable offer bitstream service, that party could then increase its prices, with consequent damage for consumers in those areas.

2310. It is in the opinion of ECOI clear that parties like Ljósleiðarinn and Tengir do not have the same certainty that service providers will not transfer their business to the Mila network as Mila has certainty that Siminn, which is the country's largest retailer, will not transfer its business to Ljósleiðarinn and/or Tengir to a significant degree, even though Siminn made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn network in July 2020, and Siminn began to offer its service on the Ljósleiðarinn network towards the end of August 2021. Given that agreement and the above specified wholesale agreement between Siminn and Mila, it is clear that by far the largest proportion of Siminn customers will remain on the Mila electronic communications networks for the lifetime of the analysis. This means that potential Mila predatory pricing on the relevant market in specific areas, which the company's competitors find difficult or impossible to compete with, could create a substantial and serious competition problem in specific areas, or maintain market structure that does not support competition. It is true that Ljósleiðarinn and Sýn have also made a mutual long-term agreement, but Sýn has a much smaller market share of the retail market than Siminn, and Sýn is bound to a much lesser degree than Siminn is vis-à-vis Mila. Countervailing buying power of service providers against Ljósleiðarinn and Tengir is thus much greater than the Siminn countervailing buying power against Mila because of the above specified long-term agreement between Siminn and Mila. Nova has for example 1st and foremost operated on the Ljósleiðarinn fibre network, but there is no long-term agreement in force between these parties. ECOI considers it not unlikely that Nova will begin to do business with Mila on the wholesale markets in question during the lifetime of this analysis, and at least some part of the Nova customers will therefore be on Mila fixed line networks during the lifetime of the analysis, which could mean that Nova business with Ljósleiðarinn could decline accordingly.

2311. A company with significant market power in a specific area can furthermore have both an opportunity and incentive to abuse its position with respect to purchasers in a specific area by excessive pricing or discrimination in pricing. Excessive pricing is considered to exist if a company is successful in maintaining excessive profits from its operations, i.e. more profit than one could expect on a competitive market. Excessive pricing can lead to higher retail price which damages the interests of consumers and even prevents some of them being able to use the service if the price was extremely high.

2312. Another competition problem that can arise can be manifested by an electronic communications company that is subject to obligations on a specific wholesale market, e.g. for transparency, price control, and not on others, attempts to move product offer from a regulated market over to a non-regulated market. This can in some instances be justified on the basis of technological development but can also constitute avoidance of obligations.

2313. Inefficiency in production is a problem that can arise when there is no active competition on a market or specific part of the market. When a company is not subject to constraint by competitive pressure, this can lead to the company making little effort in many

areas of operations such as with respect to cost restraint, quality requirements, new investments and innovation. These problems have not been conspicuous on market 3b, nor on market 3a in this country, but they could possibly arise if competitive pressure were to decrease or remain low in specific areas, or with the lifting of obligations in specific areas, particularly where only one operator has an electronic communications network in place.

7.5.3.3 Vertical integration, transfer of market power, bundling of wholesale service, economies of scope and difference in status with respect to trunk line lease

2314. Vertical transfer of significant market power is described as where a vertically integrated company with significant market power at wholesale level or as appropriate in specific areas, endeavours to transfer market power on adjacent wholesale markets to a downstream wholesale market by blocking or working against competitors on downstream markets. Market 3b is a wholesale market and is connected to a number of markets, the adjacent wholesale market 3a, the wholesale market for high quality connections on the corporate market (previously the market for terminating segments of leased lines, now market 4) and related retail market or retail markets. An adjacent trunk line market (Market 14/2004) is then extremely important for carrying bitstream service across the country, such as in the case of local loops (Market 3a).

2315. With respect to vertical integration and transfer of market power, one can make divisions into several main categories when considering the relevant analysis of market 3b.

a. Denial of access
b. Pricing
c. Other aspects relating to communications with competitors on downstream markets
d. Tying or bundling of wholesale service
e. Varying economies of scope
f. Difference in status regarding trunk line lease

Denial of access

2316. A company which has significant market power on the wholesale market, depending on circumstances in specific areas, can tend to deny companies that are competing with the company on downstream markets or potential new competitors, access to wholesale service, for the purpose of preventing competition or at least making it more difficult for competitors. Such behaviour can be manifested in absolute denial of access or that access is provided at such unreasonable terms, including pricing, that is tantamount to denial.

2317. There can be an incentive in place for Mila and Ljósleiðarinn to sell central access instead of offering local bitstream access or to have the price difference between local access and central access such that this equates to such denial. This can lead to electronic communications companies being forced to purchase more expensive access and/or not being able to use their own infrastructure in data transfer service. They can also be an incentive to arrange for an offer such that an electronic communications company needs to purchase all bitstream service from one party, for example if it is not possible to purchase IPTV service without purchasing Internet service. This can also apply to an international portal, and both Mila and Ljósleiðarinn now offer such a portal.

2318. ECOI considers that Mila and Ljósleiðarinn could have the opportunity and incentive in those areas where they enjoy significant market power, to deny specific electronic communications companies access to market 3b, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b. In addition to providing access to local loops or bitstream, this could also apply to access to ducts and conduits and to hosting options.

2319. It is clear that Ljósleiðarinn has not provided access to dark fibre (market 3a) on the residential market. Mila only sells very little access to local loops in its fight fixed line networks to external parties, despite obligations relating to this, as electronic communications companies on the retail electronic communications market have in recent years purchased bitstream connections instead of local loops. This is among other things because of Mila network topology which uses a PON system on the company's fibre local loops. Tengir has on the other hand provided access to dark fibre, among other things to Mila in a substantial quantity. Tengir on the other hand only provides bitstream service on its own local loops in competition with companies like Mila that provide bitstream service on the Tengir network, but the company does not have significant market power in any area in market 3b.

2320. For refusal of access to create significant competition problems, circumstances must generally exist, as appropriate in specific geographic areas, where electronic communications companies on upstream or downstream markets do not have the option of using other networks that could provide them with comparable access at acceptable terms. Despite the fact that in this country, fibre networks have been deployed, as appropriate in some cases with bitstream equipment, by parties other than Mila, they do not have national coverage and at many locations retailers need to rely on Mila wholesale service. One also has to keep in mind that at the end of 2022 there were still about 20% of Internet connections in this country on the copper network, which is only available from Mila. Mila has also taken over operations or purchased many of the local fibre networks that have been deployed in the countryside with grants from the Telecommunications Fund. A denial by Mila of access to connections in those areas on market 3b where the company has significant market power, and/or on market 3a, and as appropriate on adjacent markets for trunk line lease (market 14/2004) could therefore have serious consequences for competition on downstream markets, particularly if the operational basis of competitors on the market in question is not assured as a result of the structure of the market and/or behaviour of Mila. A denial in this case does not only mean a clear denial but also on offer for access at such unacceptable rates or with such unacceptable conditions that can be equated to denial. The same can be said about Ljósleiðarinn in those areas where the company has significant market power.

Pricing

2321. The transfer of market power in the form of pricing can have various manifestations, such as discrimination in pricing, cross subsidies and damaging predatory pricing or excessive pricing. The purpose of such behaviour can be to increase costs for competitors (current and potential), to lower their turnover and put them in a tight position by having a very small difference between the price on the relevant wholesale markets 3a and/or 3b on the one hand on downstream markets on the other. Furthermore, a party that has a dominant position on the market for trunk line lease (market 14/2004) can leverage its position on that

adjacent market in such a manner that it could have a damaging impact on downstream markets 3a and/or 3b, particularly with respect to connections into an area where the party in question as a monopoly or dominant position with respect to trunk line connections. The pricing of wholesale bundles, such as for example including trunk line transfer, possibly IP-MPLS, and goods on markets 3a/b, and as appropriate with respect to mobile network distribution, could cause problems on the relevant wholesale markets 3a/b, particularly if no competitor can match such an offer.

2322. A company with significant market power, as appropriate in specific geographic areas, can have incentives to sell its wholesale service at varying prices depending on who the purchaser is, or the area concerned. The company can for example sell service to specific retailers at a lower price than to other purchasers, for example two electronic communications companies that are bound by minimum purchases in connection with long-term agreements. This can lead to costs for competitors of this retail company becoming higher and thus making it difficult for them to compete. When the retail share of such a priority supplier increases, this benefits the wholesale company in question, as the electronic communications company is bound for an extended period of time to purchase a specific minimum volume from the relevant wholesale company, even having provisions for incremental increases in purchase, year by year. There could also be an incentive for companies with significant market power to price the service higher in areas where there is little competitive pressure. Such could to some extent be normal if there are cost grounds to support this, but there could also be examples of excessive pricing as a result of lack of infrastructure competition.

2323. Differing prices can in some instances be justifiable, for example if the cost of providing a service differs verifiably, or if discounts are given for fidelity or bulk purchase. If a bulk purchase discount is however based on the number of transactions that could only apply to one or few retailers that have made binding long teen agreements with the wholesale company in question, then this indicates that this is a measure to inhibit competition. ECOI considers that if appropriate obligations are not applied then such wholesale company would have the opportunity and incentive to discriminate between electronic communications companies in pricing on the relevant market and/or on downstream markets.

2324. Cross subsidies can occur between services on Market 3b and downstream or retail markets or a related wholesale, i.e. Market 3a, and also as appropriate between service on on adjacent trunk line lease and on downstream wholesale markets 3a and 3b. Profit on the leased line market and/or on Market 3 a could then be used to subsidise losses on downstream Market 3b. A vertically integrated companies or company, where the characteristics of vertical integration are a result of long-term agreements, could have the opportunity and incentive to collect an abnormally high price on Market 3b, as appropriate on adjacent market 3a, if obligations for price control were not in place, or at least an obligation for fair and reasonable pricing. As previously stated, Mila sells few local loops in external sales on its fixed line network and Ljósleiðarinn does not sell any at all on its fibre network on the residential market, but it is rather the case that by far the largest sales take place on market 3b. Cross subsidies of this kind can put customers operating on a retail market in a price squeeze, or some of them if they are subject to discrimination.

2325. Predatory pricing is when a company sells a product or service under a specified cost criterion. Generally, this means prices that are below average variable costs. A company with significant market power on a wholesale market, depending on circumstances in specific areas, can have the incentive to under-price for the purpose of strengthening its position and even of pushing its competitors out of the market, or to hinder the entry of new competitors, depending on circumstances in specific areas. The competition authorities have in a number of instances needed to take action because of damaging predatory pricing by a significant market power operator, for example against Siminn in case 30/2011, see ruling by the at Appellate Committee number 10/2011 where it says, among other things:

> *"The dominance of the appellant on submarkets of the electronic communications market, particularly in the field of fixed line systems and mobile phone service, make it particularly urgent to prevent the appellant from leveraging his strong position there, to create a corresponding position on new or related telecommunications markets that are in development. Otherwise there is a danger that competition will not be allowed to develop naturally on such markets."*

2326. ECOI considers that under cover of a strong market position in specific areas on Market 3b, Mila and Ljósleiðarinn could have capability and incentives to use predatory pricing on wholesale level, in those areas where the companies have significant market power and thus have a damaging impact on competition. Míla, in the light of a strong position on the market for trunk line lease could then leverage that market with predatory pricing on markets 3a and/or 3b or could on the price on the trunk line lease market.

2327. With predatory pricing and cross subsidies, normal balance in pricing between Markets 3a and 3b could be distorted and this could result in making competition more difficult for competitors on Market 3a and Market 3b and /or customers on downstream retail markets or even drive them out of the market or prevent the entry of new parties to the market. An abnormally small difference in price on 3a and 3b could also direct competitors from market 3a and force them to purchase more service on market 3b, or prevent such parties from ascending the ladder of investment and cause them to consider local loop In lease, possibly virtual access (VULA)instead of bitstream access. Advantageous wholesale bundles could also create problems when competitors cannot match such offers.

Other elements regarding communications with competitors on downstream markets

2328. Transfer of significant market power that is not related to pricing can be in the form of various behaviour that constitutes discrimination between a company's own sales units, customers and those of competitors. For example, this could be a case of delays in negotiations or delivery, irregular demands on counterparties in negotiations, discrimination in quality, discrimination in provision of information or misuse of information from the counterparty.

2329. A company with significant market power in the relevant market or on adjacent markets for trunk line lease and/or Market 3a, as appropriate in specific areas, could have the incentive to delay when specific customers that operate at retail level, request access to wholesale service. This can create competitive advantage for specific retail companies, as appropriate for priority purchasers, an advantage in competition where competitors are

slower to react to demand on a market when they do not receive rapid access to necessary wholesale service and can also lead to discrimination between customers at retail level and for example can favour priority purchasers. With such behaviour, a priority purchaser can then gain an advantage known as first mover advantage. It can be necessary to prevent behaviour like this by imposing obligations for non-discrimination and for a maximum time that negotiations and the delivery of service, to mention some.

2330. In some instances, companies with significant market power make unreasonable demands on wholesale purchases that operate at retail level. This could then represent unreasonable demands on specific wholesale purchases that are not deemed to be priority purchasers, for the purpose of favouring priority purchasers. Such demands can for example relate to bank guarantees, minimum number of transactions or demands for unnecessary information, which delay negotiations.

2331. This can also be a case of discrimination in quality between the service that a company's own departments receive on the one hand competitors on the relevant wholesale markets or customers operating at retail level on the other, e.g. with respect information on and reactions to faults.

2332. Problems related to exchange of information between companies can in the first instance be such that a wholesale company with significant market power, as appropriate in specific areas, provide specific retail companies for example priority purchasers, better and more prompt information before others are informed, for example with respect to development plans and upgrades of technical equipment, including increased performance capacity. This could mean that specific retail companies become slow to react to changes and miss opportunities to gain or retain customers that are interested in purchasing the newest service solutions on the market. Such a company's treatment of information from customers can furthermore create competition problems. When making wholesale agreements, the wholesaler receives various information concerning the operations of the wholesale purchaser, their plans and estimates of the number of users. A company could have incentives to disseminate such information in some manner to other company departments or for example to priority purchasers operating at retail level, which could make it easier for them to work against competition. It is clear for example that Mila handles almost all technical service for Siminn in connection with service on the wholesale markets in question and is for example some kind of intermediary for the implementation of the Siminn agreement with Ljósleiðarinn and would be in the same role also if Siminn should make a direct agreement with parties like Tengir and Snerpa.

Problems related to economies of scope and/or potential bundles in wholesale service

2333. One can mainly divide the relevant markets, i.e. access markets at wholesale level and retail markets, into three layers. From this point of view local loop lease (market 3a) is lowest, bitstream system built on local loops is in the middle and at the top is the service carried over bitstream and that is generally sold in retail. This retail services generally Internet access, distribution of TV content on voice telephony. The underlying infrastructure is trunk line lease (market 14/2004), which carries traffic across the country between the various access networks.

2334. At the beginning of 2021, Siminn moved various systems over to Mila. This included among other things IP/MPLS transfer network (trunk line lease), Siminn IP numbers and AS numbers, and international portal. Seaman developed the MPLS transfer network originally within the country for its own needs for transferring data for a variety of services over a fixed line and mobile networks across the country. Some of the data that the MPLS network carried within Siminn was data for distribution of Internet service across the country, i.e. Connecting Access Option 1 art each such location where Mila provided that access to the Siminn system core where connections were then directed to exchanges of Internet service providers, such as RIX in Reykjavík and international portals to exchanges abroad. Apart from this, the Siminn mobile telephone distribution system (RAN) was moved to Mila, but Siminn still retains mobile phone frequencies and operates a mobile phone core.

2335. As Mila has taken over the MPLS network, Siminn no purchases this service in wholesale from Mila. Mila has also taken over ownership, operations and service for IP numbers and AS numbers that Siminn previously had. Mila has also taken over the international portal for Internet connections.

2336. Producers at the top level, i.e. retail services themselves, purchase bitstream access from Mila or from other access networks and compete in retail to consumers on the basis of their own production, i.e. capability in the field of technology of operations to maintain adequate quality of delivery and uptime in service. Trunk line connections to move traffic to and from the various access networks and to connect them, are normally purchased by retailers from Mila or from other network operators, and the Mila trunk line network is the most powerful and extensive of such networks. Nova operates its own IP-M PSL system on the underlying leased lines of network operators, where both Siminn and Sýn have stopped operating their own transfer systems.

2337. Without having its own AS numbers and IP numbers, one could cast doubt on Siminn's independence in producing its own service. Without AS numbers one could say that Siminn is not a direct participant in the Internet, as directing data between networks is based on these numbers. With AS numbers and IP numbers, is thus Mila that controls such directing of data to and from Internet service customers, both within the country and through the international portal that Mila also has in its company. Questions also arise on the technical independence and capability of Siminn to purchase access service from other bitstream networks, and [...].

2338. In addition to the traditional wholesale purchases by Internet service parties of local loop lease and bitstream service, Siminn therefore now also purchases service for providing Internet service itself including the international portal, which Siminn previously operated for its own purposes. Mila has therefore widened the scope in its service offer.

2339. One could say that Siminn now resells fully produced Internet service from Mila under the Siminn trademark. Service that has been called Access Option 4 on the bitstream market 3b, an access option from which obligations were lifted by ECOI with the rescinding of PTA Decision no. 21/2014, which had been in force since 2008.

2340. Mila has thus become a competitor, though indirectly, of other retailers of Internet service which are at the same time significant customers of Mila with their purchase of access to bitstream service. The same can to some extent be said about Ljósleiðarinn.

2341. ECOI believes that the changes that have taken place on the electronic communications market, commenced with the sale of electronic communications systems from Siminn to Mila and subsequently with the sale of Mila to Ardian, have increased the Mila service offer in providing electronic communications service and have strengthened the company's position at wholesale level in competition with other electronic communications companies that operate fibre systems, such as Ljósleiðarinn and TT. Mila now operates a powerful mobile phone distribution system (RAN) with national coverage, which the company's competitors cannot easily emulate. The above is reflected among other things in the transfer of the electronic communications systems in question in the run-up to the Siminn sale of Mila and in the Mila control of all IP and AS numbers and of the RAN from Siminn as described above.

2342. Ljósleiðarinn has also purchased a trunk line network from Sýn and has leased two threads in the NATO fibre cable, giving the company increased possibilities to increase the service offer from what it was before. With the above specified sale of the Sýn trunk line network, there was a service agreement made between Ljósleiðarinn and Sýn which does not go quite as far as the service agreement between Mila and Siminn, among other things with respect to length, commitments and transfer of AS and IP numbers. From the above one can conclude that the independence of Sýn will be more than that of Siminn after the above specified transfers and sale of electronic communications systems as is described in more detail in the CA merger Decision no. 16/2023, *Ardian purchase of all shares in Mila ehf from Siminn hf and no. 37/2023 Ljósleiðarinn ehf purchase of the Sýn hf trunk line network.*

2343. On the potential market for electronic communications and TV bundles one can mention the bundling of transactions means that customers are offered as a single unit, a variety of products or service types that have generally been previously sold individually. This can involve more than one market depending on the service points in question, for example Internet and TV service (two play) or Internet, mobile phone and TV service (three play). It may be possible to define further submarkets for specific types and/or sizes of products but one can say that the importance of bundles in electronic communications and TV service has increased significantly in recent years.

2344. In a rejection form from CA from December 2019, which was sent to Siminn because of the Authority's investigation of the company's marketing of English Premier League, the preliminary assessment was given that it would be possible to define a special market for bundles which contained electronic communications and TV service. It was considered that Siminn share on such a market could be about 65% for the year 2018. Since 2016, ECOI has in its gathering of data on electronic communications markets, made a distinction between on the one hand bundles containing Internet and on the other hand containing Internet and TV. In the CA Decision no. 24/2023, *Síminn hf. request for revision of the settlement between the company and the Competition Authority as prescribed in Decision no. 6/2015 t*here is further discussion on this information. Information provided there on market share on the basis of the number of bundles with Internet and TV service where two, three and fourfold services are bundled together, show that seamen share has increased between the years 2021 and 2022 The share was 64.9% in 2021 and 67.0% in 2022. There are indications that Siminn has been strengthening its position in this field. One can therefore assume that if bundles of electronic communications and TV service were defined as a separate market, Siminn would have market dominance there, see CA provisional Decision no. 30/2023 *Probable Siminn hf. breach of competition law*.

2345. The strong position of Siminn in electronic communications bundles strengthens the Mila position, which has a guarantee of at least 80% of all Siminn business on downstream retail markets for the next 20 years or so. There are also many indications that mobile network solutions will be unimportant factor in developing electronic communications markets in the coming years, which will also strengthen the Mila position on the underlying wholesale markets, as Mila now controls both fixed line networks and mobile networks subsequent to the above specified transfer of electronic communication networks from Siminn to Mila, among other things the mobile phone distribution system (REM) and IP-MPLS system. With the above specified systems, Mila has thus acquired the capability and incentive to exclude its competitors, some of whom are also dependent on Mila as customers for data transfer, from important itemised procurements and as applicable from the group of its customers, by and entwining or bundling wholesale electronic communications services.

2346. More precisely, with the IP/MPLS trunk line transfer one may consider Mila opportunities for bungling wholesale products in access and trunk line network transfer to be significantly greater, as Mila conducts almost all production service to users and companies. In the light of the above, Mila retail competitors may face decisions in the coming months and years on reinvestment in their own production systems, or to retreat even further and to purchase almost fully produced products from Mila for resale. Sýn appears now to have partly taken the same path as Siminn, with the Sýn agreement with Ljósleiðarinn.

2347. Mila competitors on markets 3 a 3b are also faced with competition from the increasing Mila breadth and from the Mila opportunities for bundling over that breadth and Ljósleiðarinn would be subsequent to this need to alter its product offer and among other things offer service through an international portal.

Difference in status regarding trunk line lease

2348. It is not inconceivable for it to be possible to transfer market power to the market for trunk line lease (market 14/2004) to wholesale markets 3a and/or 3b. A company that is in the strongest position on the relevant trunk line lease market can enjoy an advantage when it comes to deployment of fibre networks in individual areas in the countryside and can thus have an impact on the competitive position on market 3a in specific areas. This could furthermore apply to operation of bitstream equipment and could thus also have an impact on the competitive position on market 3b in specific areas.

2349. Mila has long been in the strongest position on the relevant trunk line lease market. With respect to discussion on this, reference is made to the sub-section entitled “Relative position with respect to trunk line lease” in section 7.5.2.3 where an account is given of competition problems on market 3a mutatis mutandis.

7.5.3.4 Further on competition problems related to market 3b in this country

In general, on status of the market

2350. In the previous sections there are descriptions of the main problems likely to arise if no obligations are in force on Market 3b on Mila and Ljósleiðarinn in those areas where the companies have significant market power. In addition to these problems, one can identify a

number of issues in the actual status today that one may categorise as competition problems on Market 3b and related markets, both with respect to market structure and behaviour of market players. With respect to potential problems concerning market structure, there was discussion on the relative position that prevails between Mila on the one hand other network operators on the other hand with respect to economies of scope and possibilities for bundling wholesale service, and also with respect to access and control of leased trunk lines that can have an impact on downstream wholesale market, including on market 3b. Then a number of cases will be described that have arisen in recent years on the relevant wholesale markets and downstream retail markets, some of which have ended with decisions by ECOI (previously PTA) that can be categorised as competition problems.

2351. The market for central access to fixed line networks in this country is characterised by duopoly in the most densely populated areas and buy anything from monopoly to extreme oligopoly in many geographic areas in the countryside. Only one company, i.e. Mila, controls an access network with close to national coverage, and in addition it has a comprehensive, fully developed trunk line lease network and has dominance over its competitors with respect to connections into the various areas. Competitors are not operating on all locations in the country, but they rather operate, each in their own territory, which can cover a number of municipalities. Ljósleiðarinn and Tengir now operate outside the utility service territory in of their owners, but only in specific geographic areas. Although Ljósleiðarinn now has access to 2 threads in the NATO fibre cable, its network is far from having national coverage, as Ljósleiðarinn does not own local loops except in part of the country[401]. Nowhere are there more than two players competing on the market for central access to fixed line networks and at many locations outside the most densely populated areas, Mila is the only player on the market. Mila had about 52% market share on market for central access to fixed line network at national level at the end of 2022, and 44% if the mobile network solution is included, and has thus the highest share of the relevant market if one considers the country as a whole. Ljósleiðarinn is however not far below 45%, Tengir has just under 2% and Snerpa 0.7% while others have a total of under 1% if one only considers fixed line networks. These companies only however operate local fibre networks, at least up to this point in time. Sýn, which was the largest party in “others” has now stopped providing bitstream service after CA endorsed the Ljósleiðarinn purchase of the Sýn electronic communications networks on 28 September 2023.

2352. What matters however most is that Mila market share is very high in those areas where that company is deemed to have significant market power, and in addition to this, parallel coverage of fixed line networks is almost zero or very low in the relevant areas. Ljósleiðarinn market share is also very high in the area whether companies deemed to have significant market power and parallel coverage of fixed line networks is also high.

2353. Though the Mila share has decreased at national level since the last analysis was made in 2021, Mila dominance is still considerable on the relevant market if one considers the country as a whole and is large in many areas. Mila is also in a strong position widely across the country on market 3a and also is best placed with respect to trunk line lease connections in the countryside and in the various regions. The company has recently been making great

[401] Ljósleiðarinn, unlike Mila has no local loops in the West Fjords, on Snæfellsnes in West Iceland, North Iceland East Iceland, and Ljósleiðarinn deployment is limited to South Iceland West Iceland.

advances in development of fibre networks, particularly in urban areas, but also by purchasing or by long term leasing of fibre networks in country areas. The market is characterised widely by substantial entry barriers where it has proven rather difficult for new companies to establish themselves, and it took a long time for Ljósleiðarinn and Tengir and costs were high during the last 20 years or so and is also localised. While companies like Ljósleiðarinn and Tengir have over a long period of time widened their fibre network to households in their operational territories, Mila emphasised upgrading its copper local loops until just a few years ago when the company launched a major effort in deploying its own fibre network to households and companies in 2016. After the sale of Mila to Ardian was finalised at the end of September 2022, the company has significantly increased investments in fibre networks and its deployment plans for the coming years an ambitious, while they are much more modest with Ljósleiðarinn and TT.

2354. As the market is very small, with respect to the number of end users compared with most other domestic markets in the EEA, while the country is at the same time sparsely populated in the European context, new investments are risky and there are few who have the capability of developing an access network and bitstream system, as applicable, with appropriate for the necessary trunk line connections into the various areas in competition with Mila, and furthermore, this takes a very long time, but takes an even longer time with respect to deploying fibre networks than setting up a bitstream system. Mila operates bitstream service on Market 3b on all its access networks, both on copper and fibre, and Mila furthermore operates bitstream service on many smaller networks outside the Capital City Area, e.g. on the Tengir network and on most local networks. It is therefore likely that the Mila dominance in market share will remain in place, at least for the time being, particularly in specific geographic areas, and there are certain indications that this dominance could strengthen even further in the lifetime of the analysis, for example if the country were possibly to gain Nova as a customer in its network to greater or lesser degree, which is not unlikely given the fact that Mila appears to place considerable emphasis on this.

2355. In recent years, Ljósleiðarinn has continued investing in its fibre network, particularly with co-investment with Mila, and the service area of this company on the relevant market now covers a large area in south-west Iceland all the way east to Mýrdalshreppur in South Iceland. Ljósleiðarinn had about 45% share of the relevant market at national level at the end of 2022 and up to 70% in Seltjarnarnes. Then Tengir had about 2% market share at national level and other local players jointly had about 1% share.

2356. The Mila market share has decreased from 57% since the last analysis to 52% at the end of 2022 and the company still has the highest share on the market if one considers the country as a whole. As previously shown, there are various indications that this development could stop or even reverse a little during the lifetime of this analysis. So these average proportions do not give a true picture of individual geographic markets in the case, and Mila has a dominant market share in many geographic areas and is even the only operator in specific areas. The incentive for Mila to sell products that have not been bound by obligations does not appear to have been strong in recent years. One can however also note that certain types of service are offered by Míla that are not subject to obligations. Mila has the most widely distributed network in the country and electronic communications companies are dependent on access to it if they wish to provide services throughout the whole country. One must assume that incentives have changed to a significant degree after the ownership

connection was severed between Siminn and Mila, but one must however reiterate what has previously been stated about the long-term wholesale agreement between Siminn and Mila and CA and ECOI consider that the impact vertical integration between the companies still exists or at least very strong common interests. In addition to this Mila has most economies of scope, most deployment across the country, including trunk line network and opportunities to offer attractive wholesale bundles. Development on the market has therefore not given a reason to assume otherwise than the there is still a need for obligations in specific areas on the relevant market, and not only vis-à-vis Mila but also vis-à-vis Ljósleiðarinn in Sveitarfélagið Ölfus.

2357. Vertical integration in the Siminn Group was previously conducive to limiting active competition in a variety of ways, and as is stated above, the ownership ties between the companies were severed at the end of September 2022. On the adjacent market 3a, the Siminn Group also had high market share and also on the retail market for Internet connections. The Siminn Group also had dominance on the adjacent market for trunk line lease. In addition, Siminn has had a dominant position on the retail market for bundles, where electronic communications services and TV services are bundled together. Markets strength on Market 3b afforded the Group various opportunities and devices to protect its advantage quite effectively on downstream markets or even to increase its advantage in competition on the adjacent market 3a, and still does this in the case of Mila in specific areas, and also on downstream retail markets, but this could also work in the other direction such that the strong position of Siminn on retail markets, including for line charges, which in recent years has among other things manifested itself in great success of the Heimilispakki bundle, directed customers to the Mila access network, which presumably slowed down the dropout from the Mila network, despite a very substantial increase in deployment of fibre by independent operators since 2014. The Siminn market share on the retail market has not decreased much since 2014 if one only considers fixed line network connections but has decreased somewhat if one considers the mobile networks solutions in question and it stood at about 43% at the end of 2022 when the mobile network solutions had been included in the calculation. Siminn was slower off the mark than Nova and Sýn when it came to marketing that solution and should thus have the greatest potential for progress in this respect. Various aspects of the behaviour of the former Siminn Group with respect to vertical integration have been investigated during the past years.

2358. Though the Siminn Group was a thing of the past subsequent to the Ardian purchase of Mila at the end of September 2022, there are still as previously stated, very strong common interests and commercial connections between the companies, and in addition to this CA and ECOI consider that impact of vertical integration between the companies still exists. According to a long long-term wholesale agreement between the companies, Mila is Siminn's priority supplier for those wholesale services in question on the relevant wholesale markets and Siminn must purchase at least 80% of its total connections from Mila. Mila competitors therefore cannot compete on this share for the coming 15 to 20 years, which is considered to be about 35% of the total market. It is clear that Siminn latitude to purchase 20% of connections from other network operators is only used in part, at least so far. Mila has thus clear interests in maximum success for Siminn on the retail market. In this way they could still be an incentive with Mila to favour Siminn at the cost of other retailers, though this incentive is by the nature of things significantly less than when the companies were within the same consortium, and in addition to this such an incentive could diminish even more as time passes.

The impact of the strong Mila position on operations of smaller local networks

2359. Mila is as previously stated, the owner of the largest trunk line and access networks in the country and the only such networks that reached nearly all users. The network was initially based on copper local loops, but in 2016 Mila commenced rapid and extensive fibre roll-out and steadily increased the company's fibre local loops. Mila fibre local loops numbered about 120,000 at the end of 2022 and there is continued vigorous development planned by the company for the coming years and 2023, according to the company, will set an absolute record in such investments. At the end of 2022, Ljósleiðarinn fibre local loops numbered about 120,000 and Mila fibre local loops were for the first time more than Ljósleiðarinn fibre local loops, which had been rolling out its fibre network for more than 20 years. Apart from bitstream service on its own copper and fibre local loops, Mila furthermore operates bitstream service on the Tengir network and on most local networks across the country.

2360. During the last years there has been development of local fibre networks at many locations in the countryside. This development on the other hand speaking based on two scenarios, on the one hand there are companies owned by utility companies, entirely or partly, that implement the projects, such as Ljósleiðarinn and Tengir, or on the other hand state funded networks in sparsely populated communities. In addition to this, municipalities and/or local inhabitants have in some instances deployed a fibre network without state aid[402], such as Snerpa in the West Fjords, Austurljós at Egilsstaðir and surrounding area and now finally Eygló in the Westman Islands.

2361. Ljósleiðarinn operates its own fibre network and thus bitstream systems, mostly independent of Mila, but it is worthy of note that many of the smaller networks are not in direct competition with Mila but rather cooperating with the company and in a large number of cases, Mila has purchased their networks or leased long-term, as Mila is in the best position to do this with its powerful trunk line network with national coverage. It seems to prove difficult for the owners of the smaller networks to operate them and their active equipment, which is where Mila has entered in a strong position. These very numerous networks are like islands where the parties in question do not have trunk line connections from them to other locations. Mila is responsible for the operation of GPON connections on over 23 such networks. Mila has also deployed with grants from the state or from municipalities or house acquired ownership or long-term leasing of 29 additional networks. This is a total of 52 local networks. This has for a long time not been an option available to Ljósleiðarinn because of a lack of its own trunk line connections outside the south-west part of the country and according to the company because of disadvantageous terms offered by Mila for such trunk line connections. Now the company has acquired access to two fibre threads in the NATO cable, but the company still lacks connections from their two various urban nuclei widely across the country, which involve distances of often tens or even hundreds of kilometres. With the Ljósleiðarinn purchase of electronic communications networks and electronic communications systems from SS, which was finalised with the CA endorsement on 28 September 2023, the company assured itself access to small fibre networks in the countryside in south Iceland. In 2023 Ljósleiðarinn then purchased the Líf í Mýrdal network in

[402] It is appropriate to note that rules for state support also apply the networks developed by municipalities, even where they receive no support from the state.

Mýrdalshreppur. As has been stated here above, the relative position between Ljósleiðarinn and Mila with respect to access to and control of trunk line connections is huge.

2362. Tengir purchased a network initially owned by Skútustaðahreppur, a municipality that merged with Þingeyjarsveit in 2022, in addition to operating bitstream equipment on the small Tjörneshreppur network, where connections number a few tens. Tengir also purchased a local network in Vopnafjarðarhreppur from Vopnafjarðarljós. The relative position between Tengir and Mila with regards to access and control of trunk line connections is also very substantial. For example, Tengir does not control its own trunk line connections between its operational territory in Northeast Iceland the Capital City Area, where retailers need to purchase access to such connections from 1/3 party, including from Mila which owns and operates the most powerful and widely distributed trunk line network in the country. Nor does Tengir control its own trunk line network between all of the company's access networks.

2363. It could be that is not realistic for owners of the smallest networks to take part in their operation and to invest in active equipment and other necessities to provide retailers and thus consumers with the necessary service. Such a party also lacks control of trunk line connections to locations outside its own territory. It could thus be that in many instances there are no possible operators available other than Mila, among other things because Mila operates the most unified and powerful trunk line system with national coverage. This demonstrates the strong Mila position as the only company in this country that operates access and fully developed trunk line networks with close to national coverage. This development is also conducive to strengthening Mila's position on the market and results in new investments in smaller networks, in many instances not leading to increased competition on the market to any significant extent, and in addition to this these are few connections of the total number of connections in this country.

Reluctance of the Mila and Ljósleiðarinn to provide specific types of access

2364. As stated here above, a company with significant market power on a wholesale market, in some cases in specific areas including on an adjacent market for trunk line lease, can have a tendency to try and transfer this power to a related market by refusing access to a specific wholesale service to specific clients or competitors. Instances have arisen where access is refused or delayed or made difficult in some manner despite obligations on access being in force.

2365. In this connection one can for example mention that it proved extremely difficult for some time for companies to be granted full access to the Mila VDSL system (which was then in fact owned and operated by Siminn), during the years 2010-2012. Vodafone (now Sýn), for example repeatedly requested access to VDSL with multicast on Access Option 1 for a number of months, but Mila had only offered Internet transmission on Access Option 3 in VDSL. A PTA (now ECOI) decision was needed to require the Group to desist from such behaviour, see PTA Decision no. 38/2012. With such access Vodafone could offer its customers access to the company's IPTV system through Mila networks. More specifically, Mila for some time did not offer access to multicast for parties other than Siminn, nor access to Access Option 1 except with major and detailed conditions, among other things with respect to a projection on the number of customers at each location.

2366. In addition to this, companies failed year after year to have Siminn IPTV service over their own bitstream system and it is very important for network operators to be able to offer IPTV service on their network, as such TV service has long been extremely popular among consumers in Iceland, though the importance of this has somewhat diminished with increased streaming services. The importance of IPTV distribution is however still high on the national electronic communications market. Ljósleiðarinn had repeatedly and over long periods of time, offered Siminn bitstream access for Siminn to use for its IPTV service on for other service, e.g. Internet service. It was then not until July 2020 that Siminn finally made an agreement with Ljósleiðarinn on such access. Síminn began offering its service on the Ljósleiðarinn network in August 2021. Despite the agreement in question, it is clear that by far the largest proportion of Siminn customers will remain on the Mila network throughout the lifetime of the analysis. Sýn has also been in dispute with Siminn on access to material owned by Siminn for distribution on the Sýn IPTV system since the autumn of 2015, but has made no progress. At the same time, Siminn has strongly emphasised the bundling of electronic communications and TV service with TV content (Heimilispakkinn), with good results from the time the policy was adopted in the autumn of 2015.

2367. Access to the Mila VDSL system is still important in many parts of the country, as the reality is that in the areas where Mila has developed its VDSL service and where another network based on fibre is not in place or only to a limited degree, there is no other option for fast broadband access. Other bitstream providers that used to have their own ADSL system in the area therefore lost a large number of the customers in bitstream service in a few months after VDSL was rolled out in the area in question during the period 2011-2015. For such parties fit was made impossible to upgrade their systems from ADSL to VDSL and compete with Mila in provision of bitstream service, but they rather had to move their retail business over to wholesale purchase of bitstream on Mila VDSL systems as no other infrastructure company was operating there, and thus moved down the investment ladder.

2368. With respect to other disputes on access, in connection with Mila VDSL roll-out one can mention the PTA Decision no. 34/2014 as ECOI considered that Mila had not had the right to deny Snerpa certain specific inter-cabinet connections in Holtahverfi in Ísafjörður and Mila was considered to have breached the non-discrimination obligation by not providing Snerpa with adequate information and instructions with regards to VDSL - roll-out in the district. ECOI considered the Snerpa access requirements in some instances not to be fair and reasonable but instructed Mila to resolve that part of the access needs by offering VULA access. From the time that the Mila reference offer was revised with respect to VULA access, no player has seen an advantage in using it, as the pricing is such that economy of scale needs to be so high for it to be realistic and there are few if any such players in this country with the exception of Siminn, but Siminn does however not purchase such access from Mila.

2369. As previously stated, Mila incentive to refuse or complicate access to its networks is significantly less now than when the company was part of the Siminn Group. Though the Siminn Group was a thing of the past subsequent to the Ardian purchase of Mila at the end of September 2022, there are still as previously stated, very strong common interests and commercial connections between the companies, and in addition to this CA and ECOI consider that impact of vertical integration between the companies still exists. Only time will tell whether this impact will continue to exist. According to a long-term wholesale agreement between the companies, Mila is Siminn's priority supplier with respect to the wholesale

services in question on the relevant wholesale markets and Siminn must purchase at least 80% of its total connections from Mila. It is clear that this latitude is only used in part, at least up to this point in time. Mila has thus clear interests in maximum success for Siminn on the retail market. There could therefore still be an incentive in place formula to favour Siminn at the cost of other retailers, although this incentive should by the nature of things be less than when the companies were members of the same company group.

2370. Throughout the years, Mila (previously the Siminn Group) made determined efforts to acquire dark fibre from Ljósleiðarinn (access to market 3a), like that being offered by TT. The Ljósleiðarinn business model has from the start been based on providing only access to bitstream service over the company's fibre network, except two larger parties on the electronic communications market. It cannot be seen that retailers have on the other hand requested such local loop access from Ljósleiðarinn, at least not in recent years, as retail companies have been moving down the ladder of investment and choose to spend less on investments in fixed line service and to rather purchase first and foremost bitstream access from network operators. As has been previously stated, almost all Mila external sales on fixed line network connections take place on market 3b. One result of this is that Mila has from the year 2016, conducted vigorous fibre roll-out, among other things in those areas where Ljósleiðarinn operates, and parallel fibre network deployment is therefore generally quite substantial in the most densely populated areas, and is increasing rapidly.

2371. ECOI cannot see that obliging Ljósleiðarinn to provide access on market 3a is in accordance with proportionality, nor is it conducive to increasing competition on electronic communication markets or supporting the deployment of high-capacity networks and thus supporting infrastructure competition. For this reason, access to the Ljósleiðarinn fibre network on market 3b should be adequate to support competition on downstream retail markets in the area where Ljósleiðarinn is considered to have significant market power. In the opinion of ECOI, the obligation that Ljósleiðarinn provide access to ducts and conduits and hosting in the area where the company is considered to have significant market power, is more likely to support increased infrastructure competition there than access to dark fibre. Interests of retailers are then assured with the above specified 3b access.

Competition problems where characteristics of vertical integration are manifest etc.

2372. While the Siminn Group existed, it showed behaviour in many instances which in the opinion of the company's competitors could be conducive to making it difficult for them to find a footing on Market 3a and on the downstream wholesale market (Market 3b).

2373. An example of that relates to the development of a fibre network in Húsavík in Norðurþing during in the years 2019 and 2020.this Tengir[403] and Mila were granted

[403] Tengir has a direct commercial connection with end users with regards to, connections to the company's fibre system. The company does, however, not provide any retail service like Internet service, TV service or voice telephony service. Tengir has a sales representative at its disposal that contacts customers (consumers and companies) and sells them fibre connections. Subsequently an order is sent to the service provider to the effect that the party in question has ordered fibre from Tengir for his electronic communications service, which is done either by Tengir or the customer after having discussed with a Tengir employee. Then the service provider can also send an order directly to Tengir in cooperation with the customer, without Tengir being involved. Service providers have information on where the Tengir fibre is located and can contact customers and offer them a

permission by the Competition Authority[404] to cooperate on deploying fibre in Húsavík. In the application from the companies to CA it was stated among other things that the basis for the cooperation was among other things to speed up user access to fibre in Húsavík, increase customer choice, minimise damage from civil works and inconvenience for inhabitants and to thus support increased competition on the electronic communications market for the benefit of consumers. Furthermore, to provide consumers with a fair share in the advantages gained from the positive economic impact of the cooperation. It was finally stated that the cooperation should not give the parties the opportunity to prevent competition between them as each party would, as before, operate his own independent fibre network and sell service providers electronic communications services in wholesale. The Competition Authority gave its authorisation for the cooperation in question and made no comments on the company's assessment of the impact of the agreement, as it was limited to using the same civil works to deploy to fibre networks that would be technically separated and independent and thus did not damage the basis for competition for the customers in question. It would also be assured that the cooperation was limited to this and did not constitute any collusion on other aspects, such as price or service to customers.

2374. In the light of the above, two fibre access networks were deployed, one owned by Mila and the other owned by Tengir, but the civil works were shared. After Tengir began marketing its fibre connections in the town, it came to light that Mila refused to connect its bitstream equipment with the Tengir fibre as had been the custom in the Tengir operating territory where there are fibre networks owned by both parties, as is the case in Akureyri, Dalvík and Hrafnagil, this means that customers of Siminn and Hringdu who only used Mila bitstream service, cannot purchase a fibre connection from Tengir. At the same time, Siminn did not accept a request from Tengir that the company connect to Tengir bitstream equipment in the area, as the company does on the corporate market, despite repeated offers from Tengir to Siminn [...], most recently in the year 2023. Siminn has a very large market share of the retail market for Internet connections in this area, (about 80% in Norðurþing where the Húsavík urban area is located and where the large majority of municipality residents live), as elsewhere, and this means that the use of the Tengir network will not be as the company expected when it embarked on the project. Siminn said in the run-up to the ECOI Decision no. 5/2021 that it was preparing to make an agreement with Tengir on bitstream access, but this had not yet happened, despite the fact that Tengir had long sought after such transactions with Siminn [...], and in addition to this Siminn had latitude pursuant to the wholesale agreement between Siminn and Mila to purchase a significant amount of bitstream connections from parties other than Mila and has only use the part of that latitude today. Elsewhere in Tengir operational territory, Mila has up to this point in time set up bitstream equipment on the Tengir fibre as described above.

2375. Before Tengir started the above specified cooperation with Mila, the company conducted an assessment of the marketing basis for the project. According to Tengir, replies were requested from both Mila and Siminn to find out whether customers on Mila GPON

fibre connection with Tengir. Regardless of which way is chosen, the customer pays Tengir directly for the line charge and pays the service provider for other service through the connection.

[404] See CA Decision no. 26/2019 from 8 August 2019.

would have the option of Tengir fibre in Húsavík.[405] In the Mila reply, it was stated that no decision had been made in this connection, but that Mila had generally chosen to purchase only access to fibre owned by other parties when the company did not have its own fibre system. Mila could not at this stage provide an answer on future business or service to customers. Should the situation arise where a Mila customer (service provider) asked to have bitstream service through a local loop of another party, then this would be considered. According to the representative of Tengir, it was said at a meeting with Mila prior to the civil works that the same arrangement would be followed in Húsavík as was practised elsewhere in the Tengir operational territory where both companies operated fibre. In an email from a Tengir representative to the Siminn product manager, it was stated that preparation was taking place for deploying fibre at Húsavík, where fibre from both Mila and Tengir would be on offer, and the representative wanted to check with Siminn whether the company would definitely offer its service through the Tengir local loop network at that location. The Siminn product manager answered in the affirmative and said that Siminn would of course take part in the development in Húsavík. Tengir had then, subsequent to the above specified communications between Tengir and Mila, decided to take part in the civil works in question.

2376. Tengir had subsequently made a long-term agreement on hosting for its facilities and made a 12-month binding agreement with customers that were receiving service from Siminn and other service providers which was such that customers that commit themselves to paying monthly charge for fibre for 12 months would receive in-house work at a discount. It soon came to light that requests from the service providers in question were not processed by Mila. When an explanation was requested from Mila, it transpired that the company planned to only use its own fibre in Húsavík, as Mila considered that served its interests best. Mila made its decisions independent of others, including Siminn, and did not know that company's intentions.

2377. In the light of the above, in the opinion of Tengir, this had represented significant failed assumptions for the above specified joint investment and the company needed to, among other things, invalidate the above specified binding agreement with the customers who were receiving service from Siminn and from other service providers, but the in-house work was nevertheless conducted with attendant losses, as the customers could not use the Tengir fibre subsequent to this. Use of the Tengir fibre system in Húsavík had been much less than the company had planned for the above reasons, while the company had invested significant funds in the project. Mila had subsequently not replied to Tengir questions about the matter and the answers provided by Siminn In 2021 to the effect that the company's business system did not allow for connection to the Tengir bitstream system on the residential market in the same manner as on the corporate market. It would take a long time to upgrade the system, but it might be possible to look at that later.

2378. It was stated in the run-up to the X Decision no. 5/2021, but it was the view of Tengir that the Siminn Group had prevented competition in music on the retail markets in question, quite the opposite of what had been expected with the co-investment and see a decision that

[405] It is worthy of note that the service providers. Siminn, Nova and Hringdu use Mila GPON in this area. Sýn has used Tengir bitstream service in the area. Nova has recently made an agreement with TT, dated 22 September 2023 on bitstream access to Tengir fibre network. It is then not likely that Nova will also enter the Tengir bitstream system, in addition to the Mila bitstream system, in Húsavík.

had authorised the cooperation in question. Given the current situation in Húsavík, neither consumers nor service providers that sold among other things, Internet service, had in fact any choice on whether the Tengir fibre were used, or that of Mila.

2379. In Mila comments on the preliminary draft to the market analysis which was completed with ECOI Decision no. 5/2021, the company stated that the case had been presented from the viewpoint of Tengir and that ECOI had made no attempt to get the Mila opinion on the "insinuations", as Mila chose to call the above specified Tengir complaint. Mila said that the fact was that it cost the Mila bitstream system ISK 312 per month to have access to the Tengir fibre outside Akureyri (ISK 212 in Akureyri). This charge was not collected by Tengir for its own bitstream users or for self-supply. Mila thus considered there to be a normal commercial viewpoint behind this decision, i.e. to minimise the cost of providing bitstream service.

2380. In order to react to the above, which ECOI considered constituted a competition problem, ECOI imposed an obligation on Mila on market 3b (access obligation) in ECOI Decision no. 5/2021 to connect its bitstream equipment with Tengir fibre local loops, and with those of other network operators that might be in the same position as Tengir, if Tengir or the relevant electronic communications company so requested, given that the network operator in question paid the cost of such installation and a reasonable additional operating cost which may be created for Mila by this, while Siminn did not connect to the fibre system of the network operators in question in a specific area. ECOI could decide what reasonable start-up and operational costs should be in such instances, should it be disputed between the parties. One can therefore say that this obligation had been conditional in such a manner that Siminn could, by making an agreement on bitstream access with a party other than Mila, release Mila from the obligation. There is further detail on this obligation in paragraph 2059 in the above specified ECOI decision:

> "Mila has furthermore not provided its bitstream service on the Tengir parallel fibre network in Húsavík. This means that consumers in Húsavík that purchase service from Siminn do not have the option of connecting to the Tengir fibre network in that town, while Siminn does not connect to the Tengir fibre network. The danger is that this development can continue at other locations where Tengir and Mila deploy parallel fibre networks. ECOI therefore imposes an obligation on Mila to connect its bitstream equipment with Tengir fibre local loops, and with those of other network operators that may be in the same position as Tengir should the relevant party so request, given that the network operators in question pay the cost of such installation and a reasonable additional operating cost which may be created for Mila by this, while Siminn does not connect the fibre system of the network operators in question in a specific area. ECOI can decide what reasonable start-up and operational costs shall be in such instances, should it be disputed between the parties."

2381. This obligation was never implemented as the rulings committee (RCEC) for electronic communications and postal affairs (RCEC) postponed its legal impact with a ruling on 15 December 2021.

2382. This with the RCEC Decision dated 29 December 2022, the committee voided this claim and referred to this ECOI having in its comments during the proceedings on the claim for postponement of legal impact, argued that the purpose of this obligation was to counteract

the impact of vertical integration between Siminn and Mila.[406] As such integration was no longer in place, it was not possible to assert that there was still a need to impose the obligation. In other respects, the committee did not discuss this obligation and did not take a material position on whether ECOI had any right to impose such an obligation if reference had not been made to vertical integration between Siminn and Mila.

2383. In its appeal, Mila argued that the obligation in question, which Mila called a "purchase obligation", was without precedence, lacked legality and was not consistent with proportionality. With this obligation, the company was put in the position that it was not only obliged to provide access to extreme over its fibre local loops for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, but Mila also had to connect its bitstream equipment with the local loops of its competitors and offers service on them, regardless of whether Mila had itself developed and funded its own infrastructure specifically for the purpose of offering its bitstream service. The obligation was inappropriate and without precedent in European law. The obligation brought the risk that the value of investments made by Mila might diminish and that it might lessen the likelihood of Mila taking the initiative to cooperate with other parties in building parallel infrastructure in the same areas in the future. ECOI had gone further with the obligation than was encompassed within the limits of the law, including the European regulatory framework. The legality principle of the Constitution makes stricter requirements than general rules for legality and one therefore had to then particular into account when freedom to work was restricted. Then there was also always the fact that even in areas where Mila itself, at considerable cost and on commercial grounds, had developed its own fibre network, Mila was obliged suddenly to provide service over a network of a competitor that would thus create at the same time, retrospectively, non-refundable and in fact sunk cost.[407]

2384. As previously stated, the ruling committee did not take a material position on this Mila view but rather voided the obligation on the grounds that it had been grounded on the view that Siminn and Mila were within the same company group, which was no longer the case. This the committee therefore did not take a position on whether such an obligation was as such authorised if reference was not made to the view on the company group.

2385. In the ruling it was stated that the appealed ECOI decision had been based on the criterion that Mila and Siminn belonged to the same company group. It was clear that after 15 September 2022, this had changed. Although there *were still some* connections between Mila and Siminn as a result of a wholesale agreement that was in force between them, it was not clear whether it was possible to apply milder measures to counteract damaging impact of those connections on competition on electronic communications markets. The ruling committee therefore deemed it proper to rescind the imposition of specific obligations that related to the existence of the Siminn Group from and including 15 September 2023.

[406] In paragraph 37 of the RCEC ruling from 15 December 2021, on the postponement of legal impact, it states that ECOI had not specified that intention had been with this obligation to resolve a problem resulting from integration between Siminn and Mila.

[407] Here one can point out that Mila investment costs in the area in question fell significantly as a result of the joint project with TT.

2386. Mila and Tengir now cooperate on joint fibre roll-out in Raufarhöfn, and also in Norðurþing. It must be considered likely that the same situation could arise there and in Húsavík if Siminn does not make an agreement on access to the Tengir bitstream system or if Mila does not connect its bitstream equipment to the Tengir fibre network.

2387. On 22 September 2023, Tengir and Nova made a wholesale agreement. [...]

2388. The agreement came into force [...]

2389. In Appendix 1 in the agreement there is discussion on Tengir fibre network, which is structured with point-to-point topology. It is specified that [...]

2390. In an email to Tengir dated 11 October 2023, which contained answers to a number of queries from FST it was among other things stated that [...].

2391. Tengir then stated that [...].

2392. At the beginning of October 2023, ECOI requested information from Tengir and Siminn on whether there was any likelihood that Siminn, which as previously stated is very strong in retail in the Tengir operational territory, would during the lifetime of the analysis purchase bitstream access from Tengir in the Tengir operational territory, which could change the position on the relevant wholesale markets, among other things in Norðurþing.

2393. In the reply from Tengir dated 11 October 2023 it was stated that [...].

2394. Is then stated in a Tengir reply that [...]

2395. ECOI also asked Tengir about the company's cooperative project with Mila in Raufarhöfn, which is a small urban nucleus in Norðurþing. In the Tengir reply stated that [...]

2396. In Siemens answered dated 10 October 2023, two are query from ECOI, on whether Siminn planned to purchase bitstream service from Tengir in that company's operational territory, not least in Norðurþing, it was stated that [...].

2397. In this connection, ECOI considers it appropriate to make a short explanation of the long-term service agreement between Mila and Siminn. It is not necessary that an agreement prescribes that all transactions are purchases are covered by the agreement for it to be deemed an exclusive agreement according to competition law, but it rather suffices that almost all transactions do that. If an agreement leads, directly or indirectly, to a customer being obliged or encouraged to trade with a company with market dominance for 80% of its need for a specific product or more, that has been considered the equivalent of exclusive purchase according to competition law.

2398. With the above one is not saying that any kind of long-term exclusive agreement is unlawful when a company with market dominance is involved. The nature of the trading of course are of primary importance, and whether the trading constitutes a need for parties to undertake trades for an extended period of time. If a seller with market dominance for example needs to particularly invest in facilities or make other investments to provide a purchaser with a product or service, there is generally nothing untoward about parties making

an agreement on some kind of exclusivity for a specific period of time, such that the interests resulting from the necessary investments are assured. The same applies if other reasonable views justify making an exclusive agreement for a longer period of time. In the case of a company with market dominance however it needs to be possible to justify an exclusive agreement with respect to such considerations while other companies enjoy the main principle of freedom of contract.

2399. There is discussion on the above in CA Decision no. 16/2023 in the case of the merger between Ardian and Mila, from the point of view of vertical instructions from the EU Commission. In this connection, CA made our special examination of the wholesale agreement between Siminn and Mila, which was submitted in this case. It prescribes that Siminn purchase all main wholesale procurements of electronic communications service for 20+5 years and constituted extensive exclusive purchase rights for Mila vis-à-vis Siminn. The agreement resulted in a long time Siminn commitment for transacting with Mila. At the same time, Mila competitors where to a large degree excluded from transactions with the largest provider of electronic communications service in the country.

2400. The wholesale agreement between Siminn and Mila contained furthermore provisions on close vertical integration between the companies that had the objective or the effect of preventing competition. It could thus not be concluded otherwise than that the agreement without amendments would in a damaging and unlawful manner have limited Siminn possibilities of making agreements with other wholesalers of electronic communications service and operators of electronic communications infrastructure. The agreement was also deemed conducive to maintaining various characteristics of vertical integration that the sale of Mila would otherwise have nullified.

2401. In the above specified CA Decision, reference is made to guidelines from the EU Commission from 30 June 2022 on vertical competition barriers and to regulation number 2022/720. In paragraph 298 it states:

> "Under the heading of 'single branding' fall those agreements which have as their main element the fact that the buyer is obliged or induced to concentrate its orders for a particular type of product with one supplier. That requirement can be found amongst others in non-compete and quantity forcing clauses agreed with the buyer. A non-compete arrangement is based on an obligation or incentive scheme which causes the buyer to purchase more than 80 % of its requirements on a particular market from only one supplier. This does not mean that the buyer must buy directly from the supplier, but that the buyer must de facto not buy, sell or incorporate competing goods or services. Quantity forcing on the buyer is a weaker form of non-compete, where incentives or obligations agreed between the supplier and the buyer result in the latter concentrating its purchases to a large extent with one supplier. Quantity forcing may, for example, take the form of minimum purchase requirements, stocking requirements or non-linear pricing, such as conditional rebate schemes or a two-part tariff (fixed fee plus a price per unit)."

2402. In the same paragraph it states that "English clause" can have the same impact as exclusive purchase:

"A so-called English clause, requiring the buyer to report any better offer and allowing the buyer to accept such an offer only if the supplier does not match it, can be expected to have the same effect as a single branding obligation, especially when the buyer has to reveal who makes the better offer."

2403. In paragraph 314 states that exclusive purchase, which does not enjoy exemption by regulation 2022/720) can enjoy exemption of paragraph 3 of Article 101 of TFEU if that is the only reliable means to achieve specific efficiencies. In paragraph 315 it states this:

„In the case of a relationship-specific investment made by the supplier, as described in paragraph (16), point (e), a non-compete or quantity forcing obligation for the period of depreciation of the investment will, in general, fulfil the conditions of Article 101 (3) of the Treaty. In the case of high relationship-specific investments, a noncompete obligation exceeding five years may be justified. A relationship-specific investment could, for instance, be the installation or adaptation of equipment by the supplier when that equipment can be used afterwards only to produce components for a particular buyer. General or market-specific investments in (extra) capacity are generally not relationship-specific investments. However, where a supplier creates new capacity specifically linked to the operations of a particular buyer, for instance a company producing metal cans which creates new capacity to produce cans in or next to the canning factory of a food producer, that new capacity may only be economically viable when producing for that particular customer, in which case the investment would be considered to be relationship specific."

2404. In the CA investigation of the merger between Ardian and Mila, the wholesale agreement and its provisions were subjected to detailed scrutiny, among other things at the request of the parties to the merger, because of course connections at the time of the merger, its relative importance for the sale of Mila to a new owner and potential competitive impact of the agreement subject to the merger. After that investigation, it was the CA conclusion that the wholesale agreement as part of the merger would constitute significant distortion of competition. This preliminary assessment was submitted in the CA rejection form to the parties to the merger, dated 1 July 2022. Without consideration for other competitive impacts of the merger, the unamended wholesale agreement on its own gave reason for intervention by CA.

2405. In the opinion of CA, the wholesale agreement, unamended, was therefore in reality an exclusive agreement with specific narrow exceptions and "English clause" and damaging contractual provisions for a long ban on competition and close vertical cooperation. It was stated that Mila was a supplier with a dominant market position in the relevant wholesale service and Siminn was the largest purchaser of electronic communications service in this country. In the opinion of CA, the wholesale agreement would have resulted in significantly damaging impact and significant disruption of competition, that demanded intervention.

2406. This with regards to the wholesale agreement in the case and to competitive problems resulting from the agreement, the parties to the merger proposals and undertook formally pursuant to a settlement, to make the following amendments to the wholesale agreement. Mila's single source procurement and monopoly on providing wholesale service to Siminn would be limited. The initial agreement allowed for a comprehensive monopoly for Mila to

provide Siminn with all the wholesale service that Siminn required. The parties to the agreement proposed significant amendments to the single source procurement provisions in the agreement that made it possible for Siminn to deal with other parties for up to 20% of wholesale service in areas where Mila had the strongest position. In this way, other infrastructure companies were given the opportunity to offer service to Siminn, while at the same time, Siminn's competitive restraint vis-à-vis Mila would increase. Provisions were removed that ensured Mila the right to receive information on, and to match offers from other Siminn suppliers, more specifically the "English provision", that would have guaranteed a dominant position for Mila vis-à-vis its competitors in agreements on wholesale service for Siminn, in addition to the monopoly referred to here above. Additionally, the ban on competition from Siminn and Mila were deleted to a significant degree, and cooperation between the companies was substantially decreased.

2407. With changes that were made on the wholesale agreement, in the conditions of chapter II of the settlement between Ardian and Mila with CA, and having in mind the changes that occurred to the competitive environment of electronic communications infrastructure while the investigation was taking place, it was the conclusion of the calm authority that there were no grounds for further intervention regarding the wholesale agreement in the merger case, i.e. pursuant to Article 17 of the Competition Act. As before, Siminn was obliged to purchase up to 80% of wholesale service from Mila where the company had the strongest position, among other things on the relevant wholesale markets in this case, and even more or 100%, where Mila was not in as strong a position.

2408. In the CA decision, it was specified that the conclusion would not bind CA in its assessment of the impact of the wholesale agreement in future cases, such as because of new complaints or subsequent to review of older settlements with the Siminn Group. One must also mention that in the CA Decision no. 24/2023: Siminn HF request for revision of the settlement between the company and the Competition Authority named in Decision no. 6/2015, it states that the wholesale agreement in question between Siminn and Mila and other connections between the companies constitute continued rich common interests, that manifests at least in part characteristics of vertical integration and can have an impact on the markets on which Siminn operates.

2409. With the above in mind, and despite the fact that the Siminn Group no longer exists and that the ownership and management connections between Mila and Siminn have been severed, ECOI believes that significant characteristics of vertical integration still exist between the companies which must be considered a competitive problem on market 3b, and as applicable on market 3a, in the light of the above. Interests of the companies appear to be tightly bound, despite the fact that ownership connections have been severed. Siminn appears to be very dependent on Mila and can in reality not connect to networks of parties other than Mila without Mila being an intermediary, [...]. In the opinion of ECOI it is extremely likely that the situation in Húsavík, and as applicable in Raufarhöfn and also in Norðurþing, will therefore remain unchanged and without intervention by ECOI, the same or similar as existed when the companies were vertically integrated companies within the same company group, i.e. That the Siminn position will continue to be very strong on the retail market and the position of Mila very strong on the relevant wholesale market in Norðurþing, where inhabitants of Húsavík and Raufarhöfn represent a large proportion of the inhabitants of Norðurþing.

2410. It should however be noted that although Mila has significant market power in most municipalities in the Tengir operational territory, Mila only has such a position in four municipalities in the operational territory on market 3a, i.e. in Norðurþing, Fjallabyggð, Langanesbyggð and Húnaþing vestra. The relevant competition problems can therefore not exist in areas where Mila does not have significant market power.

2411. Tengir has drawn attention to more issues that relate to Mila behaviour where Tengir states that they make things difficult for the company in competition with Mila. Mila had for example announced at the end of February 2020, that an additional charge would be imposed on GPON connections that go through the Tengir network. This could in the opinion of Tengir direct service providers from business with Tengir, as they will need to pay an additional charge for each user connected through the Tengir fibre network that used Mila endpoint equipment. This could hinder competition on the relevant market and on downstream markets. Mila referred on the other hand to the fact that the additional charge in question was the same as the above specified additional charge that the Mila access system needed to pay for access to the Tengir fibre network. This additional charge was a large part of Mila bitstream charge in the area and the company could no longer absorb this.

2412. Tengir believes that requests for a connection with customers of Siminn and Hringdu that use endpoint equipment from Mila to the Tengir fibre network are not processed reasonably and that work requests are delayed and/or lost. Furthermore, connection to the Mila fibre local loop is a default selection in the service requests system of Siminn and Mila, even where a request for connection originates from a Tengir sales representative. There have also been instances where a customer moves home, i.e. from a home where there is only fibre from Tengir available to the home where there is fibre from both Tengir and Mila are the customer in question is automatically connected to the Mila fibre network, despite not having asked for this.

2413. Then, during recent years, Mila had decreased business with Tengir and its contractors for on-site service, according to Tengir. Mila had decided to make an agreement with its own contractors in urban areas in the Tengir operating territory but continued to use Tengir contractors in the countryside. This requires two visits to activate the Tengir fibre. It increases the level of complexity, takes more time and increases inconvenience for Tengir customers. This does on the other hand not happen when Mila uses its own fibre. Siminn customers thus suffer much less inconvenience if they use the Mila fibre. As a countermeasure to this, Tengir has taken on additional costs to complete set up for customers to guarantee them good service. Siminn customers on the Tengir fibre have increasingly been receiving invoices for installation of equipment. Cases regularly occurred where customers received an invoice for an upgrade which should have been free and are dissatisfied with the Tengir sales representative as a result. This problem arises when Siminn customers had been moved from Mila copper to Mila fibre. Mila said there was nothing unusual with Mila deciding to switch partner when it was among other things, more economic.

2414. As has been previously stated here above in the discussion on the Húsavík case, it was stated in emails from Mila to Tengir, that the company generally purchased only access to fibre of other parties at locations where Mila had no fibre. This is however not generally the case in the Tengir operational territory, except in Húsavík, and it is also likely that it will also be the case in Raufarhöfn when the joint fibre roll-out by the companies is completed, and

both companies are in Norðurþing where Mila has a dominant position, both on markets 3a and 3b. In the past months, Tengir has regularly requested that Mila offer bitstream service on the Tengir fibre network at Húsavík, among other things because of pressure from Siminn customers in that town, but Mila representatives have taken the position that they intend to only offer bitstream service over their own fibre at Húsavík, as at other locations where the company has fibre. Mila considers that to be a normal arrangement. Mila had however not informed Tengir formally that the company would move Tengir customers unilaterally from the Tengir network over to the Mila fibre network where both networks were available.

2415. Tengir has pointed out that such a development could have serious consequences for competition in these areas, but considers, however, that Mila is not authorised to cut the business connection between Tengir and the company's customers. Tengir furthermore pointed out the risks that would result if Mila should deny connecting a new customer through the Tengir fibre network at more locations than at Húsavík where Mila has its own fibre network. Such behaviour would prevent Tengir customers from having access to service providers that only used the Mila bitstream system, including Siminn, which is by far the largest retailer in the country, and which is in a very strong position in the Tengir operational territory. This would mean that these service providers would only have the option of offering the Tengir fibre, where Mila did not have its own fibre network, and in other areas, customers would be moved unilaterally from the Tengir fibre to the Mila fibre. With increased fibre deployment by Mila in the Tengir operational territory, such a policy would have a significant impact on the operational grounds for Tengir, as a large part of Tengir residential customers today had services from Siminn.

2416. With the above in mind, E COI considers it clear in its Decision no. 5/2021, that the behaviour of the Siminn Group caused Tengir various kinds of inconvenience and problems, that must be considered competition problems on the relevant wholesale market 3b and is applicable on the adjacent market 3a. In this instance, the Siminn Group was leveraging its vertical integration. It was clear that Siminn were by far the largest retailer in the country on the related retail market and it appeared to be the policy of the Group not to offer service over the Tengir fibre network where Mila offered its own fibre connections, and even VDSL connections unless the customer in question requested a fibre connection instead of VDSL and such a connection was not available from Mila.

2417. In order to react to the above, which ECOI assessed as constituting a competition problem, ECOI impose an obligation on Mila on market 3b (access obligation) in ECOI Decision no. 5/2021 that Mila should not remove its bitstream equipment or service over fibre networks of network operators other than Mila where Mila had leased dark fibre against the wishes of the network operators in question, while Siminn did not offer service over bitstream systems of such parties. To prevent such parties from being able to increase the charges in an abnormal manner that Mila needed to pay for such access, Mila could refer the question to ECOI about whether their charges or conditions were fair and reasonable. ECOI would decide such a matter with a decision. If ECOI deemed price or other conditions set by the parties in question to be abnormal, Mila would be free of this obligation, should they not comply with the ECOI decision. ECOI then reminded that Mila would be free of this obligation, if Siminn made an agreement with the parties in question for bitstream access to the fibre networks of the parties in question. ECOI furthermore imposed the obligation on Mila that the Mila bitstream unit was not authorised to discriminate on the basis of the underlying network.

2418. As previously stated, Mila appealed the above decision, among other things its obligations, and demanded a postponement of its legal impact. This was rejected by the Appellate Committee with its decision from 15 December 2021. In paragraph 60 in the ruling in question, the following is stated:

> "With respect to the part of the appeal decision that relates on the one hand to an obligation for the appellant to refrain from withdrawing its bitstream equipment on other networks and on the other hand to an obligation that the appellant's bitstream unit is not authorised to discriminate on the basis of underlying network, the committee considers, subsequent to comprehensive assessment as described above, that the interests for not postponing the legal impact of these elements are greater than the interests of the appellant in having it postponed. The committee has particularly examined the public and private interests in question, taking into account the ensuring of active competition and that the obligations are not conducive to the same situation occurring again even though the decision be rescinded. In other respects, reference is made to prior discussion on the appellant's main claim for postponement of legal impact of the appeal decision in its entirety."

2419. And it is further stated about this issue, in paragraph 61 of the ruling in question:

> "The committee also took into account grounds for the appealed decision and the views of ECOI presented in comments, when assessing whether to endorsement postponement of the legal impact of these obligations. With respect to the obligation that the appellant should not withdraw its bitstream equipment from other networks, it is clear that the appellant will be free of this obligation if Siminn makes an agreement on bitstream access to the fibre network of other networks."

2420. With its ruling dated 29 December 2022 the ruling committee makes no changes to be specified obligations, despite the fact that the Siminn Group no longer exists.

2421. With the above in mind, and despite the fact that the Siminn Group no longer exists and that the ownership and management connections between Mila and Siminn have been severed, ECOI believes that significant characteristics of vertical integration still exist between the companies which must be considered a competitive problem on market 3b, and as applicable on market 3a, in the light of the above. Interests of the companies appear to be tightly bound, despite the fact that ownership connections have been severed. Siminn appears to be very dependent on Mila and can in reality not connect to networks of parties other than Mila without Mila being an intermediary, [...].

2422. It should however be noted that although Mila has significant market power on market 3b in most municipalities in the Tengir operational territory, Mila only has such a position in four municipalities in the operational territory on market 3a, i.e. in Norðurþing, Fjallabyggð, Langanesbyggð and Húnaþing vestra. The relevant competition problems can therefore not exist in areas where Mila does not have significant market power.

2423. During recent years, Snerpa has deployed fibre local loops in the West Fjords, which reach more than 1,400 households and companies, first and foremost in Ísafjarðarbær and in Bolungarvíkurkaupstaður. Mila has not made an agreement with that company on access to

this fibre, despite the fact that Mila has a limited supply of fibre in the area. Negotiations have been ongoing since the beginning of 2020, but progress has stranded or been delayed at Mila. Nor does seem in provide its electronic communications service through the Snerpa network. Earlier in this analysis, there was a short explanation of the dispute between Snerpa and Mila, see PTA Decision no. 34/2014, where the conclusion was that Mila had breached the obligations in the prior PTA market analysis of the relevant wholesale markets from 2014 in connection with the Mila conversion of its copper network in Ísafjarðarbær from ADSL to VDSL. According to Snerpa, this dispute led to the company commencing its own fibre roll-out.

2424. Austurljós at Egilsstaðir in East Iceland is a small local electronic communications network that has commenced fibre deployment at Egilsstaðir and surrounding areas. The company has deployed about 300-400 connections and plans to expand its network more broadly in East Iceland in step with its financial capability and circumstances, and according to demand. Mila was less than enthusiastic with regards to a request from Austurljós that it operate its bitstream system on the Austurljós network, and the latter company therefore decided to deploy its own bitstream system on its own fibre network. Nor does Siminn provide its electronic communications service through the Austurljós network. In 2021, Mila notified major plans to roll out fibre in Egilsstaðir, while Mila fibre roll-out plans are significantly less ambitious in other urban nuclei in East Iceland where Austurljós has commenced roll-out.

2425. Ljósleiðarinn is a Mila competitor in the south-west part of the country and various disputes have arisen between the companies and in reality, between Ljósleiðarinn and the Siminn former group. Siminn has for example never offered its services through the Ljósleiðarinn fibre network, despite the fact that Ljósleiðarinn had often requested this over a period of years and has made various offers to Siminn to access its network. In July 2020, shortly after the preliminary draft market analysis was completed with ECOI Decision no. 5/2021 was submitted for national consultation, there was however a sudden change in this matter when Siminn and Ljósleiðarinn made an agreement on Siminn bitstream access to the Ljósleiðarinn fibre network. The agreement allowed for Siminn commencing the provision of its service over the Ljósleiðarinn network in the first half of 2021, but it is now expected that this actually took place at the end of 2021. ECOI considers it quite remarkable that it took Siminn such a long time to develop software to connect to the Ljósleiðarinn network [...]. Given this agreement and the long term wholesale agreement between Mila and Siminn subsequent to the Siminn sale of Mila, ECOI considers it clear that the vast majority of Siminn customers will remain on the Mila network during the lifetime of this analysis, and that a large part of those Siminn customers that will be on the Ljósleiðarinn network will doubtless come from other service providers that have been on the Ljósleiðarinn network and are thus not moving from Mila.

2426. The behaviour of the former Siminn Group with respect to denial of access to TV service has doubtless had the impact of directing custom to a significant degree from the Ljósleiðarinn network over to the Mila network and of retaining customers on the Mila network, see PTA Decision no. 10/2018. In this decision, there is a detailed description of Siminn behaviour in this respect, and it was among other things, the conclusion of ECOI that Siminn had at no point in time shown genuine willingness to come to an agreement with Ljósleiðarinn during the years that the negotiations in question took place.

2427. ECOI considers that the examples given in this section show unequivocally that Mila, and prior to that the Siminn Group, has throughout the years employed various methods to make competition difficult for Mila competitors at wholesale level, despite obligations on Mila. ECOI does not expect otherwise than that this behaviour may continue during the lifetime of the analysis and that there is therefore an absolute need for appropriate obligations on Mila in those areas where the company is deemed to have significant market power, although the Siminn sale of Mila and the severance of ownership and management connections between Siminn and Mila should, if everything were an order, diminish such incentives. ECOI agrees with CA that time will tell in this matter in the coming months and years. ECOI considers that incorrect or inadequate information from Mila delays work on market analysis and increases the risk of wrong conclusions, which could require a review of the analysis with the attendant extra work.

7.5.3.5 Conclusion regarding competition problems related to significant market power on the relevant market 3b

2428. Obligations are imposed on companies with significant market power with the aim of combating real and/or potential problems in the field of competition on the market in question, and on the related wholesale Market 3a and related retail market. Problems in the field of competition, with the exception of problems that derive from market structure, refers to any kind of behaviour by a company with significant market power, which is intended or leads to competitors of the relevant company that has significant market power, being forced out of markets, which prevents potential new customers or competitors from entering the market and/or damages consumers' interests. When obligations are applied pursuant to the Act on Electronic Communications the reason does not need to be that a dominant market position, is being leveraged and it is not a criterion that the competition infringement has been committed, but it suffices that competition problems could possibly arise from the circumstances, among other things because of specific market structure, that are detrimental to the market.

2429. In the sections here above, a variety of potential and real competition problems are described in section 7.5 that are related to market 3b, and also that interaction with competition problems related to market 3a, as these markets are closely related. There was furthermore a description of competition problems or disadvantages on a related market for trunk line lease that can have an impact on the relevant wholesale markets 3a and 3b. Problems that are likely to occur on the relevant wholesale markets, including on the above specified market for leased lines, and that can have an impact on the relevant wholesale market three be, or on market 3a, if obligations where not in place on the market, can for example be manifested in denial of access, discrimination in pricing, cross subsidies, damaging predatory pricing, delays in negotiations and delivery, abnormal demands on counterparty, discrimination in quality, discrimination in provision of information or abuse of information from a counterparty. A company with significant market power in a specific area can furthermore have both an opportunity and incentive to abuse its position with respect to purchasers in a specific area by excessive pricing or discrimination in pricing.

2430. In discussion on problems related to significant market power in the relevant market, ECOI came to the conclusion that Ljósleiðarinn would not have the same guarantee that service providers will not switch their business to the Mila network, as Mila has a guarantee

for Siminn not moving its business to Ljósleiðarinn and/or Tengir to a significant degree, even though Siminn made an agreement with Ljósleiðarinn on bitstream access to the Ljósleiðarinn fibre network in July 2020. It is then clear that by far the largest proportion of Siminn customers will remain on the Mila electronic communications networks for the lifetime of the analysis. This means that potential Mila predatory pricing on the relevant market in specific areas, which the company's competitors find difficult or impossible to compete with, could create a substantial and serious competition problem in specific areas, or maintain market structure that does not support competition. Excessive pricing can furthermore become a problem and can damage consumers if there are no other available networks than Mila networks. The possibility for Mila to provide wholesale bundles that competitors could not compete with, could furthermore cause competition problems. This can also become a problem in the area where Ljósleiðarinn has significant market power.

2431. There was then discussion on vertical transfer of significant market power which manifests itself in vertically integrated companies with significant market power wholesale level, depending on circumstances in specific areas, endeavouring to transfer market power to a downstream market by excluding or working against competitors on those markets. ECOI came to the conclusion that Mila and Ljósleiðarinn could have the opportunity and incentive in those areas where they enjoy significant market power, to deny specific electronic communications companies access to market 3b, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access to market 3b. It was then considered that that under cover of a strong market position in specific areas on Market 3b, Mila, Tengir and Ljósleiðarinn could have ability and incentives to use predatory pricing on downstream markets at wholesale level, in those areas where the companies have significant market power and thus have a damaging impact on competition in the long term by increasing price where there was no or little competition in place. The possibility for Mila to provide wholesale bundles that competitors could not compete with, could furthermore cause competition problems.

2432. There was then discussion on vertical transfer of significant market power which manifests itself in vertically integrated companies with significant market power wholesale level, depending on circumstances in specific areas, endeavouring to transfer market power to a adjacent market 3a by excluding or working against competitors on those markets. ECOI came the conclusion that Mila and Ljósleiðarinn could have the opportunity and incentive in those areas where they enjoy significant market power, to deny specific electronic communications companies access to market 3b, and as relevant to market 3a, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on related markets, if obligations were not in place to oblige the companies to provide access, either to market 3b or 3a. It was then considered that that under cover of a strong market position in specific areas on Market 3b, Mila, Tengir and Ljósleiðarinn could have ability and incentives to use predatory pricing on downstream markets at wholesale level, in those areas where the companies have significant market power and thus have a damaging impact on competition in the long term by increasing price where there was no or little competition in place. In such a case, Mila's economy of scope and relative position on the adjacent trunk line lease market, to Mila's advantage, can cause competition problems on the relevant wholesale market 3b and/on the adjacent wholesale Market 3a.

2433. Above there was also a description of competition problems related to communications between Mila and Tengir in the Tengir operational territory, including in Húsavík. There it was stated among other things that despite the fact that the Siminn Group no longer exists and that the ownership and management connections between Mila and Siminn have been severed, ECOI believes that significant characteristics of vertical integration still exist between the companies which must be considered competitor problems in those areas where Mila has significant market power, including in Norðurþing, on market 3a, and as appropriate on adjacent market 3a. Interests of the companies appear to be tightly bound, despite the fact that ownership connections have been severed. Siminn appears to be very dependent on Mila and can in reality not connect to networks of parties other than Mila without Mila being an intermediary, [...]. In the opinion of ECOI it is extremely likely that the situation in Húsavík, and as applicable in Raufarhöfn and also in Norðurþing, will therefore remain unchanged and without intervention by ECOI, the same or similar as existed when the Mila and Siminn were vertically integrated companies within the same company group, i.e. That the Siminn position will continue to be very strong on the retail market and the position of Mila very strong on the relevant wholesale market in Norðurþing, where inhabitants of Húsavík and Raufarhöfn represent a large proportion of the inhabitants of Norðurþing.

2434. With all of the above in mind, identified and potential competition problems still exist, despite change circumstances on the market in the light of the Mila sale to Ardian. It is clear that there are still strong common interests between Siminn and Mila and the future must show whether these connections create an incentive for Mila to leverage its market power in a manner that inhibits competition. The conclusion was then reached that Mila and Ljósleiðarinn could have the opportunity and incentive in those areas where they have significant market power to deny specific easy companies access to market 3b, or to offer access are unacceptable terms that can be equated to denial. It was also considered that the companies had the capability and incentive to apply predatory pricing and excessive pricing on the relevant markets at wholesale level in those areas where the companies have significant market power. Significant characteristics of vertical integration still exist between Mila and Siminn, which could have a damaging impact on competition in those areas where Mila has significant market power. It is thus clear in the opinion of ECOI that obligations need to be imposed on those companies that enjoy significant market power in specific areas in order to endeavour to prevent or mitigate damaging consequences of the competition problems in question.

2435. In other respects, reference is made to the detailed discussion on competition problems on the relevant market in the sections here above.

7.6 Assessment of impact of the obligations in force on Míla

2436. Obligations imposed on Mila on the relevant wholesale markets with Decision 5/2021,[408] which was subsequently amended with the decision of the ruling committee for the electronic communications and postal affairs in case no. 3/2021, dated 29 December 2022, and the ECOI provisional Decision no. 9/2023 dated 15 September 2023, had ensured continuing wholesale access to the company's access networks and related facilities, such as hosting facilities and ducts and conduits. There are examples of problems in the provision of

[408] The decision replaced PTA Decision no. 21/2014 on the relevant markets.

access where some types of access are hardly technically feasible or are not economically feasible. In this way this for example difficult to provide access in street cabinets where media sell equipment has already been installed and shared access to PON topology fibre local loop or access to part of the local loop is hardly feasible, at least up to this point in time. Obligations enforce have by the nature of things, a direct impact on the access that electronic communications companies have to Mila local loop network and bitstream systems and related facilities, and also on the prices offered on the Mila copper network.

2437. In connection with work on preparing an EU Commission Recommendation on the relevant market from December 2020, the commission appointed WIK to prepare a report on the future of product and service markets in electronic communications that are dependent on ex-ante regulation. The report is dated 23 June 2020. It is stated there among other things that today, consumers and companies in member states had a choice of broadband service provider. In most instances this choice was the result of obligations that had been imposed on a company with significant market power on the relevant markets. If such obligations had been imposed, it was likely that the competitive level of the markets would diminish because of the magnitude of sunk costs for developing electronic communications infrastructure that has an impact on the deployment. It stated that if copper is taken out of the equation, there are only a very few countries where competitors have been able to double networks of prior state incumbents without such development being subject to an obligation for access to facilities, and such development has generally been limited to urban areas or to delineated areas where parties to the market a feast with limited competition and therefore themselves enjoy a strong market position in the area.[409] One can also see this development in Iceland, as those areas where local network operators have been successful in building their networks without using access to facilities owned by the former state monopoly incumbent, are urban and delineated areas, i.e. Ljósleiðarinn in Southwest Iceland, Snerpa in the West Fjords, Tengir and North Iceland Austurljós at Egilsstaðir in East Iceland.

2438. In the WIK report there are furthermore indications showing that when it comes to lifting ex-auntie obligations it is potentially possible to introduce the same kind of obligations for access to facilities in another manner. On the other hand, such commitments appear only to be implemented in sparsely populated areas which could mean that retail companies cannot provide as competitive an offer at all locations in the country.[410]

2439. In Iceland, most electronic communications companies have used Mila facilities as a result of the access obligations to these facilities that Mila (formerly Siminn) has been subject to for about 20 years. At many locations in the country, local networks have connected to Mila hosting, though this is not always the case. ECOI considers that although the obligations, and other obligations that ECOI has imposed on Mila, have thus encouraged service competition on the relevant markets in specific areas that has at the end of the day provided returns to consumers through increased offer, better quality and lower prices than would otherwise have been the case.

[409] WIK consult "Study on Future electronic communications product and service markets subject to ex-ante regulation https" (hereafter referred to as the "WIK Report") <://digital-strategy.ec.europa.eu/en/library/study-future-electronic-communications-product-and-service-markets-subject-ex-ante-regulation> bls. IV og Vl.
[410] WIK report, page V.

2440. In 17 further specified municipalities, milder obligations have applied to Mila from and with the above specified ECOI Decision no. 5/2021, including with respect to access to ducts and conduits and on notification of civil works. As was stated in sections 5 and 6 here above, obligations will now only be imposed on Mila in this instance in more specifically defined areas, and obligations will be lifted in other areas where the vast majority of inhabitants live.

2441. The above specified obligation on notification of civil works appears to have had a positive impact on the roll-out of fibre networks, see among other things joint projects by Mila and Ljósleiðarinn, for example in part of the Capital City Area, in Sveitarfélagið Árborg, in Reykjanesbær and in Sveitarfélagið Vogar, there are in addition to this, further plans for such joint projects between the companies. Míla and Tengir have had such cooperation in Húsavík and in Raufarhöfn in Norðurþing.

2442. On the other hand, the obligation for access to dots and conduits has up to this point in time not returned significant results, first and foremost because ECOI has not completed cost analysis of prices in this connection, and Mila competitors have complained about high prices for such access. Nor is there detailed information available on the location and condition of Mila ducts and conduits. According to obligations currently in force, Mila shall prepare a database which contains exact information on the location and condition of the company's ducts and conduits if a reasonable request for this is received from interested network operators.

2443. It is likely that the obligations that have been imposed on me along the relevant wholesale markets for a considerable period of time have had some impact on pricing in retail, as the price of local loop and bitstream lease is a significant element in the retail price of service Access Option 3 with Mila can enable all retailers to offer the service across the whole country. Retail competition is thus more varied than it would be if each party was bound to a local access network or a small trunk line network to a few locations, which would probably be the Capital City Area and larger urban nuclei. For this reason, one can consider this access to have been particularly useful to the countryside, though retail competition is still much less at most locations in the countryside than it is in the Capital City Area. It seems, however, that the substantial increase in the Siminn line charge and those of other retailers in recent years is independent of the price for lease of copper local loops. There has been considerable development in technical solutions and in products carried in packing by local loops in the past years. But one can say that the prices of the main packages during each period have changed little during the last years and seem to follow the consumer price index, though of amount of data included has increased and consumers therefore received more for their money.

2444. Siminn is the largest company on the retail market for Internet service in fixed line networks and the company's share has remained relatively stable in recent years, though it declined a little when the mobile network solution in question was added to the relevant market in this analysis. The company share in fixed line network solutions has however declined somewhat through the years, about 7.2% over a period of 17 years. Sýn has had the largest market share on this market since 2006. Then Nova, which for many years many years operated only on the mobile phone market, has grown rapidly in fixed line network connections since the company begun operating on that market in 2017. Hringdu, which started operations in 2011 has grown slowly and steadily in a stable manner and the company

had achieved 10% market share at the end of 2022 if one only considers fixed line networks and just under 10% when one takes into account the above specified mobile network solutions. For smaller electronic communications companies, bitstream access is very important, as many of these companies use Access Option 3 with Mila to be able to offer service across the whole country. The companies can also utilise local access at many locations across the country with Access Option 1 with Mila and can lease transfer to their operational base. Such access is therefore necessary to strengthen competition in service.

2445. In addition to this, the importance of bundles that contain electronic communications and TV service has increased considerably in recent years and Siminn position is extremely strong in this area, as the company's Heimilispakkinn enjoys great popularity among consumers and it appears that Siminn competitors find it difficult to compete with this. The proportion of Internet service sold as part of a bundle has been increasing in recent years, from 32% at end of year 2016 to 51% at end of year 2022. This has however remained almost unchanged between the years 2021 and 2022. Bundles that include both TV and Internet have increased from 32% of all public Internet service at end of year 2016 to 38% at end of year 2022.

2446. On the relevant wholesale markets, Mila is as before the largest with respect to a number of local loops and bitstream connections at national level. As the ECOI conclusion in this instance is that segmenting a number of geographic markets is more important to be able to examine the status in individual areas, than a national average. Mila is in a dominant position in a very large number of areas, which is the case with Tengir in a number of areas on market 3a, while Ljósleiðarinn has this status on one area on markets 3a and 3b and Austurljós in one area on market 3b. Here one must also take into account that Mila plans to continue phasing out its copper network in the coming years, which will mean that no electronic communications company will be likely to have an electronic communications network with national coverage at the end of the planned lifetime of the analysis, particularly on market 3a. Where Mila is not the owner of a local network, Mila on the other hand provides almost everywhere bitstream service and is will probably continue to be in that position at the end of the lifetime of the analysis.

2447. It is the opinion of ECOI that obligations on Mila on the relevant wholesale markets have during the last 20 years or so, had a positive impact on competition, particularly where other electronic communications companies are not operating or where they have small deployment and market share. The situation now is that ECOI considers it proper to come to the conclusion that active competition prevails in a large number of geographic markets, including the Capital City Area where the large majority of inhabitants live. As stated in sections 5 and 6 here above, the deployment of networks, market share and status of competition develops in significantly different manners by geographic area. In many areas, Mila still has a dominant position and ECOI therefore considers it important to maintain obligations, at least part of them, in those areas, as will be discussed in more detail in sections 8 (market 3a) and 11 (market 3b) here below.

8 Imposition of obligations on Míla on market 3a

8.1 In general, on designating electronic communications companies with significant market power on specific geographic markets

2448. In the following 29 municipalities of 64, ECOI assesses that effective competition prevails on market 3a or that the tendency is towards effective competition during the lifetime of the analysis:

- Akraneskaupstaður
- Árneshreppur
- Ásahreppur
- Bolungarvíkurkaupstaður
- Borgarbyggð
- Eyja- og Miklaholtshreppur
- Fljótsdalshreppur
- Flóahreppur
- Garðabær
- Hafnarfjarðarkaupstaður
- Hrunamannahreppur
- Hvalfjarðarsveit
- Hveragerðisbær
- Ísafjarðarbær
- Kjósarhreppur
- Kópavogsbær
- Mosfellsbær
- Mýrdalshreppur
- Rangárþing ytra
- Reykhólahreppur
- Reykjanesbær.
- The City of Reykjavík
- Seltjarnarnesbær
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Súðavíkurhreppur
- Sveitarfélagið Árborg
- Tjörneshreppur
- Vestmannaeyjabær

2449. In the above specified 29 municipalities where ECOI assesses that effective competition is in place, obligations that have been imposed on Mila on the relevant market in prior analyses are withdrawn and they shall no longer be in force 15 days after the date of this decision.

2450. In the following 9 municipalities ECOI considers that Tengir or Ljósleiðarinn has significant market power on market 3a:

- Akureyrarbær
- Dalvíkurbyggð
- Eyjafjarðarsveit
- Grýtubakkahreppur
- Hörgársveit
- Svalbarðsstrandarhreppur
- Sveitarfélagið Ölfus
- Vopnafjarðarhreppur
- Þingeyjarsveit

2451. In these municipalities where ECOI assesses that Mila does no longer have significant market power, obligations that have been imposed on Mila on the relevant market in prior analyses are withdrawn and they shall no longer be in force 15 days after the date of this decision.

2452. In the following 26 municipalities, ECOI considers that Mila has significant market power on market 3a:

- Bláskógabyggð
- Dalabyggð
- Fjallabyggð
- Fjarðabyggð
- Grindavíkurbær
- Grímsnes- og Grafningshreppur
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Múlaþing
- Norðurþing
- Rangárþing eystra
- Skaftárhreppur
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Suðurnesjabær
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Sveitarfélagið Vogar
- Tálknafjarðarhreppur
- Vesturbyggð

8.2 Assessment of necessity for obligations on Mila on market 3a and grounds for this

8.2.1 General

2453. As stated in the paragraph 2 of Article 1 of regulation no. 556/2023 on market analysis in the field of electronic communications, the purpose of market analysis is to show whether effective competition prevails on electronic communications markets and to decide on applying measures if competition is not active, for the purpose of enhancing consumer interests. When elaborating obligations, one must furthermore take into consideration, where active competition is not in place, whether deployment of high-capacity networks on commercial terms is inadequate. In paragraph 4 of the provision, it states that competition shall be strengthened in electronic communications with economic investments in new and existing electronic communications infrastructure and as appropriate by imposing obligations where they are needed, particularly at wholesale level, for the purpose of achieving active competition on retail electronic communications markets.

2454. When one has defined the relevant product or service market, geographic markets, evaluation of competitive conditions shall be conducted on relevant markets and as appropriate having designated an electronic communications company as having significant market power on the market, the next step is to describe competitive problems on the relevant market. One must then identify whether the relevant electronic communications company that has been designated as having significant market power, fulfils legal conditions to be deemed a wholesale-only company pursuant to Article 59 of the Electronic Communications Act. All this has been assessed here above and the conclusion of the latter element was that no electronic communications company fulfilled the above specified legal conditions. For this reason, ECOI has more measures at its disposal to tackle identified competition problems.

2455. Having completed all of the above, ECOI must decide on obligations to be applied on the relevant company for the purpose of facilitating competition on the related retail market, for the benefit of consumers. In paragraph 1 of Article 4 of the regulation it states that the purpose of obligations is to create an advantage for consumers with respect to price, quality, choice and access to high-capacity networks, by supporting active and sustainable competition on retail electronic communications markets and the deployment of high-capacity networks on commercial grounds where possible. ECOI is required to assess whether it is justifiable to impose obligations on the relevant market under specific conditions. In paragraph 2 it states that when elaborating obligations on the basis of market analysis, one shall take care to avoid that they do not thwart investment incentives or that new electronic communications networks and service inhibit competition. One must support sustainable investments in high-capacity networks, while at the same time protecting competition - as bottlenecks and access barriers have in many instances existed at the infrastructure level. In accordance with the above, obligations must support foreseeability and accordance in investments in high-capacity networks.

2456. In the above specified documents from the EU Commission and BEREC on obligations, which were taken into account in the new electronic communications legislation in this

country from 2022, emphasis is among other things placed on supporting competition with the development of electronic communications infrastructure and networks where this is considered feasible. In such instances the imposed obligations should support such development. Where competition in the deployment of electronic communications networks is not considered feasible, because of non-transitory economies of scale and scope of the incumbent in a specific area, or because of other access barriers, adequate access to electronic communications networks and equipment at wholesale level must be assured in order to encourage service competition on existing networks, while at the same time guaranteeing adequate recompense for access to the above specified electronic communications networks, thus encouraging further investment, renewal and maintenance of these networks. For the long-term, service-based competition that has its foundation in steered access to a cost-analysed price can be a tool for generating competition in the regeneration of electronic communications networks. This refers to what is called the investment ladder the objective of which is to create conditions that make it possible for new or smaller operators to build up their electronic communications networks in incremental steps. Such views are reflected in paragraph 5 of Article 30 of the above specified regulation on market analysis.

2457. In selecting the obligations that are best fitted to promote competition in a given market, or on a specific geographic part of the market, it is often beneficial to assess the position that would exist if obligations were not imposed on companies with significant market power, and whether it would be sufficient to use competition legislation alone to guarantee competition.

2458. In accordance with paragraph 4 of Article 30 of the regulation no. 556/2023 on market analysis in the field of electronic communications, which contains further elaboration of the provisions of paragraph 4 of Article 46 of the Electronic Communications Act no. 70/2022, imposed obligations on electronic communications companies shall be:

a) In accordance with the nature of the problem specified in market analysis and be designed to resolve it;

b) Transparent, justifiable and reasoned;

c) In accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA;

d) Justifiable in the light of the objectives of the Electronic Communications Act, i.e. to ensure accessible, efficient, economic, effective and secure electronic communications in this country, and also to increase protection and range of choice for consumers, to support effective competition, effective investments and innovation on the electronic communications market:

e) Proportional and take into account, where possible, costs and advantages, and they may not go further than necessary to achieve intended results.

2459. In Article 29 of the regulation, it is among other things stated that obligations need to be necessary for the purpose of solving specific competition problems. ECOI needs among

other things to assess effectiveness and as appropriate to conduct cost and benefit analysis, having in mind the capability of a specific obligation to react to an identified competition problem. Furthermore, whether one should provide specific incentives with the obligations in question.

2460. There are thus many considerations to keep in mind when forming and elaborating obligations. Obligations need to be at once necessary, justifiable, transparent, supported by arguments, in accordance with the nature of the defined competition problem, also to be designed to resolve this in accordance with those objectives that they are intended to achieve (i.e. to strengthen competition, support deployment of high-capacity networks, and create benefits for consumers), support investment in high-capacity networks and to be in accordance with proportionality. When assessing proportionality, it may be necessary to evaluate the effectiveness of the obligations in question on the basis of cost and benefit. In all of these evaluations it is appropriate to endeavour to assess what is likely to happen if the obligation in question (or all of them) are not imposed.

2461. In accordance with the principle of proportionality it is normal to assess the necessity to impose those obligations on Mila that are elaborated in section 8.3 and in its relevant subsections later in this document. As previously stated, ECOI must choose the method that causes least disruption, for the purpose of dealing with the identified problem, see paragraph 2 of Article 46 of the Electronic Communications Act. In the opinion of ECOI, the obligations imposed on Mila are conducive to achieving the objectives of the Electronic Communications Act no. 70/2022 for effective competition and economic electronic communications and furthermore to support further deployment of fibre networks in this country, and to creating advantages for consumers. In section 7.5.2 and 7.5.3 here above, a large number of potential and existing competition problems on markets 3a and 3b have been described. In order to tackle the problems identified there, ECOI shall impose obligations on companies with significant market power pursuant to Articles 47-52, 55 and 59 of the Electronic Communications Act, where appropriate.

2462. The provisions of Article 47 prescribe an access to civil engineering, Article 48 on access to networks and service, Article 49 on transparency, Article 50 on non-discrimination, Article 51 on separation of accountancy, Article 52 on price control, Article 55 on new high-capacity networks and Article 59 on wholesale-only companies. In paragraph 2 of Article 59 it states that if ECOI comes the conclusion that the provisions of paragraph 1 of Article 59 are fulfilled, the Authority can only impose on such a company an access obligation pursuant to Article 48 of the act and a non-discrimination obligation pursuant to Article 50 of the act and on fair and reasonable pricing, if this is considered justifiable on the basis of market analysis.

2463. In this chapter it will be argued why ECOI considers it necessary to impose various obligations on Mila in the municipalities in question and that they are in accordance with the views expressed in the above specified paragraph 4 of Article 30 of the regulation. Further arguments and discussion can also be found in the relevant subsections of section 8.3 and one can also find in section 8.2.2 detailed arguments for why ECOI considers that obligations that were imposed on Mila with the CA settlement on 15 September 2022 do not suffice on their own.

2464. In the ECOI examination of the relevant market the Authority has come to the conclusion that no other measures can be found that could be as effective in solving the competition problems that exist on the market and that relate to Mila in those municipalities where the company is considered to have significant market power. ECOI furthermore considers that the obligations are in accordance with proportionality.

2465. In the light of the potential and real competition problems that can occur and of the strong Mila position on the relevant market in the 26 municipalities where the company is deemed to enjoy significant market power, ECOI considers it necessary to impose obligations on the company for access, non-discrimination, and price control in the form of fair and reasonable tariff. ECOI considers it however necessary to impose a more detailed obligation on Mila for price control in all of these municipalities with the exception of Fjallabyggð, Norðurþing Rangárþing eystra, where an obligation will be imposed on Mila for price control for access to ducts and conduits. ECOI also considers it necessary to maintain obligations on Mila that the company tariff for access to company facilities be cost-oriented or decided on the basis of price benchmarking. ECOI will on the other hand not maintain obligations on Mila for transparency, separation of accountancy and cost accounting. It is therefore clear that Mila is being relieved of all obligations on market 3a in municipalities where about 80% of the country's inhabitants live, and in addition to this, that there is a very significant relaxation of obligations in those municipalities, where Mila will still have significant market power.

2466. With respect to the access obligation, ECOI assessed whether an obligation for access to facilities, such as hosting and access to ducts and conduits, could suffice on its own to resolve identified competition problems. The conclusion is that this is not the case and reference is made to section 8.3.2.1 here below for further arguments.

2467. On the other hand, ECOI considers that such an access obligation continues to be necessary, see discussion and arguments in sections 8.3.2 and relevant sub-sections in this section here below, and also price control with respect to lease of facilities and in 23 of 26 municipalities with respect to access to ducts and conduits. Such obligations apply today to Mila across the whole country. As before it shall be prescribed that Mila shall notify planned fibre civil works, but now with at least 3 months' notice instead of 6 months' notice. This is thus not a new obligation, but the existing obligation has been relaxed, as an addition to a shorter period of notice, the obligation will not apply where infrastructure of another electronic communications company that can be used to deploy fibre is in place.

2468. ECOI furthermore considers that the above specified access obligation to facilities and the duty to notify obligation for fibre civil works to be furthermore justifiable, to support necessary transparency, to be being reasoned, in accordance with the nature of identified competition problems, being designed to resolve them, in accordance with those objectives that the obligations are intended to achieve, to support increased investment and competition in high-capacity networks, and to be proportional. These are obligations that are particularly important to support investments in fibre development and as applicable infrastructure competition, where such is considered financially realistic, in those areas where Mila has significant market power. These are areas in the countryside where Mila is generally in a totally dominant position, and in addition where fibre roll-out is in the early stages in most of them and where copper connections are first and foremost used. If these obligations are not imposed on Mila in the areas in question, along with an obligation for price control in

most of them, it is the ECOI assessment that competitive conditions will not change there for the better during the lifetime of the analysis, and in addition to this that fibre deployment in the areas will be low on the list of priorities or at least take longer to implement than if the obligations in question were not in place.

2469. In addition to the above specified obligation for access to lease of facilities, ECOI considers it necessary to maintain the access obligation on Mila in the areas in question with respect to access to copper and fibre local loops and virtual access over those networks, and access to other vital facilities. With respect to further arguments for this reference is made to sections 8.3.2.2-8.2.3.5 and 8.3.2.7. ECOI plans nevertheless to relax obligations for access to Mila copper and fibre local loops and for virtual access, or to those networks that have not been developed with state aid, in such a manner that Mila can now resolve the access obligation in question by providing adequate access to Access Option 1 in bitstream instead of such local loop access. This is therefore not a case of new obligations but rather maintaining existing obligations with certain relaxations. ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve and that they are proportional. ECOI considers the obligations particularly necessary for the purpose of supporting competition in provision of bitstream service (market 3b) and service competition among retailers in the areas in question, as Míla is in most areas by far the largest network operator in the relevant areas. ECOI considers that the obligations do not prevent investments in high-capacity networks in the relevant areas, but where infrastructure competition develops over time, it would be possible to withdraw such access obligations.

2470. The obligation for wholesale access on the relevant wholesale markets is a prerequisite for competition to become active in related retail markets such as on the broadband market Internet and voice telephony market (VoIP) and for TV distribution (IPTV). It is not possible to solve the competition problems described here above in any other way than by imposing the obligation for access. Access barriers make it difficult for Mila competitors and customers to develop extensive local loop networks with national coverage and it is thus a prerequisite for effective competition on downstream markets that they can receive access to the Mila copper and fibre networks in these areas.

2471. ECOI considers the obligation for access to be an insignificant burden on Mila, but it is an essential prerequisite for effective competition on the downstream markets. It is in fact necessary for electronic communications companies to gain access to the Mila local loop network in order to be able to offer their customers adequate services in the areas in question. The obligation should first and foremost ensure that Mila does not discriminate in making local loop agreements or bitstream agreements should the company choose to resolve the access obligation with Access Option 1 and not delay the entry of new companies by delaying contract negotiations. It cannot be considered burdensome to deal with all counterparties for local loops in a satisfactory manner, and in addition to this the company has borne such an obligation for a long time. Through a connection with the Mila local loop network the companies gain better use of the electronic communications equipment in which they have invested.

2472. With respect to the non-discrimination obligation, ECOI considers it necessary to maintain the obligation on Mila, but now only in those areas where Mila has significant market power. These are continuation of the equality of input obligation (EoI) obligation for equal access to information, impact on development of product offer, equal delivery time, obligation for making service level agreements, service level guarantees and obligation for measuring and publishing of key performance indicators (KPIs). ECOI will however no longer require that Mila publish openly the service level agreements that the company has made or will make with electronic communications companies. This therefore represents a certain relaxation of the obligations in question in those areas where the obligations will apply. ECOI furthermore considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be proportional, as is further argued here below in sections 8.3.3.1-8.3.3.5.

2473. The obligation for non-discrimination with respect to access to the Mila local loop network in wholesale, and to related facilities such as lease of facilities and access to ducts and conduits, are necessary for companies, whether on the relevant market or related markets, to be able to compete on a level playing field between themselves and with Míla. The obligation should mean that all electronic communications companies that purchase access to Mila local loops receive comparable services and prices and in this way the competition problems related to possible discrimination will be solved. ECOI considers that the obligation for non-discrimination is not particularly burdensome, but it is already imposed on Mila in a much larger area than is prescribed in this market analysis, i.e. the whole country. The obligation should lead to all companies leasing access to local loops receiving comparable services and should be instrumental in resolving the competition problems described in section 7.5.2 with respect to issues such as service speed, price, quality etc., that can give Míla a competitive advantage on the relevant and downstream markets, and can give specific retail companies, for example priority purchasers with Mila, an advantage on related retail markets.

2474. Mila shall also make service level agreements (SLAs), service level guarantee(SLGs) and shall publish key performance indicators (KPIs), but the requirements are relaxed on Mila having to publish a service level guarantee which the company has made or will make with an electronic communications company. These obligations were new in 2014 and were retained with ECOI Decision no. 5/2021. They required considerable work for Mila during the initial years, but ECOI considers that the elements in question had been necessary to support increased non-discrimination and that they remain so. In the opinion of ECOI, it is not burdensome for Mila to maintain the systems that were built to fulfil these obligations.

2475. ECOI carefully examined whether it was possible to lift the above specified elements of the non-discrimination obligation on Mila, i.e. SLAs, SLGs og KPIs in those areas where Mila has significant market power, and such obligations are not imposed on Ljósleiðarinn, Tengir and Austurljós, and further details will be provided for the reasons for this later in the discussion on obligations on these companies. The reason with respect to Mila is that it is not timely to lift these obligations on Mila but it is rather the case that competition problems are such that they are still needed, regardless of what may subsequently transpire. The competitive situation in those areas where Mila has significant market power, areas that are much more numerous than those areas where other parties have significant market power,

is generally much worse than in the areas where the other companies have significant market power, both with respect to high Mila market share and to limited deployment of parallel fixed line network coverage, including parallel fibre networks. With respect to proportionality, the reality is that it is less problematic to maintain obligations if they are in other respects justifiable, than to impose obligations on new parties.

2476. The main reason that ECOI considers it necessary and justifiable to maintain the obligations in question on Mila is that there still exist significant characteristics of vertical integration between Mila and Siminn, despite the Siminn sale of Mila and the strong commercial and interest connections. It's clear that Siminn is a priority purchaser for Mila and needs to purchase at least 80% of its needs for products or markets 3a and/or 3b, from Mila for an extended period of time.

2477. It is also relatively short time since Mila was sold from Siminn and thus became an independent company. Before this happened, a significant number of systems and service were transferred to Mila, as has been recounted here above in detail in the discussion on competition problems. With this transfer, a considerable number of Siminn staff moved over to Mila. A number of former Siminn employees are now working for Mila, which can have an impact on attitudes and incentives to serve Siminn better than other Mila customers. There should of course be an incentive for Mila to do business with electronic communications companies other than Siminn that operate on the retail market, in order to use company systems better, but it remains to be seen what incentives there are vis-à-vis potential discrimination in favour of Siminn. [...].

2478. Having taken all of the above into account, it is important that retailers other than Siminn can trust Mila not to discriminate in Siminn's favour.

2479. ECOI considers that if this non-discrimination obligation were not in place, then a negative competition situation in the relevant areas could become even worse. ECOI also believes that the gains from this obligation are significantly greater than Mila costs in maintaining it, as it has been pointed out here above most of the costs with this obligation are already in place.

2480. With respect to the obligation on price control, this represents a significant relaxation with respect to the company's copper network, but also represents a slightly greater burden with respect to the fibre network. In addition to this, all obligations including price control, were lifted from Mila on the relevant market in areas where about 80% of the population lives, and now there will only be a requirement for fair and reasonable pricing of Mila local loop lease on the company's copper network, whereas up to this point in time an obligation had rested on the company for cost analysed prices across the whole country for the company's copper network. On the other hand, an obligation for fair and reasonable pricing will now also apply to Mila bitstream lease on fibre networks in these areas, as in the case of Ljósleiðarinn and Tengir. Furthermore, up to this point in time, an obligation for price control has rested on Mila for lease of facilities and access to ducts and conduits. These obligations will be maintained in these areas Fjallabyggð, Norðurþing and Rangárþing eystra, as far as ducts and conduits are concerned, as the obligation for fair and reasonable pricing will apply in these three municipalities.

2481. ECOI considers it necessary to impose this obligation on Mila in the areas in question on the relevant market. ECOI furthermore considers the obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be proportional, as will be further argued here below in sections 8.3.4.1-8.3.4.5. With respect to proportionality one can point out that the obligation for fair and reasonable pricing is much less stringent and costly for Mila than the obligation for cost analysed prices which has been imposed on the Mila copper network for many years with the attendant cost analyses. The obligation for price control of Mila tariff with respect to lease of facilities and access to ducts and conduits only applies in 23-26 municipalities instead of in the 65 municipalities in the country as has been the case.

2482. ECOI considers that Mila has the possibility and the incentive to demand higher prices in those areas where Mila is deemed to have significant market power. These areas are characterised by little or no competitive pressure and retailers and thus consumers have a little possibility of using comparable electronic communications service from other network operators. ECOI therefore considers it necessary to impose an obligation for price control on Mila. In the light of the severance that took place in the ownership ties between Mila and Siminn, ECOI considers it however on the other hand appropriate to apply less stringent measures with respect to price control on the Mila tariff on the relevant market 3a than those which currently apply to the company with respect to the copper network, and it is the ECOI conclusion that the Mila tariff for such local loops shall be fair and reasonable in those geographic markets where ECOI deems Mila to have significant market power. The same will apply to Mila local loops on the fibre network, but there are no price obligations now in force on this.

2483. Despite the above, ECOI considers it necessary and justifiable and in accordance with the above specified considerations that one should use as a basis when obligations are elaborated, to impose on Mila an obligation for cost analysed tariff with respect to lease of facilities and access to related facilities in all those municipalities where Mila is deemed to have significant market power. ECOI also considers it necessary to impose an obligation for price control on Mila with respect to access to Mila ducts and conduits in 23 of those 26 municipalities where the company is considered to have significant market power. These are all the municipalities listed in section 8.1 here above with the exception of the municipalities Fjallabyggð, Norðurþing and Rangárþing eystra. In these 3 municipalities, the obligation for fair and reasonable prices applies to access to ducts and conduits, as competitive conditions in those municipalities are better than in the other 23 municipalities, at least with respect to a higher proportion of parallel fixed line network coverage.

2484. With respect to fair and reasonable pricing that will apply to Mila local loop lease on copper and fibre networks and in 3 municipalities with respect to access to ducts and conduits, it is clear that these are much less burdensome obligations than the obligation for cost analysis. As the Mila position is extremely strong in those areas where Mila is deemed to have significant market power, and even in some instances there is monopoly, ECOI considers it injudicious not to prescribe any monitoring of Mila tariff in the areas in question. The above specified obligations should ensure that Míla cannot apply excessive pricing in the areas in question, to the detriment of access seekers and thus consumers and ECOI considers it

necessary and justifiable to apply such obligations. With respect to such an obligation, Míla has much greater freedom in pricing than it had in the case of copper local loops, and prior endorsement from ECOI will no longer be required for price changes. It is not clear whether this obligation will be tested, but this will only happen should a complaint be received on excessively high pricing or under special circumstances at the initiative of ECOI, for example if a price increases significantly or develops significantly in excess of general price developments. It should not necessarily require intervention from ECOI for the price of providing a service to be taken into account when deciding the tariff, as account should rather be taken of general price development and/or benchmarking should ECOI become involved.

2485. ECOI considers that the obligation on fair and reasonable pricing on Mila bitstream access to fibre networks in the relevant areas where the company has significant market power on the relevant market, will not hinder the company's continued fibre roll-out or investments in this area, or other areas, or the installation of bitstream systems on such fibre networks. As previously stated, this obligation is much milder than an obligation on price control. In the opinion of ECOI, the regulatory holiday that Mila has had for years, with respect to pricing for the company's fibre products on markets 3a and 3b has provided good results in development of high-speed access networks and bitstream systems, up to this point in time, given the above specified competition problems existing in these area where Mila is deemed to have significant market power, but better competition needs to be ensured on the relevant wholesale markets and the downstream retail markets in the relevant areas, regardless of whether they are on copper or fibre networks. A comparable obligation will be imposed on Ljósleiðarinn on the relevant markets and on Tengir on market 3a.

2486. As this obligation is not more significantly burdensome for Mila than is currently the case it should be clear that the benefits for parties to the market are substantial and that there are major gains from this for bitstream operators and retailers and thus for consumers, as it should prevent the possibility of higher pricing in areas where little or even no effective competition prevails.

2487. With respect to the obligation on Mila for lease of facilities and access to ducts and conduits (in 23 of 26 municipalities), ECOI considers that the obligation is necessary and justifiable and that in addition it fulfils other considerations stated here above for the elaboration of obligations. It is extremely important that obligations encourage investments in high-capacity networks and even in infrastructure competition where such is considered economically efficient. This is the case of an area where Mila is either in a near monopoly position or at least in a very strong position and it is clear that if this obligation was not maintained on these Mila products, there would be a strong incentive for Mila to price the products in such a manner that the access and non-discrimination obligations would not secure results. Deployment of parallel fixed line network is variously non-existent, negligible or at least low, but it is much higher in the area where Ljósleiðarinn is designated as having significant market power, and also in the most important areas where Tengir is deemed to have significant market power. These obligations have for many years been borne by Mila and ECOI has for example endorsed many Mila cost analyses for leased of facilities and such access is very much used by parties to the market. It is important that this does not change.

2488. With respect to access to ducts and conduits, ECOI has not endorsed a Mila cost analysis for such access, but this cost analysis has been under review by ECOI for some time

but it has not been possible to base the analysis on costs from Mila bookkeeping, so another method has to be found to decide the price for such access. Such access has not been used much by access seekers, first and foremost because of the high pricing, according to parties to the market. It is important to maintain this obligation in the above specified 23 municipalities and that ECOI decides tariff for this access at the first opportunity, in order that this access becomes a realistic option for Mila competitors and that it leads to fibre roll-out in areas where such is in very early stages and even to competition in infrastructure where such is deemed to be economically feasible.

2489. The efficiency of these obligations for parties to the market is very significant in the opinion of ECOI and the gains from the obligation are likely to be many times more than the Mila costs in fulfilling the obligation. ECOI also reiterates that if such an obligation were not maintained, it is likely that there would be a downturn in lease of facilities at Mila, with attendant increased costs for competitors or even with the result that they withdraw from specific areas. It is not likely that the obligation on access to Mila ducts and conduits will be a feasible option unless prices are cost analysed or decided on the basis of benchmarking. The obligation is therefore in the opinion of ECOI extremely important to encourage investments in high-capacity networks in these areas and as appropriate infrastructure competition where this can be considered economically realistic.

8.2.2 The settlement between Mila and CA from 15 September 2022

2490. In accordance with the main import of the ECOI provisional agreement in case no. 9/2023 which was published along with a draft to the prior market analysis of the relevant market on 15 September 2023, the following detailed comments were received from Mila. One comment concerned Mila's view that when assessing the need for making a decision on imposition of obligations on Mila on the basis of the Electronic Communications Act, that it carried great weight that Mila was bound by strong obligations resulting from the company's settlement with CA, see Decision CA in case no. 16/2023 dated 22 May 2023. This comment from Mila was specifically answered in the provisional decision in question, but it is considered appropriate to reiterate the ECOI position here and to add arguments for the ECOI position in this respect.

2491. It is appropriate to examine whether the conditions of the settlement could have some common ground with obligations with respect to this market analysis, and the main examples are the following:

1) Equal access to Mila systems and service

The provisions of Article 5 of the settlement prescribe on equal access for electronic communications companies to networks, electronic communications structures, facilities and Mila wholesale service. In order to ensure equal access for electronic communications companies, Mila shall respect non-discrimination, impartiality and transparency in providing service to those electronic communications companies that so request. The concept 'access' is used about the above specified access, Mila facilities and/or service as a wholesale company in electronic communications service. In the condition, infrastructure, facilities or Mila service are not described in an exhaustive manner, and this then applies to any facility and/or service that the company provides.

> Equal access according to the settlement means among other things at the same processing speed, conditions of business, terms of business, pricing, the same level of quality and service of electronic communications, equal access to information on technical issues and other necessary issues related to access for an electronic communications company, see points a, b and c of paragraph 2 of Article 5 of the settlement. Mila is thus unauthorised to discriminate between electronic communications companies on such issues or to treat Siminn or another service provider preferentially, unless this is verifiably reasonable pursuant to exception in paragraph 3 of Article 5. This exception from non-discrimination and access conditions in Article 5 should be interpreted narrowly, which means that strong requirements of proof must be made to Mila that this exception applies.

2492. This condition may be similar to the non-discrimination and access obligation that ECOI is authorised to impose on a company with significant market power. In the Electronic Communications Act no. 70/2022 there is specific discussion on ECOI being able to impose obligations on an electronic communications company with significant market power to accede to reasonable requests for access and use of facilities, see Article 47. There was also discussion in Article 48 on ECOI authority to impose obligations on a company with significant market power to accede to reasonable requests for access to and use of specific network elements and related facilities. It is furthermore prescribed in Article 50 that ECOI may impose an obligation on a company with significant market power to respect non-discrimination in relation to interconnection or access. Obligations pursuant to the provision can mean an obligation for a company to offer to all companies, products and services related to specific access.

2493. From the above one can see that ECOI is specifically authorised in law to impose the obligations in question on a company with significant market power subsequent to detailed analysis of competitive conditions, if conditions to this effect apply, see above specified paragraph 4 of Article 30 of the regulation on market analysis in the field of electronic communications, see furthermore paragraph 4 of Article 46 of the Electronic Communications Act. Obligations are thus not imposed on electronic communications companies by ECOI unless an assessment of competitive conditions on the relevant market have been conducted and the relevant company has been designated as having significant market power on that market, that specific competition problems have been identified and that reasonable considerations support intervention to endeavour to solve those problems. Further to this, the access and non-discrimination obligations that ECOI plans to impose on Mila in those areas where the company is deemed to have significant market power are more detailed, more specialised and are not elaborated in the same manner as those conditions that were imposed in connection with the merger between Mila and Ardian, as the cases differ in nature.

2494. Access and non-discrimination obligations imposed on Mila by ECOI in prior market analyses have been much more detailed than the conditions that Mila undertook with the above specified settlement with CA. One can for example take account of the fact that in ECOI decision in case no. 5/2021, there was among other things discussion on access obligation on Mila, where such discussion covered approximately four pages, where infrastructure and services that Mila was obliged to provide access to are described. Then in the discussion in the non-discrimination obligation on Mila there is among other things mention of service level

agreements, quality guarantee, publication of key performance indicators (KPI) and that information on local access and service related to access and to access to Mila ducts and conduits shall be equally accessible to other electronic communications companies as to related parties. Mila was also required to provide information on the length of local loops in each instance where known, i.e. distance from the end user in question to the next connection point. Elaboration of these obligations on Mila will be similar in this analysis.

2) Planned changes to Mila systems or service

The condition is specified in Article 6 of the settlement that prescribes Mila's duty to provide information on all changes to service and product offer or innovations in those fields. The same applies to development, updates or changes to the company's electronic communications networks and systems. Mila's duty to inform includes among other things the duty to provide information to customers and potential customers at the same time such that electronic communications companies and other customers are on a level playing field.

2495. This condition is most similar to the transparency obligation that ECOI is authorised to impose on companies with significant market power pursuant to Article 49 of the Electronic Communications Act. It states in the provision that ECOI is authorised to impose obligations for transparency on companies with significant market power, in connection with interconnection or access, that constitute that a company publishes specific information, such as information on network characteristics and expected development, and furthermore on terms and conditions for amendments to access to or use of service and software, among other things with respect to transfer from older electronic communications networks. ECOI is authorised to specify precisely the information that shall be made accessible, how detailed it needs to be, and the manner in which it shall be published. Part of the obligation that was imposed on Mila with the last market analysis meant that the company should publish a reference offer for local access, related facilities and access to ducts and conduits.

2496. One can also see in the elaboration of the access obligation in analysis no. 5/2021 that Mila is obliged to inform parties to the market of all changes to the arrangements of local loop access that are likely to alter companies' competitiveness on the market with 5 years' notice. Then it also says that ECOI can grant an exemption from the 5 years' notice in question. If such an exemption is considered normal and reasonable, ECOI shall open consultation with stakeholders. If no objections are raised and stakeholders have access to substitute products, and do not suffer any unnecessary damage when migrating between systems, the ECOI will endorse such an exemption.[411]

2497. In the obligation that ECOI imposed on Mila on the relevant market in its previous decision it is noted as previously stated in the obligation for access, that information shall be provided on planned changes, and furthermore the same as stated in the obligation for transparency, but in a slightly different way. The CA conditions and ECOI obligations, are to some extent comparable with respect to this issue but there is however a difference. For

[411] ECOI Decision in case no. 5/2021, paragraph 37.

example, ECOI prescribes specific procedural rules for introduction of changes and not only about the dissemination of information.

3) Ban on bundles and tying that inhibit competition

Then there is a ban on bundles and tying that inhibit competition on those wholesale service/products that is covered by Article 7 of the settlement, whether this is done internally or with other Mila services/products, see paragraph 2 of Article 7. Because of the strong position of Mila, and of the company's unique and broad service offer, there is also a ban on damaging bundling of electronic communications service, see paragraph 3 of Article 7. According to the condition, Mila is unauthorised to price or offer other transaction terms for bundles of electronic communications service in such a manner that existing or potential customers have little or no incentive to purchase separate and defined wholesale service in part from Mila competitors or to use its own system to manufacture or implement the same electronic communications service.

2498. A ban on bundles and tying that inhibit competition cannot be found in ECOI obligations, with the possible exception of one being able to deem a certain similarity between Article 51 on separation of service points and provisions of separation in the obligation on transparency.

4) Measures to protect Siminn freedom of transaction

In the conditions of Article 8 of the CA settlement, there is discussion on measures to protect Siminn freedom of transaction which have the objective of responding to the above specified concerns of potential technical integration between Siminn and Mila and competitive barriers resulting from this. With the condition and the declaration that Siminn signed in an appendix to this settlement, the prerequisites for the decision are described and the obligation is placed on parties to ensure that Siminn can unhindered make wholesale transactions with other companies on the electronic communications wholesale market and without the involvement of Mila. Mila is furthermore unauthorised to take any measures that may counteract this freedom of transaction and Siminn independence which is discussed in the decision.

2499. There are no special provisions for measures to protect Siminn freedom of transaction in ECOI market analysis, except possibly with respect to obligations on non-discrimination pursuant to Article 50 of Electronic Communications Act, i.e. the obligations that have the objective of ensuring that a company applies comparable conditions in comparable circumstances vis-à-vis other providers of comparable service and provides others with service and information with the same quality as it provides for its own service.

2500. One could also add to all of the above that it is important to take into account that market analysis and imposition of obligations on a company that has been designated as having significant market power are according to statutory procedure that allows for wide consultation with parties to the market and for the involvement of both the CA and ESA. In the opinion of ECOI, it is not possible to disconnect the statutory process by citing the settlement between Mila and CA as the only obligation on Mila on the local loop and bitstream markets.

2501. Markets 3a and 3b are defined in the ESA Recommendation on the relevant market from 2016. It is specifically stated in the Recommendation that the relevant market fulfils general conditions for the need to apply specific obligations pursuant to Electronic Communications Act in order to encourage increased competition and that national and European regulatory framework on competition alone are not sufficient to address the competition problems identified.[412]

2502. It is then perfectly clear that the conditions of the settlement were never conceived to replace ECOI ex-ante regulation. One can see this position reflected in paragraph 12 of the conditions of the statement where it was stated that the settlement has no impact on the jurisdiction of ECOI pursuant to Act no. 75/2021 regarding those issues covered by the Electronic Communications Act no. 70/2022 and derived rules or decisions on the basis of electronic communications legislation, such as imposed obligations resulting from market analysis and significant market power. Ever since 2013, CA settlements vis-à-vis the Siminn Group, and from 2022 particularly vis-à-vis Mila, have been in force in parallel with obligations from ECOI, without objections having been raised with this on the part of ESA or having tested this in the courts or before the appellate committee.

2503. Those conditions that CA may make for endorsement in merger cases can be of another nature or vary from those obligations that ECOI imposes on electronic communications companies on the basis of market analysis, where they are for example obligations for access and non-discrimination imposed on Mila on the basis of the Electronic Communications Act and which are elaborated in a more detailed manner than analogous conditions set by CA. In addition to this there is a certain material difference in how the two authorities conduct their monitoring of whether obligations are respected, where ECOI has active monitoring of whether obligations are complied with and in past years has on many occasions needed to make decisions that concern breaches of such obligations. In the case of the settlement there is a provision for the appointment of an independent monitor. During the period of validity of the settlement to which Mila was a party from 2013, and which was reviewed in 2015 and applied until the above specified settlement came into force in 2022, a three-man supervisory committee was appointed. During this time the committee never came to a conclusion that the Siminn Group had breached the settlement, despite a significant number of complaints from parties to the market and a CA decision on a breach of the settlement in the year 2020 (English football). Experience of such supervisory committees or inspectors is therefore in the opinion of ECOI not particularly good. CA settlements with Mila, which was then part of the Siminn Group, have not prevented behaviour that inhibits competition, as decisions by ECOI demonstrate.

2504. One may finally take into account that in the CA Decision in case no. 24/2023, a position was taken among other things on the impact of changes to the market after the sale of Mila to Ardian and that a settlement with CA came into force. In the decision it states that SE endorsement of Ardian purchase of Mila, on the basis of conditions relating to changes of the wholesale agreement between Siminn and Mila on the infrastructure market, does not automatically lead to the conclusion that there is no reason to protect competition on markets on which Siminn operates subsequent to the sale[413]. One can assume that the same

[412] ESA Recommendation on relevant markets from 2016, paragraph 11.
[413] Competition Authority Decision in case no. 24/2023, paragraph 230.

applies to Mila as in the decision the conclusion was also reached that continued strong common interests exist between the companies which have by the nature of things an impact on those markets on which the companies operate. It is therefore not possible to assert that competition problems that derived from the merger have been fully resolved with the settlement in those markets here in question.

2505. It is therefore important to take into account that the above specified CA settlement with Mila can be subject to change or that the settlement will be rescinded, as such authority for revision is prescribed in Article 11 of the settlement. It is stated that among other things that having received a submission from Mila, CA shall take a reasoned position on whether it is necessary to maintain any condition in the settlement. CA shall make the decision on the submission within 115 working days from the time it was received. If CA makes no decision within this period of notice, the submission is deemed to be endorsed and the relevant condition becomes void. When evaluating a request, a position shall be taken on whether significant changes have taken place on the relevant electronic communications markets in this country, for example because of actions or decisions by ECOI. Mila has strongly indicated recently that the company considers the settlement to be unfair and that the company plans to make efforts to have it changed or rescinded. In the opinion of ECOI it is not possible to exclude this, so it is necessary for ECOI to impose obligations on Mila, as on others that were deemed to have significant market power on the relevant markets, in those area where such a situation prevails. ECOI obligations can then lead to the conditions of the settlement being changed or withdrawn, for example in specific geographic areas.

2506. To summarise one can therefore say that the above specified settlement between Mila and CA does not address all those aspects addressed by ECOI obligations, and it is the assessment of ECOI that it is necessary that obligation pursuant to Electronic Communications Act rest on Mila in those areas where the company is deemed to have significant market power, in parallel with the settlement between Mila and CA. In addition to varying content of the obligation that ECOI plans to impose on the one hand, and on the other hand, of the conditions of the settlement, their implementation and monitoring is conducted in quite a different manner. Obligations imposed by ECOI constitute for example much more permanent monitoring, where ECOI can react more rapidly than CA which has to prioritise its projects, and prior endorsement by ECOI with respect to the various obligations.

8.3 Imposition of obligations on Míla on market 3a

8.3.1 General

2507. ECOI imposes the same obligations on Mila on all of the above specified 26 municipalities where Mila is deemed to have significant market power, except in Fjallabyggð, Norðurþing and Rangárþing eystra where ECOI plans to impose obligations for fair and reasonable price for access to ducts and conduits, and not a traditional obligation for price control as on the other 23 geographic markets.

8.3.2 Obligation to provide access

8.3.2.1 Assessment on whether an obligation on access to facilities can suffice as a moderate way to support competition

2508. Pursuant to paragraph 1 of Article 48 of Electronic Communications Act ECOI can prescribe that a company with significant market power accede to justifiable requests for access and use of specific network elements and related facilities if it is considered that denial of access or unjustifiable terms and conditions that have a similar impact, will inhibit the development of a sustainable competitive market at retail level and will not be in the interests of end users.

2509. The provision corresponds to a large degree to Article 28 of the older Electronic Communications Act no. 81/2003. The main difference is that ECOI is required to assess whether access to facilities could suffice before it is decided to apply an obligation for access to electronic communications networks and service. The provision is the transposition of Article 73 of the Directive (EU) 2018/1972 (the Code).

2510. From the above it is clear that it is important that before a decision is made on invoking Article 48, ECOI assesses whether obligations on access to civil engineering, pursuant to Article 47 of the Electronic Communications Act could suffice as a moderate measure to support competition and assure end-user interests. This is clearly stated in paragraph 5 of Article 48 of the Electronic Communications Act.

2511. The provisions of paragraph 1 of Article 47 of the Electronic Communications Act deals with whether ECOI can impose obligations on electronic communications companies with significant market power to accede to reasonable requests for access and to use of buildings, including buildings or entry to buildings, cabling in buildings, antennae, towers and other structures if market analysis indicates that denial of access or the imposition of unreasonable conditions for access could hinder sustainable competition and could impinge on end users' interests.

2512. In this connection it should be noted that in section 7.5.2.3 here above, where there is discussion on competition problems on market 3a, the conclusion was reached that a company that has significant market power on a wholesale market can have a tendency to deny access to companies that are in competition with the company on downstream markets or possibly new competitors, access to wholesale service, for the purpose of preventing competition or making it at least more difficult for competitors in competition. Such behaviour can be manifested in absolute denial of access or that access is provided at such unreasonable terms, including pricing, that is tantamount to denial. ECOI surmised that Mila could have the opportunity and incentive in those areas where the company enjoys significant market power, to deny specific electronic communications companies access to market 3a, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b.

2513. According to the bill that became the Electronic Communications Act, Article 47 enables smaller electronic communications companies to deploy their own networks without

needing to embark on special civil works. For example, access to ducts and conduits could be extremely useful in the development of new electronic communications networks, as this saves electronic communications companies the work of digging ditches and in addition to this it diminishes the inconvenience caused by repeated civil works. It is furthermore stated that emphasis is placed on examining this obligation before others in accordance with the objectives of the bill to support development of new high-capacity networks and to increase competition between networks.[414]

2514. The above means that ECOI considers it necessary to fulfil the objectives of the Electronic Communications Act, among other things to support fibre roll-out where it has not taken place and even to support the development of parallel fibre network coverage where this can prove economically feasible, to impose the obligation on Mila to accede to justifiable requests for access to civil engineering, among other things to ducts and conduits on those geographic markets where the company has significant market power on market 3a. Further elaboration of this obligation can be found in section 8.2.2.6 here below. ECOI considers this obligation not excessive given its importance, but it must of course only apply in those areas where Mila has significant market power. It is worthy of note that ECOI also imposes such an obligation on Tengir and Ljósleiðarinn in those areas where those companies have significant market power.[415]

2515. With respect to assessment of whether an obligation for access to civil engineering could suffice as a moderate measure to support competition and could ensure the interests of end users, one must take into account that Article 47 of the Electronic Communications Act is the transposition of Article 72 of the Code. Since the above constitutes an novelty, it could prove useful to take into account the Commission Recommendation on the appropriate market from December 2020 and the working document in connection with the Recommendation, as the above specified Recommendation was updated after the Code came into force.

2516. The Recommendation discusses among other things that according to Article 72 of the Code, NRAs can impose an obligation for access to civil engineering as an independent measure on the relevant wholesale market and such an obligation should be considered before other access obligations are imposed.[416]

2517. In the working document that accompanied the above specified Recommendation, it states that when NRAs take into account whether the relevant market requires ex-ante-regulation one must take into account obligations that result from other regulation and the impact they have on the market. In the context of Article 72 of the Code, see Article 47 of the Electronic Communications Act, specific reference is made to obligations that result from the Broadband Cost Reduction Directive 2014/61/EU (hereafter "BCRD").[417] This directive was transposed into Icelandic law on 29 October 2019 with Act no. 125/2019 on measures for economic deployment of high-speed electronic communications networks and the law came

[414] Alþingistíðindi, 152 Parliament, Parliament document 666 – 461. case, on article 47.
[415] EU Commission working document with Recommendations on the relevant market, SWD (2020) 337 final, dated 18 December 2020.
[416] Guidelines on relevant markets from 18 December 2020, paragraph 28.
[417] EU Commission working document with Recommendations on the relevant market, SWD (2020) 337 final, dated 18 December 2020, pages 652 and 63.

into force on 1 January 2020. The object of the instrument is to support development of high-speed electronic communications networks by enabling companies to share civil engineering and in this manner, companies can develop networks at lower cost. The instrument instructs all network operators (not only electronic communications companies), to accede to all fair and reasonable requests for access to civil engineering and to information on them fair terms and conditions for fair recompense. One may only deny a request for access on the basis of objective, transparent and moderate reasons.

2518. Many European states have examined this and come to the conclusion that the directive is not adequate on its own to ensure efficient access to ducts and conduits of electronic communications companies with significant market power and have also imposed, obligations for such access in their market analyses after the directive in question came into force.[418] One can in this context, note that in the DBA market analysis by in Denmark on the relevant market from 2017, ERST refrained from imposing such an obligation on TDC, which was designated as an electronic communications company with significant market power in that country. The EU Commission raised an objection to this.[419] In the case of the Czech Republic from 2018, the EU Commission raised objections to the Czech NRA, CTÚ, for not imposing an obligation for cost analyses tariff in parallel with such an access obligation.[420]

2519. ECOI considers that the legislation in question from 2019 does not ensure, on its own, efficient and effective access to Mila ducts and conduits, among other things because authority is lacking to impose an obligation for cost analysed prices. ECOI imposed the obligation in question for access to ducts and conduits on Mila initially in 2014. This obligation proved unsuccessful for the purpose of increasing access for Mila competitors to the company's ducts and conduits, among other things because the obligation was very generally worded. Mila always provided the argument that it did not have such construction at specific locations or that there was no space in them. And then came to light that Mila appeared to have such civil engineering at many locations and began to use them for its own fibre roll-out. ECOI strengthened this obligation with its Decision no. 5/2021 and elaborated it in a more precise manner. Despite the above, the alleged high lease price required by Mila in recent years has prevented access for Mila's competitors to this civil engineering. In recent months, ECOI has been working on cost analysis of Mila prices for such access and it is important that

[418] There is further discussion on the Czech case in section 8.2.4.5, and reference is made to this. See also in this connection discussion at the bottom of page 63 and top of page 64 in the Commission working document. There it states among other things that Bulgaria is the only country that has deemed that obligations that result from BCRD, are adequate and the NRA has lifted an obligation for access to civil engineering. It should be noted that in Bulgaria, the W LA market is assessed as being fully competitive.

[419] See comments from the EU Commission in case C (2017) 4901 final. On page 9 there is a comment on the withdrawal of the access obligation: *„DBA proposes to withdraw the duct access obligation because it considers that the*

transposition of Directive 2014/61/EU (covering access to physical infrastructure) will be sufficient. The Commission notes that the current regulatory obligations on access to ducts in Denmark do not include a price control obligation (only an obligation to provide access on reasonable terms). The Commission invites DBA to re-consider whether the lack of such an obligation gives consistent buy-or-build signals to alternative operators, given that cost-oriented duct prices are integrated in the price controls for other forms of regulated access to be imposed on the significant market power operator, and whether access on reasonable terms to be negotiated case by case,

without a requirement of a clear reference offer, will be sufficient to promote infrastructure competition, wherever economically efficient, through access to passive infrastructure."

[420] In section 8.2.4 there will be further discussion on this case and reference is made to this.

this work be completed as soon as possible for it to be able to find a fair and reasonable lease price for access to such infrastructure.

2520. One must also take into account that in Iceland, Act no. 125/2019 has never been tested with respect to existing civil engineering and for this reason it is not possible to conclude that obligations resulting from this legislation can replace a well elaborated obligation for access to civil engineering pursuant to Article 47 of the Electronic Communications Act and as appropriate an obligation for costs analysed prices for such access. ECOI also considers that this legislation is more effective in those instances where electronic communications companies request access to civil engineering of other parties than electronic communications companies, for example utility companies, than in such instances where electronic communications companies request access, for example to ducts and conduits from competitors on the electronic communications market. The willingness of a company to provide access is by the nature of things greater when the access seeker is not a competitor.

2521. It is also necessary to note that the BCRD directive in question and the legislation from 2019 only constituted minimum coordination in this connection. There is only a provision for access of an electronic communications company to minimum information from the operator of such infrastructure with regards to existing infrastructure. In requests from electronic communications companies, it also has to be specified the area in which the electronic communications company in question plans to develop a high-speed network. So, this is a kind of “ad hoc” provision.

2522. In paragraph 2 of Article 7 of the act from 2019, reference is made to the obligation of the operator of such infrastructure to accede to all reasonable requests for access to civil engineering on the basis of fair and reasonable terms and conditions, including price. Having the circumstances in mind, a number of elements could have an impact on the conditions for such access, for example additional costs resulting from maintenance and alterations, existing protection measures that need to be adopted to minimise negative impact on security and reliability of networks, an arrangement for damage liability in the event of any damage, use of public grants to build the civil engineering, including special terms and conditions tied to the grants or prescribed in national law in accordance with the rules of EEA law, the ability to deliver or provide civil engineering to fulfil obligations for providing public service, for limitations resulting from national provisions that relate to nature protection, public health and public safety or to fulfil the objectives of planning.

2523. According to paragraph 3 of Article 7 of the act, the operator of such a construction is authorised to deny access to specific civil engineering for objective reasons. Material civil engineering can particularly be technically unsuitable because of special circumstances that relate to the civil engineering itself, such as because of lack of space are that time or because of future needs that are demonstrated in an adequate manner, for example by an investment plan or other data. Under particular circumstances, shared use of civil engineering can be a risk for security or public health, reliability and network security, including in the case of national civil engineering. It is also possible that the provision of service already in place is put at risk with the provision of access to the same civil engineering.

2524. It is also prescribed in paragraph 4 of Article 7 of the Act that denial shall be presented within two months from the day of receipt of a completed request. It is then possible to refer the denial to ECOI for resolution.

2525. From all of the above it is clear that the above specified legislation from 2019 does not suffice on its own to support the deployment of high-capacity networks in this country, which means that there has to be an obligation for access to ducts and conduits on Mila in those areas where the company has significant market power. The above specified legislation has proven difficult in practice and ECOI has not received any cases for procedure in connection with the provisions of Article 7 but has heard comments from electronic communications companies that legislation is in fact unusable to achieve the objective for which it is intended. It is clear that an electronic communications company that receives such a request from its competitor can in various ways try to reject a request or delay the matter in such a manner that the interested company loses interest. The electronic communications market is fluid, and for this reason, electronic communications companies that are involved in development of electronic communications networks cannot wait for many months or even years for such a request to be resolved.

2526. In the working document, a number of issues are listed that NRAs can take into account, i.e. a commercial access offer, access that is obligatory pursuant to Article 61 of the Code, see Article 38 of Electronic Communications Act or planned conditional access to other wholesale procurements. It is then stated that in the light of market development, NRAs should take into account whether it was economically and technically feasible for operators to install or use civil engineering based on access to ducts and conduits in competition with a company with significant market power. [421]

2527. Here one should note that ECOI has not received information on the existence of offers for access to civil engineering that have been presented on commercial grounds and that have not been made because of obligations in force. Nor has ECOI imposed the obligation on Mila to provide access to its civil engineering or network elements on the basis of Article 38 of the Electronic Communications Act. Nor are there any current plans to impose obligations on other wholesale procurements that tackle in an adequate manner defined competition problems with respect to access to ducts and conduits. It is clear that Míla has control over facilities in telephone exchanges and technical spaces widely across the country, which is extremely important and it can be difficult for other electronic communications companies to duplicate. Hosting of equipment in these facilities is therefore often critical for those electronic communications companies that lease or have a potential interest in leasing access to Mila local loops, and also for those companies that wish to serve such parties that lease local loops with the connections necessary for the service provided all the local loops. There is furthermore the fact that access to such facilities, such as access to ducts and conduits can be important in areas where only one party operates electronic communications networks, or where the electronic communications networks of other parties reach a limited number within the area, in order to facilitate parallel coverage of another electronic communications network where this is economically feasible. All of the above means that ECOI considers that the issues listed in the Recommendation do not prevent that obligations for access to

[421] EU Commission working document with Recommendations on the relevant market, SWD (2020) 337 final, dated 18 December 2020, page 65.

networks and service pursuant to Article 48 imposed on Mila in those areas where the company enjoys significant market power on market 3a, at the same time as obligations are imposed on access to Mila civil engineering, pursuant to Article 47 of the Electronic Communications Act, and in fact, ECOI considers it important that the access obligation on Mila on market 3a covers both.

2528. In the opinion of ECOI, the obligation for access to civil engineering does not tackle all defined competition problems, and in Article 48 in the Electronic Communications Act it is stated that ECOI can prescribe that an electronic communications company with significant market power accede to reasonable requests for access to and use of specific network elements and related facilities if it is considered that denial of access or unreasonable terms and conditions, that have a similar impact, would inhibit the development of a sustainable competitive market at retail level and would not be in the interests of end users. As is stated in section 7.5.2.3, ECOI considers that Mila could have the opportunity and incentive in those areas where the company enjoys significant market power, to deny specific electronic communications companies access to market 3a or as appropriate on market 3b, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b. In addition to providing access to local loops, or as appropriate to Access Option 1 bitstream and to related facilities, this could also apply to access to ducts and conduits and to hosting options. Mila only sells a small number of local loops in its fixed line networks to external parties, despite obligations relating to this, as most electronic communications companies on the retail electronic communications market have in recent years chosen to purchase bitstream connections instead of local loops. This is among other things because of Mila network topology which uses a PON system on the company's fibre local loops, and to a very large extent VDSL network topology on the company's copper network.

2529. All of the above means that ECOI considers that access to civil engineering pursuant to Article 47 of the Electronic Communications Act, see Article 33 of the regulation on market analysis, do not suffice to tackle identified competition problems on the relevant market vis-a-vis Mila in those areas where the company is deemed to have significant market power. On the other hand, ECOI considers it important to impose such obligations on Mila on the relevant market in those areas, alongside an obligation for access to networks and Mila service on the relevant market, and also other obligations that will be prescribed here below, for the purpose of supporting fibre roll-out in the areas when it is not yet been rolled out or only to a certain degree, to promote infrastructure competition in those areas where this is financially feasible. More detailed discussion on these obligations can be found in section 8.2.2.6 here below.

8.3.2.2 Evaluation of the need for Mila to provide access to networks and service, ducts and conduits, hosting and related facilities

2530. It is then examined whether ECOI prescribes that Mila accedes to justifiable requests for access and use of specific network elements and related facilities pursuant to Article 48 of the Electronic Communications Act, see Article 34 of the regulation, on the relevant market in those areas where the company is deemed to have significant market power. Such access

can be varied, but pursuant to paragraph 2 of Article 48 of the Electronic Communications Act, one can among other things demand of electronic communications companies that they:

a. provide access to specific network elements or facilities, including unbundled access to local loops and sub loops;

b. provide access to specific active or virtual network elements and services;

c. negotiate in good faith with undertakings requesting access;

d. refrain from withdrawing access to facilities that has already been granted;

e. offer specified services on a wholesale basis for resale by third parties;

f. authorise open access to technical interfaces, protocols or other technologies that are indispensable for the interoperability of services or virtual network services;

g. to provide co-location or other forms of associated facilities sharing;

h. provide specific services needed to ensure compatibility of end-to-end services to users, or roaming service in mobile networks;

i. offer access to operational support systems or similar software systems necessary to ensure competition in the provision of services,

j. interconnection of networks or network facilities, or

k. provide access to associated service such as identity, location and presence service.

2531. When imposing access obligations it is necessary to make an assessment of whether another kind of access to wholesale inputs, either on the same or related wholesale market, could suffice to address the relevant competition problem. In paragraph 4 of Article 48 of the Electronic Communications Act it is stated that when deciding to impose obligations pursuant to paragraph 1 and 2, ECOI shall take the following into account:

a. whether it is technically and economically viable to use or install competing facilities, in light of the rate of market development and the nature and type of interconnection or access involved, including the viability of other upstream access products, such as access to ducts;

b. the expected technological evolution affecting network design and management;

c. needs to ensure technology neutrality enabling the parties to design and manage their own networks;

d. the feasibility of proving the access offered, in relation to the capacity available;

e. the initial investment by the facility owner, taking account of any public investment made and the risks involved in making the investment, with particular regard to investments in, and risks levels associated with, very high capacity networks;

f. the need to safeguard competition in the long term, with particular attention to economically efficient infrastructure-based competition and innovative business models that support sustainable competition, such as those based on co-investment in networks;

g. where appropriate, any relevant intellectual property rights, and

h. the provision of pan-European service.

2532. ECOI has assessed whether the access requirement is technologically and financially realistic and whether it would be realistic for a competitor to set up his own infrastructure in competition considering market developments and the nature of the access in question. The ECOI conclusion is in the light of experience that it is quite possible for Mila to implement the provision of that access being proposed and that is based on the company's own copper or fibre local loops, at least in the form of bitstream access with Access Option 1 on market 3b as most access seekers choose to purchase today, as such bitstream access is based among other things on self-use by Mila of the underlying copper and fibre local loops. Mila shall however continue to provide access to Mila fibre local loops that have been developed with state aid.

2533. With respect to whether it is realistic to use adjacent access instead of the above specified access, such as with access to ducts and conduits, ECOI considers that the latter access is on its own not sufficient, as it has not been used much in this country at this point in time, but ECOI considers however that the latter access could be important to support fibre roll-out where this is not in place and as appropriate promote infrastructure competition where such is economically feasible, as will be discussed in further detail in section 8.2.2.6 here below. ECOI therefore considers it important that access obligation on Mila in those areas where the company is deemed to have significant market power, should cover both access to local loops, or at least to Access Option 1 in bitstream on market 3b, and access to ducts and conduits, hosting and access to other vital facilities related to the above specified access options. Other such critical facilities will be described in more detail in section 8.2.2.7 here below. In the opinion of ECOI it is quite possible for Mila to provide such access given the capability available at the company, as such obligations have rested on Mila for a considerable period of time. In addition to this, ECOI authorises Mila now to provide VULA solution or adequate bitstream access on Access Option 1 instead of local loop access on market 3a, except on state-aided networks.

2534. ECOI furthermore considers it justifiable, having in mind the initial investment and risk involved in the investment, that Mila should continue to provide such access, as appropriate by providing adequate bitstream access over Access Option 1 instead of local loop access, but now only in specific areas. This does not however apply to Mila fibre local loops that have enjoyed state aid. This analysis leads to all obligations being lifted from Mila on market 3a in areas where about 80% of the country’s inhabitants live. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in the offer of electronic communications services in areas where Mila has significant market power.

2535. ECOI also considers that other issues prescribed in paragraph 4 of Article 48 of the Electronic Communications Act, i.e. expected technical development, the need to ensure technical independence, any kind of intellectual property rights or offer of pan-European service, do not have the impact that it is not considered proper to impose such access obligations on the relevant market.

2536. Pursuant to point a paragraph 2 of Article 48 of the Electronic Communications Act ECOI can demand that an electronic communications company with significant market power

provide access to specific elements of networks or facilities, including unbundled access to local loops and sub loops.

2537. ECOI maintains the obligation on Mila to accede to all reasonable requests from electronic communications companies for local access to copper and fibre networks, whether this is full or shared access, along with access to related facilities and service in those areas where the company has significant market power on market 3a, as is further explained in sections 8.2.2.3-8.2.2.5 here below.

2538. Where it is not possible to provide access to physical local loop, e.g. where VDSL service with vectoring is installed or in a fibre sub loop in a Mila PON network, the VULA virtual solution which can perform the same functions shall be offered, or local bitstream access according to Access Option 1. Although access according to Access Option 1 belongs to market 3b, ECOI considers it to be in accordance with proportionality to allow Mila to accede to access requests to local loop, particularly when it is not possible to provide access to a physical local loop, with bitstream access according to Access Option 1 instead of VULA if Mila so chooses. The obligation on VULA access has rested on Mila for some time but no electronic communications company has yet used the service. Access Option 1 has been popular with electronic communications companies, and it seems that electronic communications companies are generally pleased with the quality of this access.

2539. A reasonable request for full or shared access to local loop is considered to be a request for a local loop that is not in use for another purpose on that day when new use is planned.

2540. It is clear that in section 4.2, ECOI comes to the conclusion that the wholesale market 3a for local access with a fixed line connection comprises access to physical connections in access networks in copper and fibre networks, along with corresponding virtual network solutions that fulfil the conditions described in the Guidelines to the Recommendation on the relevant markets. This means all connections on fibre and copper networks to fulfil the above specified conditions and belong to the same wholesale market. There is in the opinion of ECOI no reason to segment submarkets by varying technical solutions. Copper local loops and fibre local loops are in many respects different in nature and in capabilities, so there will be discussion specifically on each type of network separately, and also on virtual access in sections 8.2.2.3-8.2.2.5 here below.

8.3.2.3 Access to copper local loops

2541. Access to the copper local loop was divided into the following sub categories:

- *Fully unbundled loop*[422]. Contains both access to the lower and upper frequency ranges of the local loop.
- *Shared unbundled loop*[423] Access for an electronic communications company to the upper frequency range of the local loop with DSL or other analogous technology while access to the lower frequency range of the local loop is used by another

[422] "Fully unbundled loop".
[423] "Shared unbundled loop".

electronic communications company at the same time for telephone services.

- *Access solely to the lower frequency range.* Access for an electronic communications company solely to the lower frequency range while the upper frequency range is not being used at the same time.
- *Access solely to the upper frequency range (naked DSL)*[424]. Access for an electronic communications company solely to the upper frequency range while the lower frequency range is not being used at the same time.

2542. Fully unbundled access means that the electronic communications company leases the local loop as a whole, i.e. its whole frequency range. When different companies lease access to the two frequency ranges this is considered to be shared access and it is known for one company to provide telephone service in the lower frequency range while another party leasing the local loop uses xDSL technology to provide for example Internet connection on the upper frequency range. The division of the frequency range is implemented with a splitter. Before the advent of xDSL technology the local loop was almost exclusively used for voice telephony. What is called "naked DSL" has increased in recent years and it involves using the local loop solely for data transmission for example in the form of an Internet connection and/or digital TV. The ECOI intends to impose obligations in accordance with all subcategories.

2543. As has been previously stated there are two xDSL standards that are most common in this country. They are ADSL and VDSL. VDSL is newer technology with more carrying capacity solely through Mila local loops. At the end of 2022, 93% of copper local loops were VDSL connections and a little under 7% were ADSL while SHDSL connections were negligible. Siminn is most prolific in providing retail service over VDSL connections, with about 78% of connections, Sýn leases about 13% of connections, Hringdu 5% and others less.

2544. As is stated in this analysis, copper local loops have decreased steadily during the past years. At the end of 2022 they were 26,237, including 6,757 which were without bitstream service. In the middle 2023 there were 24,035, including 3,017 which were without bitstream service. This considerable reduction in copper local loops without bitstream access is largely explained by Siminn during recent times has been phasing out the PSTN system which will be completed to a large extent that the end of 2023. One can expect therefore that copper local loops without bitstream service will mostly be a thing of the past at the end of 2023.

2545. Because other methods are needed to provide shared access to VDSL then this will be covered separately after discussion on traditional Access Options to copper local loops. With respect to xDSL, other than VDSL, Mila shall accede to requests from electronic communications companies for the upper frequency range of copper local loops for data transmission even though the lower frequency range is not being used for telephone service.

[424] "Naked DSL".

8.3.2.4 Access to copper sub loops and virtual access

2546. Normally the access obligation for copper local loops is implemented such that the access to sub loops[425], for example in street cabinets is part of such an access obligation. Bitstream systems that require shorter line lengths use such access to sub loops to develop the system from street cabinets to end user. This applies in the case of VDSL systems as operated by Mila and which for this purpose, uses access to copper sub loops and facilities in the company's street cabinets.

2547. As has been previously stated, it can be problematic to provide more than one VDSL operator with access to a street cabinet. This is among other things because of lack of space in street cabinets and difficulties and costs involved in either enlarging cabinets or installing more cabinets adjacent to the existing ones. There are also technical problems such as crosstalk where the VDSL signals from different users affect each other, such that service quality for all users of local loops in the same multipair cable could be impaired. Vectoring is a technology that reduces crosstalk interference and thus increases the performance of VDSL connections. Mila uses such technology in most of its copper network.

2548. In order to meet these changed needs, most regulatory authorities in Europe have imposed obligations for open virtual access to sub loops (VULA[426] or vULL). VULA functionality is to provide a connection with active equipment from the switching station/telephone exchange (node point[427]) to the home of the end user and it furthermore has the characteristic, which is sought when leasing local loop, i.e. choice of type of retail service, assured bandwidth and control possibilities.

2549. It is clear that if one is to take this into account that it must be possible to use vectoring to increase the capacity of VDSL connections and to ensure the objective for open access to the local loops that use the VDSL standard with vectoring, then the obligations on access to sub loops and virtual access that were imposed in the last analysis need to be maintained. In this connection one has to particularly keep in mind that apart from Snerpa in the West Fjords Míla is almost the only electronic communications company that provides bitstream using the VDSL technology on copper local loops today.

2550. Although no electronic communications company in this country has up to this point in time used the VULA solution on Mila copper local loops, ECOI still maintains this obligation on Mila in this market analysis, and as previously stated, Mila plans to complete phasing out the copper network at the end of 2028 where most of the effort in the phasing out will take place during the last two years. This is at the same time as the projected lifetime of this analysis. This market analysis does not have to be renewed, in part or in whole, until after 5 years have passed, so copper connections should not be a part of the next analysis of the relevant wholesale markets 3a and 3b.

2551. VULA is a system that provides access to the local loop from the technical space/node point to the end user in such a manner that the party leasing virtual access has full access to the VDSL system in question and can control service to end users in the same manner as if he

[425] "sub-loop".
[426] Virtual Unbundled Local Access.
[427] Aggregation Point.

operated his own VDSL system with all those technical and performance specifications needed to provide any kind of service over bitstream including IPTV. On the other hand, ECOI considers it appropriate in the light of the fact that no electronic communications company has requested this access, that Mila, where it is not possible to provide access to a physical local loop, will be authorised to accede to access requests to a local loop with bitstream access according to Access Option 1 (market 3b) instead of physical access to the copper local loop or VULA.

2552. In those street cabinets where VDSL equipment is already in place and where Mila ensures and guarantees that open virtual access has been activated, ECOI grants an exception from the obligation on Mila for access to sub loops while open virtual access is being offered, as the obligation for open virtual access would replace access to sub loops with respect to the local loops in question. Mila will however be authorised to provide local bitstream access to Access Option 1 instead of physical access to copper local loops or VULA access, as previously stated.

2553. In order for open virtual access, VULA, to be an adequate substitute for open access to sub loops, the 5 conditions specified below related to service and access must be fulfilled. They are:

- *Access at each location* - Mila must ensure that in each of the street cabinets where VDSL is provided, competitors receive access to local loops. Mila must maintain dynamic registration of those buildings connected to VDSL at any given time and provide access to this register.
- *Access independent of the service provided on the line* - Mila may not discriminate on the basis of the nature of the service transmitted through the line. Mila must ensure that the VDSL system in question provides each service provider with the same kind of current where there is no distinction made between types of services (for example IPTV).
- *Specific and fixed definition of line capacity* - competitors receive the same service as Mila's bitstream department, at any given time for its VDSL service and always receive the performance specified in the agreement.
- *Full control of access and service/service specifications* - service providers must receive access to those systems that specify capacity and service for end users, such as for example the amount of capacity dedicated to TV, telephone etc. and the providers must be able to control the technical and quality specifications required by each service.
- *Full control of user equipment* - the VDSL system operator in question needs to provide service providers with a router at the same price as their own retail or related party would pay. The router must be able to provide all the service that the competitor wishes to provide through the connection such as general Internet service, telephone over Internet connection and digital TV/VoD through Internet connection (ISP, VoIP and IPTV/VoD). In addition to this the competitor needs to receive full access to such a router to be able to set it up according to the service standards he requires. If the VDSL system operator in question (Míla) can provide

this service/bitstream on a router owned by a competitor, then this requirement can be withdrawn.

2554. Despite the fact that bitstream access according to Access Option 1 (market 3b) is local access, this service does not belong to market 3a for local access with a fixed line connection as the access does not fulfil the condition of full control of access and of service/service definitions (condition 4). Access Option 1 with Mila however fulfils all of the conditions. The cost structure in the tariff for VULA allows for quite high start-up costs which is because investments need to be made to provide the service. So, there is a certain minimum efficiency needed for it to be worthwhile for an electronic communications company to purchase the service. There are a few electronic communications companies on this market, and they are small in an international comparison. VULA therefore seems not to be suitable for them. Access Option 1 offers three virtual networks, for general Internet, fixed line telephone over IP (VoIP) and TV distribution with IP (IPTV). One must therefore consider that in reality there is little increased value in choosing VULA access instead of Access Option 1. The quality of connections is generally high, and one cannot see that retailers will perceive an opportunity in having access to quality definitions of connections in order to be able to differentiate their service from the service of competitors on such a technical basis. This for this reason ECOI considers that it is not damaging for electronic communications companies if Mila is allowed to provide local access over Access Option 1 instead of VULA access, where it is not possible to provide access to a physical local loop, as electronic communications companies have shown little interest in the solution. This applies particularly to copper local loops as they are on a steady decline and it is established that they will be decommissioned within a number of years, i.e. at the end of the lifetime of this analysis.

2555. If Mila decides to use the above specified authority to provide VULA or Access Option 1 then Mila is only authorised to limit access to and use of local loops on the basis of fundamental demands that relate to operational security of electronic communications networks in emergencies, its system and in proven instances the operational capability of service systems and protection of data, see the Decision of the PTA from 15 April 2005, where Siminn was obliged to process transfer requests from Og fjarskipti (now Vodafone) for ADSL service.[428]

2556. In the light of the above, ECOI maintains obligations on Mila for access for electronic communications companies to the company's copper local loops in those areas where the company has significant market power on market 3a. Obligations on access only apply to part of the local loop, for example from the Street cabinet into the user’s building. If VDSL equipment has been installed where it is planned to use vectoring or where vectoring is already applied, Mila shall ensure that open virtual access is provided or bitstream access with Access Option 1, see discussion here above.

[428] The Decision was confirmed with the ruling of the Ruling Committee for Postal and Telecom Affairs no. 3/2005.

8.3.2.5 Access to fibre local loops and virtual access

2557. Because characteristics and network topology are different in fibre networks from that in copper networks it is necessary to deal separately with access obligations to fibre.

2558. In this country, as has previously been stated, there are two types of fibre networks, Point to Point (P2P) and Passive Optical Network (PON). Ljósleiðarinn and Tengir operate Point to Point networks and some smaller networks in rural areas are also this type. Mila operates a PON network with what is called GPON and XGS-PON bitstream system on its fibre local loops.[429] Mila also operates P2P local loops to a certain extent, first and foremost in rural areas where the company has purchased or assured long-term control over smaller countryside networks, where development was to some extent or entirely funded with public grants.

2559. In the case of both of these network topologies, each end user has his own dedicated fibre local loop from the node point/technical space. In a PON network, the backhaul fibre runs from the node point/technical space to the telephone exchange/equipment facility. The node point/technical space is normally quite close to the end user, particularly with PON topology. In PON topology, the node point is in the form of a passive splitter at the kerbside or in another analogous space, where it is common that 32, 64 or 128 users are connected. In such space, the space is very limited and there is often no access to electricity or cooling and access is difficult for the purpose of working on moving individual local loops between those leasing the local loops. For this reason, it can be difficult to lease dark fibre local loop in a fibre network, but Mila does offer such leasing when it is possible to arrange it, particularly to companies.

2560. Competitors of the network operator can set up their own backbone network to the node point/technical space and have the user end of the fibre connected to his equipment. It is also possible to rent a backhaul fibre that lies from the node point to the telephone exchange.

2561. Today, Mila offers the following access to fibre in its access network:

- Fibre local loop: One optical fibre from the location of the optical distribution frame, where Mila has the last optical splitter to the demarcation box at the end user's access address. This location is called TOAL and is situated at a location where Mila has adequate capacity to provide P2P fibre connection to an end user.[430]
- Fibre local loop on PON network: Fibre from the end user to a technical facility which houses the interface between the access network and trunk line network. Fibre local

[429] Mila has purchased or taken over the operations of many, small networks in rural areas, and they generally have P2P topology, though on those networks Mila develops GPON bitstream service.

[430] According to information from Mila, in connection with market analysis of the relevant markets that was completed with ECOI Decision no. 5/2021, it is known, particularly in countryside networks, that P2P fibre local loops are leased out, but these are only a very few local loops. It is on the other hand technically impossible to provide other companies with access to fibre local loops on a fibre network with PON topology. P2P fibre local loops are therefore only accessible at those places where Mila has fibre distribution frames and has at least one fibre thread for each space in the relevant area. This applies to most countryside systems and also to a limited degree to urban areas, such as in Skagaströnd and in Leirvogstunga in Mosfellsbær.

loop in PON network is thus a traditional local loop along with an optical splitter and backhaul fibre.

- Dedicated fibre: Fibre line (1 or 2 fibres) from telephone exchange/technical facility to the access address of the end user.
- **Backhaul fibre:** One or more optical fibres from telephone exchange/technical facility to FDP, for example for VDSL2 equipment in a street cabinet or optical splitter.[431]

2562. Shared access to the local loop is not as feasible in fibre as in the copper network. It is however quite possible to implement and use varying fibres in the local loop cable if there are more fibres than users at each location. If there is a supply of fibre, such that more than one optical fibre is available from the technical space/node point to some user, two or more bitstream providers could supply one household or company with service at the same time, each on its own fibre. In the light of costs that are seen as line charges on the retail market, one may consider it unlikely that many households or companies will purchase service from many networks at the same time.

2563. It is hypothetically possible to share access to fibre local loops on PON access systems by using wave division multiplex (WDM) for access requests but one must consider it unlikely that a request for such access will be made during the lifetime of this analysis. One must also consider it a more likely development of the service that Mila uses WDM technology to further develop its bitstream service over the company's IP/MPLS system, rather than a new company appearing on the bitstream market that provides Mila competition based on Mila's own fibre local loops. New Mila XGS-PON bitstream services is an example of such development. Though ECOI considers such shared access to the Mila PON and access network unlikely during the lifetime of the analysis, Mila is nevertheless subject to such an access according to this analysis should a reasonable, fair and normal access request be made. Mila is however authorised to resolve such an access obligation with a virtual network solution (VULA) or adequate bitstream access over Access Option 1.

2564. As the optical fibre is whole and continuous between the technical space/node point and end user it is impossible to connect equipment to it on the route in question. This means in other words that access to fibre sub loops is in reality technically impossible. ECOI considers therefore there to be no need to impose an access obligation on Mila for fibre sub loops between node points and a user.

2565. Service providers that wish to provide service through Mila fibre local loops need to build their own data transfer system with the appropriate equipment and operations that this

[431] According to Mila, in connection with market analysis of the relevant markets that was completed with the ECOI Decision no. 5/2021, backhaul fibres are only used at those locations where Mila has fibre distribution frames in or near street cabinets. Mila was then only aware of one example where a party outside the former Siminn Group has installed network equipment in street cabinets, and in that instance, in a street cabinet, adjacent to Mila street cabinet. If an electronic communications companies request to use backhaul fibre, in connection with that, and Mila reiterated that the backhaul fibre was in this connection used for the purpose of accessing either distribution frame or equipment and if it was possible to provide such access, then Mila would not stand in the way of providing a backhaul fibre. External parties were not purchasing backhaul fibre lines today (2021).

entails. This includes equipment such as a system centre, equipment in Mila technical facility and user endpoint equipment. There is not yet any party that leases dark fibre local loops from Mila in any sizable quantity for the purpose of competing with the company in the provision of bitstream service.

2566. ECOI therefore maintains the obligation on Mila to provide local access to its fibre network on the relevant market in those areas where Mila is deemed to have significant market power. As a minimum, the services to be found in the Mila reference offer today shall be available, i.e. fibre local loop from a node point to an end user, on GPON, optical fibre from technical facility/telephone exchange to end user and backhaul optical fibre from technical facility/telephone exchange to the node point. Instead of the above specified access, Mila can however choose to provide virtual network access (VULA, see definition here above in section 8.2.2.4) or adequate bitstream access over Access Option 1. Mila shall however continue to provide access to the company's fibre local loops that have been deployed with state aid. Ljóslína are subject to obligations on market 6 (now market 4), and ECOI has now commenced preparation of analysis of that market and the intention is to complete it in 2024.

2567. Should fair and reasonable requests for other types of local access to the Mila fibre network be made, Mila shall accede to such requests if the access is technically and economically feasible. Should Mila deny such an access request, this shall be notified to ECOI with appropriate reasons and ECOI will decide on whether the access in question shall be granted.

2568. If Mila decides to use the above specified authority to provide VULA or Access Option 1 then Mila is only authorised to limit access to and use of local loops on the basis of fundamental demands that relate to operational security of electronic communications networks in emergencies, its system and in proven instances the operational capability of service systems and protection of data.

8.3.2.6 Collocation or sharing, including access to ducts and conduits and notifications of planned civil works

2569. ECOI came to the conclusion in section 8.2.2.1, that it was necessary to impose on Mila an obligation on market 3a in those areas where the company has significant market power, to accede to justifiable requests for access and use of civil engineering on the basis of Article 47 of the Electronic Communications Act. One must also take into account that pursuant to point g of paragraph 2 of Article 48 of the Electronic Communications Act, one may require that an electronic communications company with significant market power to host or share related facilities in another manner.

2570. In addition to this one can also find a general provision that ECOI can encourage the making of agreements on co-location or other kinds of sharing of facilities or of land in Article 35 of the Electronic Communications Act. The provision is in many respects comparable to Article 25 of the older electronic communications legislation, though there are cases that can lead to an ECOI decision somewhat broader than before. There are also no longer conditions

for a decision such that it is not possible for other electronic communications companies to gain access.[432]

2571. It can be very costly for new network operators on the local loop market to develop facilities necessary to be able to offer an adequate network. Such costs are in many instances sunk costs. In order to distribute such development costs between the companies in question the method is often used to share cost of civil works and laying of ducts.[433]

2572. Since the above-mentioned ECOI decision was published on 19 October 2021, a number of co-investment projects have emerged. Among other things, Mila and Ljósleiðarinn have implemented such a co-investment project for parallel fibre coverage deployment in Sveitarfélagið Árborg, í Reykjanesbær and í Sveitarfélagið Ölfus and there are also similar plans in Vík in Mýrdalshreppur and in Kirkjubæjarklaustur in Skaftárhreppur, other were furthermore plans for this in Grindavíkurbær, but in the light of volcanic activity there it is not clear whether this will come to fruition, at least in the near future.

2573. With respect to progress in cooperation between Mila and Tengir, one can revert to the Tengir submission received on 22 October 2023 on the preliminary draft of market analysis. In the submission it was made known that the company did not consider a cooperative project with Mila as an attractive option on the basis of prior experience. Problems have invariably arisen, and communications have usually been heavy and difficult. It was stated that Mila had been the contractor in this project and implementation had generally been on their terms and no discussions or negotiations had taken place about disputes between the companies. According to Tengir [...]. Tengir does not however exclude the possibility that the company will embark on further fibre deployment in cooperation with Mila, or other projects.

2574. One can also note that as the market is very small, with respect to the number of end users compared with most other domestic markets in the EEA, while the country is at the same time sparsely populated in the European context, new investments are risky in competition with Mila, and furthermore this takes a very long time. In Section 7.5.2.4 the conclusion was reached that it is likely that Mila dominance in market share will remain in place, at least for the time being, particularly in specific geographic areas, and there are certain indications that this dominance could strengthen even further in the lifetime of the analysis, for example if the company were possibly to gain Nova as a customer in its network, which is not unlikely.

2575. The EU Commission has also emphasised that parties to the market provide regulatory authorities with information on where it would be possible to utilise ducts, conduits and other structures for the distribution of next generation access networks (NGA).[434] For this purpose

[432] Alþingistíðindi, 152 Parliament, Parliament document 666 – 461. case, on article 35.
[433] See e.g., BEREC: Report on "Open Access", February 2011, page 23.
[434] Commission Recommendations of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) page 4

the regulatory authorities shall make efforts to ensure that where the above specified facilities exist, they should be open to all.[435]

2576. In the BEREC report from 2019[436] it was among other things stated that Europe needed significant investment in next generation networks that could support broadband services to meet the needs of households and companies. A significant part of investment in such networks is in physical infrastructure[437], for example ducts, conduits and masts. Such projects were time and labour consuming and often depended on permissions. It was often not technically and/or financially realistic to double existing physical infrastructure. Measures aimed at increased use of existing physical infrastructure reduced civil works, and cable work and thus reduced costs of fibre roll-out and accelerated such roll-out. Such measures then supported increased competition on electronic communications markets and increased non-discrimination. There were many instances of such measures having created a basis for competitors of significant market power operators to roll-out fibre in competition with them.

2577. It was furthermore stated that an obligation on a significant market power operator could be important in supporting increased deployment of fibre networks. It was stated that 26 European states had imposed such an obligation with market analyses, including 25 on the market here under discussion. Most European states had considered that the above specified directive from 2014 on measures for efficient development of high-capacity networks would not on its own suffice to strengthen efficient competition on the relevant market and on downstream electronic communications markets. Furthermore, such an obligation in many instances applied both to the access network and with respect to backhaul connections. In a review of its Recommendation on relevant markets that should be susceptible to ex ante regulation, that was completed with the publication of new Recommendations on 21 December 2020, the EU Commission had been examining whether NRAs in Europe should define a separate market for physical infrastructure. In an EU consultation document concerning this review, it was stated among other things that the emphasis of NRAs in Europe on such measures had been increasing during recent years. In the final edition of the reviewed Recommendations from 21 December 2020 these plans were withdrawn.

[435] Commission Recommendations of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) page 12

[436] See BEREC Report on Access to physical infrastructure in the context of market analyses, BoR (19) 94, from 13 June 2019. A survey was made on arrangements for access to physical infrastructure in Europe.

[437] In the report, physical infrastructure was defined in the same manner as in Broadband Cost Reduction Directive 2014/61/ EU (BCRD). This directive was transposed into Icelandic law on 29 October 2019 with Act no. 125/2019 on measures for economic deployment of high-speed electronic communications networks and the law came into force on 1 January 2020. Many European states had considered that the above specified directive would not on its own suffice to ensure efficient access to ducts and conduits of electronic communications companies with significant market power and have also imposed, obligations for such access in their market analyses after the directive in question came into force. One can in this context, refer to the fact that in the most recent market analysis by ERST in Denmark on the relevant market, ERST refrained from imposing such an obligation on TDC, which was designated as an electronic communications company with significant market power in that country. The EU Commission raised an objection to this. ECOI considers that the legislation in question from 2019 does not ensure, on its own, efficient and effective access to Mila ducts and conduits, among other things because authority is lacking to impose an obligation for cost analysed prices. In the above specified NGA Recommendation from the EU from 2010, it is precisely stated that such an obligation is important with respect to such access.

2578. With the PTA Decision no. 21/2014, the PTA imposed such an obligation on Mila. With ECOI Decision no. 5/2021, the obligation was elaborated in more detail than before in the light of the fact that it had not been used much in this country. Particularly to ensure and accelerate roll-out of fibre in more sparsely populated communities which do not enjoy such networks and to endeavour to increase infrastructure competition in such areas where Mila at many locations has a dominant position at wholesale level and Siminn at retail level. ECOI considers that those circumstances still prevail that existed at the time of the prior analysis and that is therefore necessary to maintain an obligation on Mila for hosting and sharing of related facilities in another manner pursuant to point g of paragraph 2 of Article 48 of the Electronic Communications Act in those areas where the company has significant market power on market 3a.

2579. Should the situation arise that an electronic communications company request to install a new cable in a Mila duct or conduit on the market now under discussion, and in those areas where Mila is deemed to have significant market power, which was not fully used, Mila should accede to this request, given that it was reasonable and fair. Should a reasonable request to this effect be made by an interested network operator, that was deemed reasonable and fair, then Mila shall prepare a database which contains precise information on the location and condition of the company's ducts and conduits. It shall show among other things, which ducts and conduits are free in part or in their entirety and can thus be used for such access. The database shall among other things, show the above-specified information in map form. Mila shall give ECOI and interested electronic communications companies access to the database in question. Should older cables that are no longer needed be in Mila ducts and conduits, Mila shall remove them for a reasonable charge, if this could result in interested electronic communications companies being able to use the ducts or conduits in question. If an agreement is not reached, ECOI can decide a normal recompense in this connection. Mila shall furthermore, in return for a fair charge, make necessary repairs and improvements to ducts and conduits so that they can be used for this purpose. If an agreement is not reached between Mila and the party making the request for installing fibre in a free duct or conduit, in return for a reasonable charge, ECOI can decide that.

2580. The above specified database shall be available no later than 3 months after a fair and reasonable request has been received from a network operator regarding such access in a specific area or areas. Such a request shall be limited to a clearly delineated area, e.g. municipality or village/town or district at which the interest of the network operators in question is directed in each instance.

2581. After having received the above specified map data and the above specified information on Mila ducts and conduits, the network operator who is interested in utilising free space in the ducts and conduits shall submit an order for access within one month of the time that he took delivery of the data and he shall specify, as precisely as possible, which ducts or conduits access is requested for. The total period of this process shall then not be longer than 4 months. Mila shall not commence work on its own deployment of optical fibres in the area in question, in which the network operator has shown interest subsequent to a request having been made that Mila provide the above specified information and until the notice of one month has passed that the network operator has to decide whether he will use access to the ducts and conduits. During the period in question, the requested ducts or conduits in the area are therefore reserved for the interested network operator After an order

has been made, Mila is unauthorised to install cables or perform any work on the ducts and conduits covered by the order, that in any way would impair the network operator's requested access to those ducts and conduits.

2582. The obligation in question may however not prevent Mila's normal use of its infrastructure or inhibit Mila fibre roll-out. If Mila has formally notified about fibre roll-out in the area in question, with at least 3months' notice, the priority in question for the party requesting access does not apply. Mila needs to specify precisely which addresses are involved and the timing of the civil works. Mila is not authorised to notify about planned civil works with more than 12 months' notice in this connection. In order to prevent Mila abuse of this authorisation for priority, ECOI can, having received a submission from a party interested in requesting access, evaluate whether Mila deployment plans are realistic. ECOI can then among other things, request copies of agreements with contractors and financial plans for the civil works in question. Should Mila deem that the plans for civil works in a specific area or areas are not realistic within the 12-month period, ECOI can decide that area or those areas, do not enjoy Mila priority for civil works.

2583. If ducts or conduits are such that it is possible to allow more than one party to populate them with fibre threads, then Mila is authorised to install its own thread at the same time as the interested party is conducting civil works.

2584. ECOI can decide on whether the network operators request for access to Mila ducts and conduits is deemed fair and reasonable, should a dispute arise on that issue between Mila and the network operator in question.

2585. It is clear that the above specified obligation will result in some cost and inconvenience for Mila if an electronic communications company shows an interest in such access in specific areas. ECOI points out, however, that the obligation will not apply in areas where there is efficient competition, and today this applies to areas where about 80% of the population reside. This makes the obligation much less burdensome than if it were to apply in all locations.

2586. To increase the effectiveness of the above specified obligation for access to ducts and conduits, and to support the deployment of fibre in areas where fibre is lacking, and where appropriate to strengthen parallel coverage of fibre networks where this can be considered financially feasible, ECOI maintains the obligation on Mila that the company shall publish a list of planned civil works with 3 months' notice in those areas where the company is deemed to have significant market power on the relevant market. This obligation covers both digging holes and ditches, but repairs or renewal of individual local loops are not covered by this obligation. The obligation is intended to cover overall development where no infrastructure is underground and to civil works and cable laying where infrastructure is in place and where conduits are being laid or fibre cable being pulled through them to a building and to other works related to development and roll-out of fibre networks Mila is authorised to shorten the notice in the advertisement down to 2 months if the company lays additional conduits in all parts of the works in question, that another electronic communications company can use at a later date.

2587. A Mila advertisement on planned civil works and cable works must be sufficiently detailed for parties who plan development and/or deployment of networks to acquaint themselves with the actual scope of the works. Among other things, the advertisement shall contain information on whether this is the installation of new infrastructure or whether existing infrastructure owned by the company is to be used, and all ditches and holes that are planned shall be specified along with information on planned connections of fibres and whether local loops will be laid to individual buildings (and then what buildings).

2588. Mila shall elaborate a documented procedure that should be followed when the company receives a request for participation in civil works. Mila shall respond to all such requests and provide detailed information on civil works at the first opportunity, such as on precise project duration, estimated project costs, on further information about use of the companies' facilities etc. Mila shall also make agreements with a company that seeks access pursuant to point c of paragraph 2 of Article 48 of the Electronic Communications Act in those areas where the company has significant market power on market 3a.

2589. In order that the obligation for sharing of civil works be useful for the purpose of enhancing deployment of fibre networks and for encouraging competition in infrastructure, the obligation does not apply in those areas where infrastructure is already in place, cable routes or ducts owned by an electronic communications company other than Mila that can be used by such parties for deploying fibre in competition with Mila.

2590. Míla has provided facilities, for example in civil engineering, on the basis of Article 35 of the Electronic Communications Act. Despite this ECOI considers it necessary to impose this obligation on Míla on the basis of paragraph 2 of Article 48 of the same Act as an incentive can be created for companies not to give new parties access to their facilities. A reasonable request for co-location is considered to be a request for free space in Míla buildings and such a definition can also include a request that requires enlargement or rebuilding of the premises.

2591. In the opinion of ECOI, the obligation to offer sharing or co-location, as it is described here above, is fair and does not create a significant financial burden for Mila, but rather provides the company with the opportunity to use excess capacity. In addition to this the payments for such access will provide Míla with the opportunity to receive reimbursements on its investment. These obligations have rested on Mila for many years, but now they will only apply in those areas where Mila has significant market power and where a small minority of the population live. It is however appropriate to note that ECOI is not withdrawing obligations that were imposed on Míla with PTA Decision no. 21/2015 dated 12 August 2015, on designation of companies with significant market power and the imposition of obligations on the wholesale market for trunk line segments of leased lines (market 14/2004) and PTA Decision no. 8/2014 dated 6 May 2014 on designation of a company with significant market power and on the imposition of obligations on the wholesale market for terminating segments of leased lines, with respect to access to Mila facility lease on the trunk line market. Where the obligation for sharing or co-location requires changes or extensions then Míla shall accede to normal and reasonable requests. Mila shall accede to all fair and reasonable requests for co-location of the necessary equipment related to services provided through fibre and copper local loops.

2592. Companies that lease access to Mila networks and facilities, often need to have access to electricity for equipment that they have installed in the leased facilities. With reference to point i in paragraph 2 of Article 48, ECOI maintains an obligation on Mila to provide lessees with access to electricity and to other vital facilities where this can be implemented, whether the lessee in question installs his own meter or not, but this can be decided to a certain extent by circumstances in each individual case.

2593. The obligation to offer sharing or co-location is imposed on Míla for the facilities the company controls, including in buildings, ducts and conduits and other facilities. The obligation covers fair and reasonable requests but does not, as stated before, entail a significantly increased financial burden on Míla. Should agreement not be reached between the parties on access to sharing or co-location ECOI can decide a cost related price and reasonable conditions for access. With respect to price control for access to Mila ducts and conduits, and also for facilities lease, there will be further discussion in sections 8.3.4.4 and 8.3.4.5 here below.

8.3.2.7 Access to other essential facilities

2594. ECOI considers it necessary to impose the obligation on Mila to accede to reasonable requests for access to and use of more critical service elements, than those discussed here above, and access seekers may need so that access to those elements named above can be fully utilised. The Electronic Communications Act allows for the possibility of obliging a significant market power operator to provide various related services that are necessary for the lessee to have full use of the local access. Various authorisations of this kind can be found in paragraph 2 of Article 48 of the Act.

2595. With reference to points b and f in paragraph 2 of Article 48 of the Electronic Communications Act, ECOI intends to impose an obligation on Mila to provide other electronic communications companies with open access to technical interfaces, protocols and other key technologies which are necessary to ensure interoperability of services (connections with other networks).

2596. With reference to point h in paragraph 2 of Article 48 of the Electronic Communications Act, ECOI imposes an obligation on Mila that the company offer access seekers service that ensures end-to-end operational continuity to users.

2597. With reference to point i in paragraph 2 of Article 48, ECOI maintains the obligation on Mila to provide access to support to operational systems or analogous software necessary for local loops to be used for the purpose for which they were leased and to ensure competition in offer of electronic communications service. Such access among other things, constitutes the following:

- Operational support
- A database to provide information before an order is made.
- Delivery.
- Orders.
- Maintenance.
- Fault processing.

- Invoicing.

8.3.2.8 Migration from older electronic communications networks

2598. In the ECOI Decision no. 5/2021 and the prior PTA Decision no. 21/2014, it is stated that the obligations that rested on Mila for access to copper local loops should not be withdrawn even where Mila changed the structure of its systems to next generation of networks, for example if fibre cable replaced copper local loops (migration), unless an agreement on the procedure for migration had been reached where the party leasing the local loop would thus be in a position to implement a new type of local loop instead of the older one when the migration took place. Should such an agreement not be reached then Mila should inform parties to the market of all changes to the arrangements of local loop access that are likely to alter companies' competitiveness on the market with 5 years' notice.[438] Deviation can be made from the above period of notice on receipt of advance endorsement by ECOI. If a Mila request for such an exemption were considered reasonable and fair, the ECOI would open consultation with stakeholders. If no objections were raised and stakeholders had access to substitute products and did not suffer any unnecessary damage when migrating between systems ECOI would endorse such an exemption. Should Mila make changes to its systems it was important that:

- System downtime should be at a minimum for those wholesale customers operating on the relevant market segment.
- Costs resulting from the migration should not be so great as to act as an entry barrier to prevent the migration.
- An integrated process for migrating all parties would be in place, with care taken to ensure non-discrimination between all parties on the market.
- The time taken for migration should be at a minimum with respect to the type and scope of the application.

2599. There should be a service level agreement in force and a list of key performance indicators to ensure the efficiency of the migration procedure, unless there were indications that such were unnecessary or were not cost-effective.

2600. In the new Electronic Communications Act, there is an additional provision in Article 60 on migration from older electronic communications networks. Further elaboration on this provision can be found in Article 45 of the regulation on market analysis in the field of electronic communications no. 556/2023. It is worded as follows:

> "In order to facilitate smooth migration from copper networks to next generation networks, ECOI shall with the interests of end users in mind, monitor such migration by electronic communications company and can where necessary, impose conditions for appropriate migration procedures, for example with respect to conditions for advance

[438] Commission Recommendations of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) page 43. See further BEREC Common Position on best practices in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market - Page 18.

notifications on such migration, time schedule, transparency and access to other service that can replace that which is decommissioned and which is at minimum of comparable quality. ECOI can also require an electronic communications company that plans such migration, to subject it to risk analysis having in mind operational continuity and end user access to service and shall take appropriate action to address such risks.

An electronic communications company with significant market power shall notify ECOI in advance of plans to decommission or replace part of a network that is subject to obligations that have been imposed on the company, pursuant to the provisions of the regulation and the Electronic Communications Act. This applies among other things if such a company decides to stop operating a copper network or part of a network and migrate users to a fibre network.

ECOI shall ensure that the procedure with decommissioning or replacing has a clear schedule and conditions, including that the implementation is notified with reasonable notice and, if considered necessary to protect competition and rights of end-users, that arrangements are made for other options to be available, at least of comparable quality which provide access to the new network.

In order to prevent unjustifiable delays, ECOI can withdraw obligations that apply with respect to copper that is to be decommissioned or replaced, when it has been verified that the access provider:

a. has established appropriate conditions for transfer, including that another access option is available and least of comparable quality that was available through the older network which makes it possible for applicants for access to reach the same end users, and

b. has complied with conditions and procedure that was notified in accordance with this Article.

Such withdrawal shall be endorsed in accordance with case procedure rules 24 and 28 of the Act on ECOI no. 75/2021."

2601. ECOI initiated a special case in the Authority's case system in February 2023 to investigate Mila implementation with respect to the above specified Article 60 of the Electronic Communications Act. In a letter from ECOI to Mila dated 20 February 2023 it was stated that there had been considerable growth in fibre local loops at a national level and that Mila had conducted vigorous fibre deployment during the recent years. At the same time, the company's copper connections have been on the decline. One can expect that Mila plans for changing and developing the company's systems over to the next generation of networks will be implemented.[439] It was stated that according to the above specified legal provision, companies with significant market power should notify ECOI in advance and in a timely

[439] In the letter, ECOI referred to a Mila reply dated 22 September 2020 a query from ECOI dated 7 September 2020 on company plans for decommissioning copper during the next 10 years and to paragraph 196 in appendix A to the ECOI Decision no. 5/2021.

manner about plans for decommissioning electronic communications networks in part or completely. The provision is based on Article 81 of the Code.

2602. It was then stated that the above specified legal provision applied to plans of an electronic communications company that is bound by obligations, to decommission a network or replace it. The company was bound to notify ECOI on such plans with reasonable notice. The Authority should then make sure that the work was done according to a clear schedule; relevant parties were informed about the civil works with reasonable notice and adequate access was on offer to a new network. With reference to this obligation of electronic communications companies and to the ECOI role, and also to Article 60 of the Electronic Communications Act, the Authority requested the following information from Mila:

1. Confirmed schedule from Mila on phasing out of the copper network, itemised by telephone exchange.

2. Information on whether Mila had explained these plans to customers.

3. Information on whether Mila had made an assessment of the impact of the phasing out of the copper network on users, for example whether all users would have access to company fibre networks or those of other parties.

2603. ECOI finally stated that this information was also important for market analysis of markets 3a and 3b, which were being processed.

2604. In a letter of reply from Mila dated 6 March 2023, it is first stated that Mila copper local loops had decreased by about 20% during 2021 and from 120, 000 to 47,000 during the years 2016-2021. This reduction has been continuous, and they had increased by a further 12,000 in 2022.

2605. It was then stated that there was an Excel file attached to the reply, which showed the requested Mila schedule for phasing out the copper network. Mila reiterated that this was a plan that was subject to various external factors that could impact on how phasing-out would progress. In the above specified Mila plan, it was stated that the company planned to complete the decommissioning of the copper network no later than the end of 2028, and that most of the effort in phasing out would be during years 2027 2028.

2606. With respect to the question on whether customers had received an explanation of Mila plans in this connection, the company referred to the company plan to this effect dated 22 September 2022 which had been described in appendix A to ECOI market analysis which was completed with ECOI Decision no. 5/2021. There was also information provided on Mila plans for decommissioning copper during the coming 10 years. It was furthermore stated there that Mila had already, i.e. in September 2020, informed electronic communications companies about this plan. In the consultation process for above specified market analysis, that is in September 2021, Mila customers had again been given information on these plans. Since that time, there had been regular communication between Mila and the customers in question on this issue. Mila considered that company customers were very well informed about Mila plans on decommissioning the copper network. Mila planned to send customers again a special notification, as circumstances required in each instance, in a timely manner prior to the closing of each phase/area. In some instances, a special notification might be

necessary, for example if there was no use of the exchange in question. If ECOI considered that Mila was obliged to notify customers about the closures in question of copper connections in another and more detailed manner, then Mila requested guidance/information on this.

2607. With respect to the question of whether Mila had made an assessment of the impact on users of decommissioning the copper network, for example whether all users would have access to company fibre networks or those of other parties, Mila replied that the company had scheduled the decommissioning in such a manner that in the vast majority of cases it was expected that fibre roll-out would be complete when the decommissioning of copper took place. One might however possibly expect that in some instances the cost of fibre deployment would be more than an amount that paid for network operators to deploy fibre. In those instances, it was planned that an end-user would receive an adequate connection over a mobile network or would be given the option of taking part in the cost of the civil works. In this connection, one could point out that in some instances, there were leisure houses that had previously been registered farms with a copper connection in use. They had then not been eligible for grants through the Iceland Digital Connected project and did not therefore have fibre. Mila considered that in such instances, and users needed to migrate to a mobile network solution. With regards to connections in urban nuclei, Mila expected that fibre roll-out would be in step with phasing out, or that one could expect that good mobile network connections were or would be on offer. Users should then have the possibility of comparable or better connections when copper was decommissioned.

2608. Subsequent to the above specified communications between ECOI and Mila, ECOI closed the above specified case on 3 April 2023, as the Authority considered Mila replies and plans to be adequate.

2609. With an email from Mila's lawyer to ECOI dated 19 April 2023 Mila requested information relating to the decommissioning of the copper network and the involvement of ECOI in this connection, see paragraph 2 of Article 60 of the Electronic Communications Act. It was stated that Mila had kept ECOI regularly informed about the schedule for this, see for example with letters from Mila to the Authority from January 2017, 22 September 2020, where a plan had been presented on decommissioning the system during the coming 10 years and then recently a letter from Mila to this effect dated 6 March 2023. In the latter letter Mila had requested information/guidance from ECOI if the Authority considered that Mila should inform about the decommissioning of the copper system in another manner. Mila wished to follow up on this query and hear whether ECOI had any previously defined time limit for decommissioning the system or any specific reference in this connection. The electronic communications regulatory framework does not refer to a precise period of notice in this respect but only to reasonable notice. It would be very useful to know how ECOI sees this situation.

2610. On 24 April 2023 ECOI replied to the above specified email from Mila. It was stated that according to a letter of reply from Mila dated 6 March 2023 that it was expected that fibre roll-out would be step in step with phasing out or that the end user would receive an adequate connection over a mobile network or would have the offer of participation in course with the civil works. So, the customers in question should be well informed. ECOI had not understood from the Mila reply that there was a request for further information/guidelines unless there

was a need for a better arrangement in the opinion of ECOI. The Authority had considered that the Mila reply had been adequate, and the case therefore closed on 3 April 2023.

2611. It was also stated in the ECOI reply that with regards to the period of notice, no time limit had been defined for the decommissioning, nor was there any other reference related to this. The Authority had only been investigating whether a notification would definitely be received by end users in a timely manner, so that they could take measures if necessary or even involve the Emergency Line as the universal service provider. There was a continuous need for ECOI, and the Emergency Line being well informed about the schedule and changes to the schedule, for it to be possible to embrace those households that did not have the option of another electronic communications connection and that were included in universal services, see Article 62 in the Electronic Communications Act.

2612. As a special legal provision has now come into force with respect to when a company with significant market power plans to decommission or replace parts of a copper network that is covered by obligations that have been imposed on the company, ECOI considers there to be no need to retain the above specified obligation on Mila notifications for this in those areas where Mila is considered to have significant market power, and certainly not in those areas where the company is not deemed to have such significant market power. In the case that has been discussed here above, ECOI received adequate information and time schedule with respect to the decommissioning of the Mila copper network. ECOI used among other things this information in the market analysis that is now here under discussion. Mila has not informed ECOI on changes to this schedule or arrangement, but ECOI reiterated that Mila needed to do this if the schedule were to change.

8.3.2.9 Ban on withdrawing access to facilities that has already been granted

2613. Finally, it should be noted that there is a new provision in point d of paragraph 2 of Article 48 of the Electronic Communications Act to the effect that ECOI can require of an electronic communications company that it does not withdraw access to facilities that has already been granted.

2614. As explained above, ECOI grants Mila authority to offer VULA access or Access Option 1 in bitstream instead of local loop lease on the company's copper and fibre networks, except in cases of state-aided fibre networks, if the access seeker requests local loop lease to such state-supported networks.

2615. As identified competition problems indicate that Mila could have the opportunity and incentive in those areas where the company has significant market power to deny specific electronic communications companies access to market 3a or to withdraw access that has already been granted, or offer access at acceptable terms that equate to denial, ECOI considers it necessary to impose on Mila an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in those areas where Mila is deemed to have significant market power on the relevant market. Mila shall continue to provide access to ducts and conduits, hosting and local loop lease access that the company already provides in those areas where the company is deemed to have significant market power, both on copper and fibre networks, except if the access seeker in question accepts such a withdrawal.

2616. Should a reasoned request come from Mila for withdrawal of the above specified access, and the access holder does not accept such withdrawal, ECOI can endorse this with a special administrative decision if arguments to support this are stronger than the interests of the relevant access holder for unchanged access. The relevant access seeker will then be a party to such an administrative case and may present his objections. Circumstances that can justify such a request could for example involve changes to system topology, future development of high-capacity networks, lack of space in civil engineering, including ducts and conduits, and/or other fundamental changes to network systems or infrastructure that make such withdrawal necessary.

8.3.2.10 Conclusion on Imposition of obligations on Míla for access on market 3a

2617. With the authority in Articles 47 and 48 of the Electronic Communications Act, ECOI maintains the obligation on Mila to accede to fair and reasonable requests for access to and use of civil engineering and local access to its copper and fibre networks, whether it is shared or fully unbundled access, and to related facilities and service at wholesale level. These obligations apply in those areas where Mila has been designated as a company with significant market power on market 3a. With respect to xDSL, other than VDSL, Mila shall accede to requests from electronic communications companies for the upper frequency range of copper local loops for data transmission even though the lower frequency range is not being used for voice telephony service. With respect to fibre local loops, Mila shall among other things, provide access to the following service offer:

- Fibre local loop: One optical fibre from the location of the optical distribution frame, where Mila has the last optical splitter to the demarcation box at the end user's access address. This location is called TOAL and is situated at a location where Mila has adequate capacity to provide P2P fibre connection to end users.

- Fibre local loop on PON network: Fibre from the end user to a technical facility which houses the interface between the access network and trunk line network. This is a case of a standard fibre local loop with optical splitter and backhaul fibre.

- Backhaul fibre: One or more optical fibres from telephone exchange/technical facility to FDP, for example for VDSL2 equipment in a street cabinet or optical splitter.

2618. Although ECOI considers shared access to Mila PON fibre local loops unlikely during the lifetime of the analysis, because of technical difficulties with this, ECOI plans nevertheless to impose an obligation on Mila for such access, should a reasonable, fair and normal request for access be made. Where there is no possibility to provide access to a physical local loop, Mila can't however choose to provide virtual network access or adequate bitstream access to Access Option 1. Mila shall however continue to provide access to the company's fibre local loops that have been deployed with state aid. Ljóslína are subject to obligations on market 6 (now market 4), and ECOI has now commenced preparation of analysis of that market and the intention is to complete it in 2024.

2619. Should fair and reasonable requests for other types of local access to the Mila fibre network be made, Mila shall accede to such requests if the access is technically and

economically feasible. Should Mila deny such an access request, this shall be notified to ECOI with appropriate reasons and ECOI will decide on whether the access in question shall be granted.

2620. If Mila decides to use the above specified authority to provide VULA or Access Option 1 then Mila is only authorised to limit access to and use of local loops on the basis of fundamental demands that relate to operational security of electronic communications networks in emergencies, its system and in proven instances the operational capability of service systems and protection of data.

2621. Should the situation arise that an electronic communications company request to install a new cable in a Mila duct or conduit on the market now under discussion, which was not fully used, Mila should accede to this request, given that it was reasonable and fair. Should a reasonable request to this effect be made by an interested network operator, that was deemed reasonable and fair, then Mila should prepare a database, which contained precise information on the location and condition of the company's ducts and conduits. It shall show among other things, which ducts and conduits are free in part or in their entirety and can thus be used for such access. The database shall among other things, show the above-specified information in map form. Mila shall give ECOI and interested electronic communications companies access to the database in question. Should older cables that are no longer needed be in Mila ducts and conduits, Mila shall remove them for a reasonable charge, if this could result in interested electronic communications companies being able to use the ducts or conduits in question. If an agreement is not reached, ECOI can decide a normal recompense in this connection. Mila shall furthermore, in return for a fair charge, make necessary repairs and improvements to ducts and conduits, so that they can be used for this purpose. If an agreement is not reached between Mila and the party making the request for installing fibre in a free duct or conduit in return for a reasonable charge, ECOI can decide on reasonable recompense.

2622. The above specified database shall be available no later than 3 months after a fair and reasonable request has been received from a network operator regarding such access in a specific area or specified areas. Such a request shall be limited to a clearly delineated area, e.g. municipality or village/town or district at which the interest of the network operators in question is directed in each instance.

2623. After having received the above specified map data and the above specified information on Mila ducts and conduits, the network operator who is interested in utilising free space in the ducts and conduits shall submit an order for access within one month of the time that he took delivery of the data and he shall specify, as precisely as possible, which ducts or conduits access is requested for. Mila shall not commence work on its own deployment of optical fibres in the area in question, in which the network operator has shown interest subsequent to a request having been made that Mila provide the above specified information and until the notice of one month has passed that the network operator has to decide whether he will use access to the ducts and conduits. During the period in question, the requested ducts or conduits in the area are therefore reserved for the interested network operator. The period in question can be shorter than 4 months, all depending on how quickly Mila delivers the necessary information on those ducts and conduits that the request concerns, to the interested network operator. After an order has been made, Mila is

unauthorised to install cables or perform any work on the ducts and conduits covered by the order, that in any way would impair the network operator's requested access to those ducts and conduits.

2624. The obligation in question may however not prevent normal Mila use of its infrastructure or inhibit Mila fibre roll-out. If Mila has formally notified about fibre roll-out in the area in question, with at least 3 months' notice, the priority in question for the party requesting access does not apply. Mila needs to specify precisely which addresses are involved and the timing of the civil works. Mila is not authorised to notify about planned civil works with more than 12 months' notice in this connection. In order to prevent Mila abuse of this authorisation for priority, ECOI can, having received a submission from a party interested in requesting access, evaluate whether Mila deployment plans are realistic. ECOI can then among other things, request copies of agreements with contractors and financial plans for the civil works in question. Should Mila deem that the plans for civil works in a specific area or areas are not realistic within the 12-month period, ECOI can decide that area or those areas, do not enjoy Mila priority for civil works.

2625. ECOI can decide on whether the network operators request for access to Mila ducts and conduits is deemed fair and reasonable, should a dispute arise on that issue between Mila and the network operator in question.

2626. ECOI also intends to maintain the obligation on Mila to offer co-location/sharing to facilities related to the service provided over copper or fibre local loops. A reasonable request for co-location/sharing is considered to be a request for free space in Míla buildings and such a definition can also include a request that requires enlargement or rebuild of premises. Where the obligation for sharing or co-location requires changes or extensions then Míla shall accede to normal and reasonable requests. The obligation to offer sharing or co-location is imposed on Míla for the facilities the company controls, including in buildings and other facilities. The obligation covers fair and reasonable requests but does not entail a significantly increased financial burden on Míla. Should agreement not be reached between the parties on access to sharing or co-location ECOI can decide a cost related price and reasonable conditions for access.

2627. Mila shall authorise open access for other companies to technical interfaces, communications protocols and other technologies that ensure interoperability of services (connections with other networks). Mila shall provide access to support systems and information necessary for the local loops to be useful for the purpose for which they were leased. Such access can among other things be in the form of operational support, database to gather information prior to orders being made, delivery, orders, maintenance, handling of faults and invoicing. Mila shall furthermore provide service providers with access to electricity in technical spaces if possible.

2628. Míla shall provide a list of planned excavation and duct activities (civil works) with 3 months' notice in those areas where the company is deemed to have significant market power. This obligation covers both digging holes and ditches, but repairs or renewal of individual local loops are not covered by this obligation. The obligation is intended to cover overall development where no infrastructure is underground and to civil works and cable laying where infrastructure is in place and where conduits are being laid or fibre cable being

pulled through them to a building and to other works related to development and roll-out of fibre networks Mila is authorised to shorten the notice in the advertisement down to 2 months if the company lays additional conduits in all parts of the works in question, that another electronic communications company can use at a later date. In order that the obligation for sharing of civil works be useful for the purpose of enhancing deployment of fibre networks and for encouraging competition in infrastructure, the obligation does not apply in those areas where infrastructure is already in place, cable routes or ducts owned by an electronic communications company other than Mila that can be used by such parties for deploying fibre in competition with Mila.

2629. A Mila advertisement on planned civil works and cable works must be sufficiently detailed for parties who plan development and/or deployment of networks to acquaint themselves with the actual scope of the works. Among other things, the advertisement shall contain information on whether this is the installation of new infrastructure or whether existing infrastructure owned by the company is to be used, and all ditches and holes that are planned shall be specified along with information on planned connections of fibres and whether local loops will be laid to individual buildings (and then what buildings).

2630. Mila shall elaborate a documented procedure that should be followed when the company receives a request for participation in civil works. Mila shall respond to all such requests and provide detailed information on civil works at the first opportunity, such as on precise project duration, estimated project costs, on further information about use of the companies' facilities etc. Mila shall also make agreements with a company that seeks access pursuant to point c of paragraph 2 of Article 48 of the Electronic Communications Act in those areas where the company has significant market power on market 3a.

2631. In the ECOI Decision no. 5/2021 and the prior PTA Decision no. 21/2014, it is stated that the obligations that rested on Mila for access to copper local loops should not be withdrawn even where Mila changed the structure of its systems to next generation of networks, for example if fibre cable replaced copper local loops (migration), unless an agreement on the procedure for migration had been reached where the party leasing the local loop would thus be in a position to implement a new type of local loop instead of the older one when the migration took place. Should such an agreement not be reached then Mila should inform parties to the market of all changes to the arrangements of local loop access that are likely to alter companies' competitiveness on the market with 5 years' notice. As a special legal provision has now come into force with respect to when a company with significant market power plans to decommission or replace parts of a copper network that is covered by obligations that have been imposed on the company, ECOI considers there to be no need to retain the above specified obligation on Mila notifications for this in those areas where Mila is considered to have significant market power, and certainly not in those areas where the company is not deemed to have such significant market power.

2632. Finally, account is taken of a new provision in point d of paragraph 2 of Article 48 of the Electronic Communications Act to the effect that ECOI can require of an electronic communications company that it does not withdraw access to facilities that has already been granted. ECOI considers it necessary to impose on Mila an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in those areas where Mila is deemed to have significant market power on the relevant

market. Mila shall continue to provide access to ducts and conduits, hosting and local loop lease access that the company already provides in those areas where the company is deemed to have significant market power, both on copper and fibre networks, except if the access seeker in question accepts such a withdrawal.

2633. Should a reasoned request come from Mila for withdrawal of the above specified access, and the access holder does not accept such withdrawal, ECOI can endorse this with a special administrative decision if arguments to support this are stronger than the interests of the relevant access holder for unchanged access.

8.3.3 Obligation for non-discrimination on Míla on market 3a

8.3.3.1 In general, on non-discrimination obligation

2634. According to Article 50 of the Electronic Communications Act, ECOI can impose obligations on electronic communications companies designated with significant market power to practise non-discrimination with respect to interconnection or access. Obligations for non-discrimination shall particularly ensure that companies apply comparable conditions in comparable circumstances vis-à-vis other providers of comparable service and shall provide service and information on the same conditions and quality as they provide for their own service or service to their subsidiaries or partners. Obligations for non-discrimination can constitute a company's duty to provide other companies with services and service related to access, including to themselves, with the same time limits, terms and conditions, among other things, including with regards to those who must be connected and to service level, and to the same systems and with the same procedures, to ensure equal access. The provisions of Article 50 correspond to the provisions of Article 30 of the older legislation but are somewhat more detailed. In the bill that became the electronic communications legislation it is however noted that it is not expected that there will be any fundamental change to the implementation.[440]

2635. There is further discussion on assessment of significant market power in Article 36 of the regulation on market analysis in the field of electronic communications. It states in the provision that obligations for non-discrimination can constitute a company's duty to provide all companies with products and service related to access, including to themselves with the same time limits, terms and conditions, among other things those who must be connected and service level, and with the same systems and procedures, to ensure equal access. This is called the equivalence of input obligation (EoI).

2636. It is furthermore stated that it is likely that such a stringent equivalence obligation could result in higher costs for the company in question than a milder equivalence obligation i.e. equivalence of output (EoO). When imposing obligations, ECOI is obliged to balance these increased costs against more powerful competition that the equivalence of input obligation can bring and to particularly consider whether there is a need for this obligation in those instances where direct obligations are not imposed on the relevant electronic communications company for price control. Specifically, such an obligation could be justifiable, in accordance with proportionality and could return substantial gains, in the case

[440] Alþingistíðindi, 152 Parliament, Parliament document 666 – 461. case, on article 50.

of a new electronic communications network or where the intention is to build such a network, rather than in the case of older networks or systems that may even be on their way out, in order to harmonise them with this stringent non-discrimination obligation. The imposition of such a stringent non-discrimination obligation on networks owned by small electronic communications companies could exceed proportionality and therefore not be justifiable.

2637. A non-discrimination obligation could also be in the form of an economic replicability test, which could then replace an obligation for price control, see Article 52 of the Electronic Communications Act, but such an obligation requires that the party in question has significant market power and is a vertically integrated company operating both at wholesale and retail levels.

2638. It is clear that in order for an obligation for access to return the desired results, the access obligation must be imposed in parallel with an obligation for non-discrimination. The obligation is intended to prevent such a company from discriminating, for example with regard to price and quality of service, that is selling less expensive and better services to its own retail departments than to other parties. Fair, moderate and justifiable conditions for access, including price are basic issues when striving to strengthen competition. The obligation for non-discrimination does however not mean that all companies are subject to exactly the same conditions but rather that all difference in conditions is based on objective criteria.

2639. In the last ECOI market analysis in case no. 5/2021, the main import of the non-discrimination obligation concerned ensuring that vertical integration between Mila and Siminn would not result in Mila customers being discriminated against. In this market analysis, ECOI has come to the conclusion that despite the sale of Mila to Ardian, and thus the severance of ownership and management connections between the companies, one can still discern the characteristics of vertical in integration between the companies, or there continue to be at least strong commercial ties between the companies. On the other hand, such connections cannot be considered as damaging for competition as in the case of vertically integrated companies.

2640. As significant market power on the market for local access provided at a fixed location (market 3a) can lead to a company discriminating against parties that require the service, if an obligation for non-discrimination is not imposed, ECOI considers it proper to maintain the obligation for non-discrimination in order to ensure equal access for Mila customers, but now only in those areas where the company is deemed to have significant market power.

2641. Even though companies have been assured local access at the same price, companies with significant market power can try to discriminate on other grounds and in this way increase their costs or part of them in order to cause them problems and even push some of them of out of the market, and thus for example favour priority purchasers. Such practices could for example be in the form of varying quality of service, differing service offers, varying processing of applications, inadequate information (among other things on new service and/or planned distribution networks), unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

2642. ECOI believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions. As an example of varying quality, one could mention discrimination between electronic communications companies with respect to connection time of local loops, for example with an advantage for priority purchasers. Discrimination can also manifest itself in varying prices and/or conditions for access to information systems and in parties being provided access to systems of varying ages and capacity.

2643. In section 7.6.2.2 here above, there was discussion on obligations that rest on Mila pursuant to the settlement between CA and Mila dated 15 September 2022. The provisions of Article 5 of the settlement prescribe on equal access for electronic communications companies to networks, electronic communications structures, facilities and Mila wholesale service. In the previous sections the conclusion is reached that the conditions of the settlement do not address identified competition problems pursuant to this market analysis, among other things because ECOI is specifically assigned authority in law to impose obligations in question on companies with significant market power subsequent to detailed analysis of competitive circumstances. Obligations are thus not imposed on electronic communications companies by ECOI unless an assessment of competitive conditions on the relevant market have been conducted and the relevant company has been designated as having significant market power on that market, that specific competition problems have been identified and that reasonable considerations support intervention to endeavour to solve those problems. Then the non-discrimination obligation that ECOI plans to impose on Mila in those areas where the company is deemed to have significant market power are more detailed, more specialised and are not elaborated in the same manner as those conditions that were imposed in connection with the merger between Mila and Ardian, as the cases differ in nature.

2644. The information gained by Mila from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see among other things Article 42 of the Electronic Communications Act.

2645. ECOI intends to maintain the obligation on Mila to respect non-discrimination against all electronic communications companies that purchase local access on a fixed line network, regardless of whether it is copper or fibre, in those areas where the company is deemed to have significant market power. All purchasers of such service shall, having taken circumstances into account, use the same conditions (including prices) that apply for related parties or for those cooperating with Mila. This also applies to Mila ducts and conduits, hosting and other critical facilities related to market 3a.

8.3.3.2 Equivalence of Input non-discrimination in access

2646. ECOI makes the requirements that quality of access provided to unrelated parties be no less than that of services provided by Míla to priority purchasers or parties that have strong commercial ties with the company. ECOI plans to maintain the Equivalence of Input (EoI) obligation on Mila. ECOI considers that this obligation is more useful for ensuring complete non-discrimination than what is called the Equivalence of Output (EoO) obligation, and this

obligation has furthermore been in force vis-à-vis Mila since 2014 and therefore it should therefore not be unnecessarily burdensome to continue to work according to that obligation.

2647. Equivalence of Input means that Mila is obliged to offer the same price, use the same service procedures/service systems, the same time limits and to publish the same information about the service (among other things development and distribution information) to all customers. In this way all customers receive access to the same information, the same delivery and ordering service and receive the same treatment within the same time limits. The same applies to notification of faults and their solutions as to other access for the staff of customers to Mila's information systems which are used for service to end users.

8.3.3.3 Equal access to information, impact on development of product offer and equal service time

2648. Information on local access and service related to access, among other things access to ducts and conduits, facility lease and advertisements on fibre deployment, shall be accessible to all electronic communications companies in the same manner and at the same time. ECOI considers it particularly important that Míla does not have the opportunity to discriminate in an irregular manner between customers with respect to innovations on the market. As related retail markets are in continuous development, all parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new, improved and less expensive retail service (for example more capacity in Internet access) at the same time as priority purchasers or parties that have strong commercial connections with Mila. ECOI plans to maintain those obligations on Mila that all parties be informed about distribution, enlargement or other developments of Mila local loop networks (and related service and other innovations) with the same notice. This notice shall under no circumstances be shorter than 3 months.

2649. Information shall among other things contain planned prices, conditions, technical specifications, scheduled distribution plans, updated position on distribution and planned connection points. Such information is particularly important with respect to deployment of fibre local loops. Mila shall take care that applications from all electronic communications companies for local access and related services be processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Míla is not authorised to make unreasonable demands on applicants as a condition for processing an application.

8.3.3.4 Service level agreements and quality assurance

2650. ECOI requires that Mila make service agreements with all purchasers of local access and access where among other things the quality of service shall be prescribed and issues relating to non-discrimination as itemised in the obligations that ECOI plans to impose on Mila on the relevant market in those areas where the company has significant market power. These are Service Level Agreements (SLAs). Such agreements shall cover the various service issues that relate to local access and access to ducts and conduits and to facility lease, including orders, delivery, service access, transfer of service and repairs. The service agreements shall also among other things prescribe how mutual interference of signals will

be avoided between parties on the Mila local loops. They shall furthermore prescribe efficient and economic procedures with respect to service switching at wholesale, i.e. when a Míla counterparty decides to transfer from one service to another at Míla. Parties can consult with ECOI on the making of such agreements and ECOI can rule on matters of contention when making these agreements. Service level agreements can vary between parties, depending on the wishes of Míla counterparties. Mila shall respect to the non-discrimination obligations when making such agreements.

2651. In addition to the obligation to make service level agreements ECOI maintains the obligation on Mila to issue a specific declaration on quality guarantees (Service Level Guarantees - SLGs). The SLGs shall cover the various service issues that relate to local access and access to ducts and conduits and to facility lease, including orders, delivery, service access, transfer of service and repairs. Such service level guarantees shall among other things prescribe specific fines which Míla must pay to its counterparties should the service level guarantee not to be honoured. In this instance it could be that a specific amount is paid for each day that for example delivery or repair exceeds the time-limit prescribed by the SLG. Such provisions for fines should be objective, simple and unequivocal such that the parties should not need to refer to ECOI or to the courts for interpretation. Míla shall ensure that interested electronic communications companies be informed of the content of the service level guarantee.

2652. With respect to grounds for the necessity of maintaining the obligation in question on Mila, but now only in specific municipalities, reference is made to the discussion in section 8.2.1 here above.

8.3.3.5 Measurement of key performance indicators (KPIs) and publication of results

2653. In order to ensure that Míla respects the obligation for non-discrimination that is intended to be maintained on the company for making SLG, ECOI maintains the obligation on Míla that it should collect and publish regularly certain key performance indicators (KPI). There is discussion on the necessity for publishing such information in the BEREC document on the relevant market from December 2012[441] and in the ERG document on obligations[442]. The key issues mentioned are in this instance delivery of orders, delivery of service, service availability, switching of service and maintenance. In this way Míla's counterparties can compare the service they receive with the service received by companies related to Mila, for example a priority purchaser on the one hand with the average in the sector on the other. In this way Míla counterparties can determine whether they are being discriminated against. The publication of conclusions of measurements of key performance indicators will as shown above help in casting light on whether the non-discrimination obligation is complied with, particularly with respect to those factors related to pricing and whether Míla has fulfilled its duty to make adequate service level agreements with its counterparties.

[441] BEREC common position on best practice in remedies on the market for wholesale broadband access (including bitstream access) imposed as a consequence of a position of significant market power in the relevant market, BoR (12) 128.

[442] Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework.

2654. As a minimum Míla shall publish the following key performance indicators as part of key performance assessment.

- Delivery of orders.
  a. Number of orders delivered.
  b. Proportion of orders rejected after having been accepted in the ordering system.

- Delivery of products/services.
  a. Average delivery time.
  b. Proportion of deliveries at or before time limit.
  c. Precision of delivery.

- Repair service.
  a. Proportion of faults in equipment for which company with significant market power is responsible, measured in lines per year.
  b. Average duration of repair of fault.
  c. Proportion of fault repairs at or before time limit.

- Service switching.
  a. Average time for switching from one wholesale service to another.
  b. Proportion of deliveries at or before time limit.
  c. Precision of delivery.

2655. ECOI shall monitor whether Míla collects and regularly publishes the above specified key performance indicators for internal transactions on the one hand external on the other. ECOI considers that the publication of key performance factors is appropriate as the means to monitor compliance with the non-discrimination obligation and with Míla's duty to make service level agreements. For this reason, and on the basis of minimum criteria in the BEREC reports, ECOI intends to maintain the obligation on Míla to gather and publish on its website figures for key performance indicators at monthly intervals.

2656. ECOI understands that the obligation in question for collection of data can be onerous for Míla. On the other hand, ECOI considers that measuring these criteria is important for the market and furthermore necessary for Míla in its own operations. Publishing the above specified information is important for competition on the relevant market and supports compliance with the demand for non-discrimination and that all parties can rely on this compliance. There is also the fact that this obligation already rests on Mila and has done so for many years. Now it applies on the other hand only in those areas where Mila is deemed to have significant market power.

2657. With respect to grounds for the necessity of maintaining the obligation in question on Mila, but now only in specific municipalities, reference is made to the discussion in section 8.2.1 here above.

8.3.3.6 Conclusion for non-discrimination on Míla on market 3a

2658. With the authority of Article 50 of the Electronic Communications Act, ECOI maintains the obligation on Mila to respect non-discrimination vis-à-vis all electronic communications companies that purchase local access on a fixed line, regardless of whether it is a copper or fibre network. All purchasers of such service shall, having taken circumstances into account, enjoy the same terms, including prices. Equal quality of access shall furthermore be provided to all Mila customers. The obligations shall furthermore apply to access to ducts and conduits, facility lease and advertisements on fibre deployment. The obligation for non-discrimination that ECOI maintains on Mila is what is called Equivalence of Input (EoI) where the company is obliged to offer the same prices, use the same service procedures/service systems, the same time limits and publish the same information about the service to all customers. Mila shall therefore provide access to all parties to those systems that are used within the company and that are necessary in connection with local access and access to ducts and conduits.

2659. Information on local access and service related to access and to access to ducts and conduits to lease of facilities shall be equally accessible to all electronic communications companies. Among other things, information shall be provided on the length of local loops in each instance where known, i.e. distance from the end user in question to the next connection point. If a local loop is measured for some reason, published data shall be updated with the results of that measurement.

2660. ECOI plans to maintain the obligation on Mila that all parties be informed about distribution, enlargement or other development of networks and Mila access services with the same notice and this notice shall not be shorter than 6 months.

2661. Mila shall take care that applications from all electronic communications companies for local access and related services and for access to ducts and conduits and facility lease are processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Míla is not authorised to make unreasonable demands on applicants as a condition for processing an application.

2662. ECOI maintains the obligation on Mila to make service level agreements (SLAs) with all purchasers of local access. Such agreements shall cover the various service issues that relate to non-discrimination with regards to local access and access to ducts and conduits and facility lease, including orders, delivery, service access, transfer of service and repairs.

2663. ECOI also maintains the obligation on Mila to issue a special declaration on Service Level Guarantees (SLGs) and to issue a declaration on quality guarantee for access to ducts and conduits and facility lease. Such SLGs shall cover all necessary service points that relate to non-discrimination with regards to local access and access to ducts and conduits and facility lease, including orders, delivery, service access, transfer of service and repairs. Such service level guarantees shall among other things prescribe specific fines which Míla must pay to its

counterparties should the service level guarantee not to be honoured. Mila shall inform interested electronic communications companies about the content of the service level guarantee.

2664. Furthermore, ECOI maintains the obligation on Mila that the company gather and regularly publish specific key performance indicators, including elements that relate to processing of orders, delivery of service, maintenance services and service switching - for internal transactions on the one hand external on the other. Mila shall publish the information in question on a monthly basis.

2665. The information gained by Mila from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see Article 42 of the Electronic Communications Act.

2666. ECOI believes that the demand for non-discrimination is both reasonable and normal. There is no indication that it creates significant costs or inconvenience for significant market power operators, given the advantages that the obligation brings to competition. ECOI therefore considers it necessary to strengthen competition on the market for local access, including access to ducts and conduits and facility lease, and on downstream markets, by imposing obligations on non-discrimination which cover at least the above specified aspects.

8.3.4 Obligation for price control

8.3.4.1 In general, on obligation for price control

2667. When paragraph 1 of Article 52 of the Electronic Communications Act no. 70/2022, see paragraph 1 of Article 38 of the regulation on market analysis in the field of electronic communications, it states that when market analysis indicates that lack of effective competition results in a company with significant market power being able to maintain excessively high charges, or can exercise market squeeze to the detriment of end users, FST may impose obligations on electronic communications companies with respect to cost recovery and price control, such as cost-oriented tariffs and an obligation for cost accounting for specific types of interconnection or access.

2668. In paragraph 2 of the above specified Article 52 of the Electronic Communications Act, it states that decisions pursuant to this provision, account shall be taken of the need to promote competition and the long-term end-users interests related to the deployment of next- generation networks, in particular of very high capacity networks . Investment should be both taken into account and encouraged. Allowance shall be made for reasonable profitability from investments, having taken risk into account. Benefits from predictability and stable wholesale prices shall furthermore be taken into account.

2669. In paragraph 4 of Article 52 of the Electronic Communications Act, it states that mechanism for cost recovery and pricing methodology shall promote the deployment of new and more enhanced networks, efficiency and sustainability of competition and shall maximise sustainable end-user benefits. In this respect, it is authorised to take into account the price on offer on comparable competition markets. In paragraph 2 of Article 38 of the above

specified regulation, provisions in paragraphs 2 and 4 of Article 52 of the Electronic Communications Act are further elaborated, where it states:

> "In decisions pursuant to this provision, a method shall be chosen for cost recovery or a pricing methodology that is best suited in each individual instance, and needs shall be taken into account that support efficiency, active competition and those long-term interests of end users that are inherent in deployment of new electronic communications networks, particularly very high capacity networks. Investment shall be both taken into account and encouraged. It is authorised to take into account the price on offer on comparable competition markets. Allowance shall be made for reasonable profitability from investments, including salaries and building costs having taken risk into account. If necessary, correction should be made to the value of investments in order to reflect current assessment of assets and efficiency in operation. There can particularly be a risk in connection with new access networks, that support products with uncertain demand at the time of investment. Economies from predictability and stable wholesale prices shall furthermore be taken into account, for the benefit of all operators that endeavour to introduce new and improved electronic communications networks.

2670. In paragraph 5 of the above specified Article 52 of the Electronic Communications Act, see paragraph 4 of Article 38 of the above specified regulation, it states that the burden of proof for charges being based on real costs, including a fair profit margin for investments, rests on the company in question. ECOI can demand full grounds from a company for its prices and can demand that price be corrected where applicable. The Authority can furthermore require an electronic communications company to prepare a cost model for calculation of prices. When calculating costs, ECOI can use as a reference the operation of analogous service that is considered efficiently run and may use cost analysis methodologies that are independent of methodologies employed by the electronic communications undertaking.

2671. In paragraph 6 of the above specified Article 52 of the Electronic Communications Act, see paragraph 5 of Article 38 of the above specified regulation, it states that if an obligation constitutes building a cost accounting system, open access shall be ensured to a description of the cost accounting system which shows at least the main cost categories and the rules used when dividing costs. An independent and competent party shall verify that the rules of the cost accounting system are complied with and shall publish an annual declaration on whether the rules are followed.

2672. In paragraph 3 of the above specified Article 52 of the Electronic Communications Act, see paragraph 3 of Article 38 of the above specified regulation, it states that consideration shall be given to whether it is possible to avoid imposing obligations pursuant to this provision if competitive pressure is already in place and where obligations on transparency, non-discrimination, separation of accountancy and access, particularly any kind of economic replicability test applied pursuant to Article 50 of the Electronic Communications Act, ensure efficient access without discrimination.

2673. In those areas where Mila is deemed to have significant market power, Mila can have the possibility and incentive to demand excessively high prices. This particularly applies in those markets where there is little or no competitive pressure in place and where consumers

have little opportunity to use comparable electronic communications service from other network operators.

8.3.4.2 Selection of methods when deciding wholesale price

2674. In Article 59 of the Electronic Communications Act, which deals with wholesale-only companies, it is specified that if ECOI comes to the conclusion that a company that has significant market power fulfils the conditions prescribed in paragraph 1 of Article 59, the Authority may only impose an obligation for access, see Article 48 of the Electronic Communications Act, and an obligation for non-discrimination, see Article 50 of the Electronic Communications Act as well as an obligation for fair and reasonable pricing.

2675. As stated here above in section 7.3.2, ECOI considers that Mila does not fulfil the above specified conditions of article 59 of the Electronic Communications Act to be deemed a wholesale-only company, though the company has been sold by Siminn. A change has on the other hand taken place in the nature of the company as it is no longer part of the Siminn Group.

2676. There are various possible methodologies for monitoring and for a decision on price for access. According to Article 52 of the Electronic Communications Act ECOI can demand that an electronic communications company make a cost model for the calculation of prices. As stated previously ECOI can take into account the operations of analogous service that is considered to be efficiently operated and can take into account tariffs in analogous competition markets and it may use cost analysis methodologies that are not related to methodologies employed by an electronic communications company. When choosing the methodology ECOI considers it proper to emphasise that the methodology can provide a conclusion that is normal and reasonable in both directions and can provide pricing that is not greatly in excess of real costs while at the same time assuring a normal return on investment.

2677. The main methodologies applied when deciding wholesale prices are the following:

- *Cost orientation*
  The prices of services are based on historical costs of the company in question (HCA)[443] or on assessed costs of an efficient network operator on the relevant market. Two methods have generally been used for cost analysis on the electronic communications market, i.e. based on the relevant company's bookkeeping where costs are allocated to the relevant service (FAC)[444] or on the analysis of long run incremental costs (LRIC)[445] on the basis of costs incurred in an efficiently operated electronic communications network (bottom-up model)[446].

[443] Historical Cost Accounting.
[444] All costs are allocated to the appropriate operations and services (Fully Allocated Costs: FAC).
[445] Long-run incremental cost: is the cost that is added or is saved when a specific service or operation is added or discontinued, on the assumption that all costs are variable.
[446] One speaks of a "bottom-up" LRIC model (BU-LRIC) in the case of a cost model for calculating the price of service on the basis of costs incurred in an efficiently electronic communications electronic communications network in the relevant electronic communications market.

- *Benchmarking*
  Prices on comparable competitive markets are compared and the price is decided on the basis of this comparison. Prices related to a specific sample of the comparison group.
- *Retail minus*
  The retail minus methodology is used to find the wholesale price by subtracting a specific proportion from the retail price. The difference subtracted from the retail price is for the costs that would otherwise have been borne by the company at retail level.
- *Price cap*
  The NRA decides the price cap for specific service that applies for a specific period of time. The price ceiling can change according to indexation and possibly in line a with requirement for economies. The price ceiling can be decided initially on the basis of cost according to calculations in a cost model or in another manner.
- *Fair and reasonable pricing*
  A price obligation where a company with significant market power decides its own prices for its own service with the reservation that the pricing is fair and reasonable. If ECOI comes to the conclusion, after a complaint from a party to the market, that the pricing cannot be considered fair and reasonable, ECOI is authorised to decide a price for the service.

2678. In addition to these methods specified here above, there do exist methods to ensure that a party with market dominance cannot apply margin squeeze to the detriment of end-users. It is possible to apply those methods in the case of a vertically integrated company. As Mila is no longer part of the Siminn Group, ECOI considers that there is little risk that Mila will be able to apply margin squeeze.

2679. When choosing the best methodology for deciding pricing for access, it is important to keep in mind on the one hand that the methodology is efficient and not too onerous for the relevant company and for ECOI, and on the other hand to create acceptable conditions for companies that may request wholesale access on the relevant market. One must furthermore ensure that competitors of Mila that operate on the relevant market and on the downstream wholesale market 3b can compete with Mila in a normal competitive environment.

2680. It can be assumed that obligation on cost oriented prices is an onerous obligation that should only be imposed if other methods are unsuccessful. In cost analysis, price is found based on cost information from a cost model and/or bookkeeping. To allocate costs to specific aspects of operations and services is a complicated and difficult task that can be carried out in various ways. ECOI can employ the BU-LRIC method for cost analysis in accordance with Regulation 555/2023 on bookkeeping and cost analysis in the operations of the electronic communications companies, which is a recognised methodology, among others, by the European Commission and by ESA. The methodology ensures transparency, and the regulators are not dependent on information from the bookkeeping of an electronic communications company.

8.3.4.3 Price control for Mila tariff for access to local loops on market 3a

2681. It is clear that there has been a significant change to the nature of Mila since the last market analysis, as the company no longer forms part of a group with Siminn. The ownership and management connections between the two companies have been severed. It has however been discussed here above that despite of this, the ECOI considers that significant characteristics of vertical integration can still be discerned between the companies, which must be deemed to be included in competition problems on the relevant markets 3a and 3b. Interests of the companies appear to be tightly bound with a long-term agreement between the companies, despite the fact that ownership and management connections have been severed. Siminn appears to be very dependent on Mila and can in reality not connect to networks of parties other than Mila without Mila being an intermediary, [...].

2682. In the light of the above ECOI considers it however appropriate to apply less stringent measures with respect to price control on the Mila tariff on the relevant market 3a than those which currently apply to the company, and it is the ECOI conclusion that the Mila tariff for local loops shall be fair and reasonable in those geographic markets where ECOI deems Mila to have significant market power. As stated in sections 8.3.4.4 and 8.3.4.5 here below, ECOI considers it nevertheless necessary and justifiable to impose obligations for cost oriented prices for access to facility in all those municipalities where Mila is deemed to have significant market power, and to Mila ducts and conduits in 23 of those 26 municipalities where Mila is deemed to have significant market power.

2683. There is no further elaboration specified in electronic communications legislation or in the memorandum to the law as to how an NRA shall decide whether a tariff is deemed fair and reasonable. Nor can one find further elaboration of this obligation in the Code.

2684. The concept of fair and reasonable pricing has been used in competition law and in other legal texts related to the electronic communications market and one can mention in this respect Act no. 125/2019 on measures for economic development of high-speed electronic communications networks[447] which represents the transposition of the EU Parliament and Council Directive (EU) 2014/61 from 15 May 2014.

2685. Fair and reasonable pricing is a broad concept which is to be interpreted in accordance with electronic communications legislation and with the main principles of competition law. ECOI will therefore take into account the general views and objectives of the Electronic Communications Act, and also the main principles of competition law when deciding whether the Mila tariff is deemed to be fair and reasonable.

2686. As was stated here above, methods for recovering costs or methods for pricing shall support efficiency and sustainability of competition and shall maximise benefits for end users. It is authorised to take into account the price on offer on comparable competition markets. When deciding a price, allowance shall be made for reasonable profitability from investments,

[447] In paragraph 2 of Article 7 of the that act it states: "Having received a written request an operator of networks shall accede to all fair and reasonable requests from electronic communications companies for access to its physical civil engineering, if conditions, including **price, are fair and reasonable**. "

having taken risk into account. Economies from predictability and stable wholesale prices shall also be taken into account.

2687. The current tariff obligations applied by ECOI mean that ECOI must endorse all tariff changes at Mila, subsequent to having conducted cost analysis. It is the ECOI assessment that as this obligation for price control should prescribe more freedom for a party with market dominance, the implementation will be such that the condition will not be set that would require ECOI to endorse the Mila tariff before it comes into force, but rather ECOI will examine this should it be deemed necessary to do so, for example if a complaint is received on alleged high pricing.

2688. Mila will therefore be authorised to decide the wholesale prices that the company collects on this market with the reservation that pricing is fair and reasonable, see however what has been previously stated with respect to an obligation on price control with regards to facility lease in all those municipalities where Mila is deemed to have significant market power and that access to ducts and conduits in 23 of those 26 municipalities where Mila is deemed to have significant market power. Then ECOI will not, as explained above, intervene in Mila pricing except in the event of a reasoned complaint from a party to the market or at his own initiative if special circumstances are deemed to justify this. If ECOI comes to the conclusion that the pricing could not be considered fair and reasonable, ECOI will decide price for the service in question which will then apply with respect to the product in question.

2689. In the decision on whether Mila price is fair and reasonable, ECOI will take into account the above specified considerations in the electronic communications legislation and also the main principles of competition law. ECOI can among other things take the following elements into account when deciding whether price is considered fair and reasonable:

1. Whether price for the service has changed abnormally with respect to general price development and that non-discrimination is respected.

2. Whether the price is in accordance with benchmarking with comparative market areas in this country where greater competitive pressure prevails. Average monthly prices for access to local loops will be taken into consideration, in those areas that are considered comparable, and the Authority is also authorised to take into account set-up charges if they vary.

3. Whether prices are in accordance with cost of providing the service on the relevant geographic market in an efficient manner, with the addition of reasonable return on investment having taken risk into account.

2690. On the other hand, ECOI will assess each complaint individually and the circumstances that prevail on the relevant market. ECOI considers it normal to first take into account points 1 and 2 before it is decided to embark on detailed and time-consuming analysis of costs of the relevant service. ECOI can decide that a maximum price shall be in accordance with benchmarking or limited to an increase in index while such cost analysis is conducted.

2691. As stated here above, it is specified in electronic communications legislation that the burden of proof for charges being based on real costs, rests on the company in question. ECOI can furthermore require an electronic communications company to prepare a cost model for

calculation of prices. ECOI considers it normal that if Mila asserts that price which is based on benchmarking or is decided on the basis of a rise in index, is lower than the cost to the company on the relevant market, then it is in Mila's hands to prove that this is the case, based on data from the company's bookkeeping. Mila shall then submit cost analysis in accordance with ECOI requirements. In those cases where Mila has acquired an electronic communications network by purchasing it or where state aid has been used in developing the network, Mila shall submit a purchase agreement which states purchase price and/or information on public support that was provided. ECOI can require that information from Mila bookkeeping is broken down by municipality, which means that the company is required to use such bookkeeping.

2692. In order that ECOI can monitor compliance of the obligation on fair and reasonable tariff, Mila shall notify ECOI about all tariff changes covered by the obligation.

8.3.4.4 Price control on Mila tariff for access to facility lease in areas where Mila is considered to have significant market power

2693. Despite prior conclusions that were presented in section 8.2.4.3 here above, ECOI considers it necessary to impose an obligation on Mila for cost oriented tariff for facility lease and access to related facilities in all those municipalities where Mila is considered to have significant market power. As stated in section 7.5.2, there are or can be various competition problems related to such facilities and it is therefore important in the opinion of ECOI that effective obligations rest on Mila with regard to such facilities, as Mila is a large party on the Icelandic electronic communications market with respect to such facilities for hosting and the largest when one considers facilities for connection to fixed line networks, and in addition to this such facilities at acceptable terms can be of key importance, as appropriate along with access to ducts and conduits, for deployment of fibre at locations where it is not already in place or to a small degree and as appropriate to promote infrastructure competition.

2694. It is correct to note in this connection that ECOI is not withdrawing obligations that were imposed on Míla with PTA Decision no. 21/2015 dated 12 August 2015, on designation of companies with significant market power and the imposition of obligations on the wholesale market for trunk line segments of leased lines (market 14/2004) and PTA Decision no. 8/2014 dated 6 May 2014 on designation of a company with significant market power and on the imposition of obligations on the wholesale market for terminating segments of leased lines, with respect to access to Mila facility lease on that market.

2695. In the light of the above, the tariff for lease of Mila facilities, such as in telephone exchanges and technical spaces, and related service shall be cost-oriented.

2696. ECOI is authorised, when calculating costs, to take into account comparable service considered to be operated in an efficient manner. Furthermore, ECOI is authorised to make benchmarking on the basis of cost analysis of tariffs in comparable competition markets such as in the EEA.

2697. The Míla cost analysis for lease of facilities shall be based on the following main criteria:

- The cost analysis shall cover the leasing of facilities in Mila buildings and masts.
- Price shall be calculated for access to buildings and masts. Mila shall divide investments in buildings and masts into categories depending on whether the investments belong to urban areas, rural areas or uninhabited areas.
- In addition to the above the Mila tariff shall contain as a minimum the price for varying lease units and shall cover all hosting services provided today to its own service departments or to other related parties or parties cooperating with Mila and to other electronic communications companies. Leasing on masts shall be divided into categories where each category is based on a specific size in square metres and position on the mast.
- The cost base shall be Mila historic costs (HCA) based on the preceding financial year in each instance.
- The methodology shall be based on allocating all costs to the service in question (FAC).
- The allocation of costs is based on separation of accountancy of hosting service, Mila asset bookkeeping and costs from the company's bookkeeping system where operational costs are entered by bookkeeping account. Assessment of investment shall be based on the book value of investments in Míla's asset bookkeeping, where the historical cost of investments is adjusted to price levels of the year being analysed in each instance.
- The opex of the hosting service shall be captured, including the share in indirect costs, i.e. management and IT, in accordance with separation of accountancy.
- Evaluation of operational assets lifetime shall reflect the value in use of assets. The criteria shall be that timber buildings have a 30-year lifetime, concrete buildings have a 50-year lifetime, building surveillance systems have a 6.67-year lifetime, ventilation systems have a 15-year lifetime, cooling equipment has a 10-year lifetime and diesel engines have a 13–25-year lifetime.
- The annuity depreciation method shall be used to calculate annual costs for operational assets.
- The cost of the total number of hosting in buildings and masts shall be calculated.
- The real rate of return shall be used, based on WACC real[448] from capital tied in assets used in connection with providing service where the risk premium reflects the risk related to operations on the relevant market.
- The average unit price for individual hosting units in lease of facilities shall be calculated as the average cost for specific regions on the basis of allocated opex and capex having taken into account varying services, the number of lease units and their size. It is authorised to use equivalents to decide unit costs.

2698. When deciding its tariff, Míla shall apply the above specified main criteria in its cost analysis for access to facilities and shall submit to the ECOI for scrutiny and endorsement. A

[448] ECOI will take the EU Guidelines into account (The WACC Notice) when calculating WACC.

new wholesale tariff for access to facilities does not come into force prior to endorsement by the ECOI, subsequent to national consultation and consultation with ESA in each instance.

2699. Mila shall also provide access to electricity where this is feasible, see section 8.3.2.6 here above. Pricing of this access shall be cost-oriented where cost is allocated to the relevant service (FAC). Reference is made to ECOI Decision no. 9/2022 in this connection. In case procedure for this case, a cost model was decided which was based on replacement cost of equipment where operational costs were based among other things on the cost of Mila's purchase of electricity from utility companies. When utility companies increase their tariffs, Mila is authorised to increase its tariff according to the cost model that has been agreed with the decision.

2700. With respect to grounds for the necessity of maintaining the obligation in question on Mila, but now only in specific municipalities, reference is made to the discussion in section 8.2.1 here above.

8.3.4.5 Price control of Mila tariff for access to ducts and conduits in 23 of those 26 municipalities where Mila is considered to have significant market power

2701. Despite prior conclusions that were presented in section 8.3.4.3 here above, ECOI considers it necessary to impose an obligation on Mila for cost control for access to Mila ducts and conduits in 23 of those 26 municipalities where Mila is considered to have significant market power. These are all the municipalities listed in section 8.1 here above with the exception of the municipalities Fjallabyggð, Norðurþing and Rangárþing eystra. In these 3 municipalities, the obligation for fair and reasonable prices applies to access to ducts and conduits.

2702. The reason for a less stringent obligation being imposed on Mila for access to ducts and conduits in the above specified 3 municipalities is that in those locations, parallel coverage of fixed line networks is significantly higher than in the other 23 municipalities, i.e. between 40-60%. This means that the need for such a more burdensome tariff obligation is not as urgent in those municipalities. It shall however be mentioned that an obligation for access, obligation for non-discrimination and obligation for fair and reasonable pricing with respect to such access does apply in these municipalities with respect to access to Mila ducts and conduits.

2703. In the case of the Czech Republic from 2018[449], the EU Commission raised objections to the plans of the Czech NRA (CTÚ) to refrain from imposing an obligation for cost-oriented price for access to CETIN ducts and conduits, a company considered to have significant market power on markets 3a and 3b in that country. CTÚ maintained that this would be in excess of proportionality and not justifiable subsequent to the transposition in law of the Directive 2014/61/EU (BCRD) in that country, which prescribes on fair and reasonable pricing for physical infrastructure such as ducts and conduits. The Commission considered it important that an obligation for cost analysed prices continued to be in force for access to CETIN ducts and conduits despite the minimum harmonisation stated in the above specified BCRD directive on fair and reasonable pricing. Despite the above specified objections, the Commission did however not exercise its veto but required that CTÚ closely monitor the

[449] See EU Commission Opinion dated 27 April 2018 C (2018) 2733 final, Cases CZ/2018/2067-2069.

implementation of the BCRD directive. It was the conclusion that it would not be possible to ensure access to CETIN ducts and conduits in an appropriate, timely and effective manner by applying the pricing obligation of the directive, and that CTU was obliged to impose an obligation for cost-oriented tariff on the company, even before the expected period of validity of the analysis ended.[450]

2704. In the opinion of ECOI, the above EU Commission opinion in the Czech case shows that it is important to prescribe price control for access to such infrastructure in order to support increased fibre deployment and as appropriate infrastructure competition, particularly where there is little or no parallel coverage of fixed line networks in place. As stated in section 7.5.2 here above, the price for access to Mila ducts and conduits has been the largest competition problem with respect to such access in this country, which as previously stated have been little used as a result of this. In the opinion of ECOI, it is important to maintain such an obligation on Mila in the 23 municipalities of those 26 municipalities where Mila has significant market power, and ECOI is now working on a decision on tariff for such access.

2705. In the light of the above, ECOI maintains an obligation for price control for access to Mila ducts and conduits in the above specified 23 municipalities.

2706. As stated here above, Mila is obliged to provide access to the company's ducts and conduits that are not fully utilised. The cost of such access has not been calculated in this

[450] On page 8 in the above specified Explanatory Note from the EU Commission it states among other things: "In this respect, the Commission points out that recital 12 of the Directive sets out that, in light of the lex specialis principle, where more specific regulatory measures in conformity with EU law apply, these should prevail over minimum rights and obligations provided for in this Directive. At present, the incumbent operator is under an obligation to provide cost-oriented access to its civil engineering infrastructure, including access to ducts. In the present measure, CTÚ this obligation, as it considers – under a modified greenfield approach – that non-sector specific legislation sufficiently addresses the identified market failures on the Czech retail broadband access market."
It then states: "In line with recital 12 of Directive 2014/61/EU, the Commission considers that CTÚ should maintain the cost orientation obligation imposed on the significant market power operator even after transposition of the Directive into national law. In this respect, CTÚ has to analyse if a general obligation to apply reasonable prices (…), subject to dispute resolution, is sufficient to solve the competitive problems identified on the market. If this is not the case, as provided by Article 8 (4) of the Access Directive, NRAs have to impose regulatory obligations which are based on the nature of the problem identified, proportionate and justified in light of the objectives laid down in Article 8 of the Framework Directive. In fact, a non-imposition of a cost-oriented duct access will make it less likely that the market failures identified by CTÚ will be redressed in a timely and effective manner and that the objectives of Article 8 of the Framework Directive are attained."
It continues to say: "First, it should be underlined that application of cost orientation of prices subject to a dispute settlement may not be appropriate in an significant market power scenario, where there are competitive problems identified, as it would unnecessarily prolong access to the passive infrastructure of the significant market power operator. Second, Article 3 (5) of Directive 2014/61/EU only imposes an obligation to provide access on "fair and reasonable conditions, including prices where appropriate" alongside a requirement, applicable only to the electronic communications sector, for the NRA to ensure that "the access provider has a fair opportunity to recover its costs and shall take into account the impact of the requested access on the business plan of the access provider, including the investments made by the network operator to whom the access is requested." These obligations are of a "symmetric nature" and should be enforced vis-á-vis all electronic communications providers, not only significant market power operators. Recitals 11 and 12 of Directive 2014/61/EU specify that these are indeed minimum standards regarding rights and obligations. It is typically insufficient to subject an operator that has significant market power, and which can thus act independently of its customers and consumers, to the same sets of minimum standards that apply to all operators." (ECOI emphasis edit)

country, as there has not been much demand for such access in the past years, or as access times have been unacceptable. The situation now has changed in this respect, and ECOI is processing a cost analysis from Mila for access to ducts and conduits and is considering a decision on such a tariff on the basis of benchmarking.

2707. In the EU Commission Recommendation dated 11 September 2013 on the implementation of harmonised non-discrimination obligations and cost analysis methodologies in order to increase competition and strengthen investments in the next generation of access networks (NGA)[451] the manner in which costs for reusable civil engineering assets are calculated, is prescribed[452] in Articles 34-36 of the Recommendations[453]and ducts and conduits are categorised under such assets. There it is stated among other things that a decision on costs shall be based on book price of assets less accrued depreciation and fully depreciated assets that are still in operation should therefore not be included in the cost base. It is also stated there that if data are not sufficiently reliable as a basis for calculation, this price shall be decided on the basis of a benchmark.

2708. ECOI will follow these guidelines when deciding the tariff for access to ducts and conduits. If there is not sufficient information to decide the price on the basis of historical costs, ECOI can conduct benchmarking with all states that use similar criteria as a basis, as described here above.

2709. With respect to more precise grounds for the necessity of maintaining the obligation for cost analyses prices with respect to access to ducts and conduits being maintained on Mila in 23 municipalities, reference is made to the discussion in section 8.2.1 here above.

8.3.4.6 Conclusion on price control on Mila tariffs on market 3a

2710. As has been stated previously, ECOI considers that Mila has the possibility and the incentive to demand higher prices in those areas where Mila is deemed to have significant market power. This particularly applies in those markets where there is little or no

[451] Commission Recommendations of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment.

[452] The Recommendations contain the following definition: 'Reusable civil engineering assets' are those legacy civil engineering assets that are used for the copper network and can be reused to accommodate an NGA network."

[453] "34.# NRAs should value reusable legacy civil engineering assets and their corresponding RAB on the basis of the indexation method. Specifically, NRAs should set the RAB for this type of assets at the regulatory accounting value net of the accumulated depreciation at the time of calculation, indexed by an appropriate price index, such as the retail price index. NRAs should examine the accounts of the significant market power operator where available in order to determine whether they are sufficiently reliable as a basis to reconstruct the regulatory accounting value. They should otherwise conduct a valuation on the basis of a benchmark of best practices in comparable Member States. NRAs should not include reusable legacy civil engineering assets that are fully depreciated but still in use."

35. When applying the method for asset valuation set out in point 34, NRAs should lock in the RAB corresponding to the reusable legacy civil engineering assets and then roll it forward from one regulatory period to the next.

36. NRAs should set the lifetime of the civil engineering assets at a duration corresponding to the expected period of time during which the asset is useful and to the demand profile. This is normally not less than 40 years in the case of ducts."

competitive pressure in place and where consumers have little opportunity to use comparable electronic communications service from other network operators.

2711. In the light of the severance that took place in the ownership ties between Mila and Siminn, ECOI considers it on the other hand appropriate to apply less stringent measures with respect to price control on the Mila tariff on the relevant market 3a than those which currently apply to the company with respect to the copper network, and it is the ECOI conclusion that the Mila tariff for local loops shall be fair and reasonable in those geographic markets where ECOI deems Mila to have significant market power. Mila will therefore be authorised to decide the wholesale prices that the company collects on this market with the reservation that the pricing is fair and reasonable. Then ECOI will not intervene in Mila pricing except in the event of a reasoned complaint from a party to the market or at ECOI's own initiative if special circumstances are deemed to justify this. If ECOI comes to the conclusion that the pricing could not be considered fair and reasonable, ECOI will decide price for the service in question which will then apply with respect to the product in question. In order that ECOI can monitor compliance of the obligation for fair and reasonable tariff, Mila shall notify ECOI about all tariff changes covered by the obligation.

2712. Despite the above, ECOI considers it necessary to impose an obligation on Mila for cost oriented tariff for facility lease and access to related facilities in all those municipalities where Mila is considered to have significant market power. As stated in section 7.5.2, there are or can be various competition problems related to such facilities and it is therefore important in the opinion of ECOI that effective obligations rest on Mila with regard to such facilities, and in addition to this such facilities at acceptable terms can be of key importance, as appropriate along with access to ducts and conduits, for deployment of fibre at locations where it is not already in place or to a small degree and as appropriate to promote infrastructure competition.

2713. ECOI also considers it necessary to impose an obligation for price control on Mila with respect to access to Mila ducts and conduits in 23 of those 26 municipalities where the company is considered to have significant market power. These are all the municipalities listed in section 8.1 here above with the exception of the municipalities Fjallabyggð, Norðurþing and Rangárþing eystra. In these 3 municipalities, the obligation for fair and reasonable prices applies to access to ducts and conduits.

9 Imposition of obligations on Tengir on market 3a

9.1 In general, on designating electronic communications companies with significant market power on specific geographic markets

2714. In the following 8 municipalities, ECOI considers that Tengir has significant market power:

- Akureyrarbær
- Dalvíkurbyggð
- Eyjafjarðarsveit
- Grýtubakkahreppur
- Hörgársveit
- Svalbarðsstrandarhreppur
- Vopnafjarðarhreppur
- Þingeyjarsveit

2715. In the above specifies specified 8 municipalities, obligations have been in force on market 3a in prior analyses. The obligations that have been in force on Mila are now withdrawn, which will come into force 15 days after the date of this decision.

9.2 Assessment of necessity and grounds for imposition of obligations on Tengir on market 3a

2716. Is clear from paragraph 2 of Article 1 of regulation no. 556/2023 on market analysis in the field of electronic communications, that the purpose of market to show whether effective competition prevails on electronic communications markets and to decide on applying measures if competition is not effective, for the purpose of enhancing consumer interests. When elaborating obligations, one must furthermore take into consideration, where effective competition is not in place, whether deployment of high-capacity networks on commercial terms is inadequate. In paragraph 4 of the provision, it states that competition shall be strengthened in electronic communications with economic investments in new and existing electronic communications infrastructure and as appropriate by imposing obligations where they are needed, particularly at wholesale level, for the purpose of achieving effective competition on retail electronic communications markets.

2717. When one has defined the relevant product or service market, geographic markets, evaluation of competitive conditions shall be conducted on relevant markets and as appropriate having designated an electronic communications company as having significant market power on the market, the next step is to describe competitive problems on the relevant market. One must then identify whether the relevant electronic communications company that has been designated as having significant market power, fulfils legal conditions to be deemed a wholesale-only company pursuant to Article 59 of the Electronic Communications Act. All this has been assessed here above and the conclusion of the latter element was that Tengir does not fulfil the above specified legal conditions. For this reason,

ECOI has more measures at its disposal to tackle identified competition problems than is the case where a company has been designated a wholesale-only company.

2718. Having completed all of the above, ECOI must elaborate obligations on the relevant company for the purpose of facilitating competition on the related retail market, for the benefit of consumers. In paragraph 1 of Article 4 of the regulation it states that the purpose of obligations is to create an advantage for consumers with respect to price, quality, choice and access to high-capacity networks, by supporting active and sustainable competition on retail electronic communications markets and the deployment of high-capacity networks on commercial grounds where possible. ECOI is required to assess whether it is justifiable to impose obligations on the relevant market under specific conditions. In paragraph 2 it states that when elaborating obligations on the basis of market analysis, one shall take care to avoid that they do not thwart investment incentives or that new electronic communications networks and service inhibit competition. One must support sustainable investments in high-capacity networks, while at the same time protecting competition - as bottlenecks and access barriers have in many instances existed at the infrastructure level. In accordance with the above, obligations must support foreseeability and accordance in investments in high-capacity networks.

2719. In the above specified documents from the EU Commission and BEREC on obligations, which were taken into account in the new electronic communications legislation in this country from 2022, emphasis is among other things placed on supporting competition with the development of electronic communications infrastructure and networks where this is considered feasible. In such instances the imposed obligations should support such development. Where competition in the form of electronic communications networks is not considered feasible, because of non-transitory economies of scale and scope of the incumbent in a specific area, or because of other access barriers, adequate access to electronic communications networks and equipment at wholesale level must be assured in order to encourage service competition on existing networks, while at the same time guaranteeing adequate recompense for access to the above specified electronic communications networks, thus encouraging further investment, renewal and maintenance of these networks. For the long-term, service-based competition that has its foundation in steered access to a cost-analysed price can be a tool for generating competition in the regeneration of electronic communications networks. This refers to what is called the investment ladder the objective of which is to create conditions that make it possible for new or smaller operators to build up their electronic communications networks in incremental steps. Such views are reflected in paragraph 5 of Article 30 of the above specified regulation on market analysis.

2720. In selecting the obligations that are best fitted to promote competition in a given market, or on a specific geographic part of the market, it is often beneficial to assess the position that would exist if obligations were not imposed on companies with significant market power, and whether it would be sufficient to use competition legislation alone to guarantee competition.

2721. In accordance with paragraph 4 of Article 30 of the regulation no. 556/2023 on market analysis in the field of electronic communications, which contains further elaboration of the

provisions of paragraph 4 of Article 46 of the Electronic Communications Act no. 70/2022, imposed obligations on electronic communications companies shall be:

a) In accordance with the nature of the problem specified in market analysis and be designed to resolve it;

b) Transparent, justifiable and reasoned;

c) In accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA;

d) Justifiable in the light of the objectives of the Electronic Communications Act, i.e. to ensure accessible, efficient, economic, effective and secure electronic communications in this country, and also to increase protection and range of choice for consumers, to support effective competition, effective investments and innovation on the electronic communications market:

e) Proportional and take into account, where possible, costs and advantages, and they may not go further than necessary to achieve intended results.

2722. In Article 29 of the regulation, it is among other things stated that obligations need to be necessary for the purpose of solving specific competition problems. ECOI needs among other things to assess effectiveness and as appropriate to conduct cost and benefit analysis, having in mind the capability of a specific obligation to react to an identified competition problem. Furthermore, whether one should provide specific incentives with the obligations in question.

2723. There are thus many considerations to keep in mind when forming and elaborating obligations. Obligations need to be at once necessary, justifiable, transparent, supported by arguments, in accordance with the nature of the defined competition problem, also to be designed to resolve this in accordance with those objectives that they are intended to achieve (i.e. to strengthen competition, support deployment of high-capacity networks, and create benefits for consumers), support Investments in high-capacity networks and to be in accordance with proportionality. When assessing proportionality, it may be necessary to evaluate the effectiveness of the obligations in question on the basis of cost and gain. In all of these evaluations it is appropriate to endeavour to assess what is likely to happen if the obligation in question (or all of them) are not imposed.

2724. In accordance with the principle of proportionality it is normal to impose those obligations on Tengir that are elaborated in section 9.3 and in its relevant subsections later in this document. As previously stated, ECOI must choose the method that causes least disruption, for the purpose of dealing with the identified problem, see paragraph 2 of Article 46 of the Electronic Communications Act. In the opinion of ECOI, the obligations imposed on Mila are conducive to achieving the objectives of the Electronic Communications Act no. 70/2022 for effective competition and economic electronic communications and furthermore to support further deployment of fibre networks in this country, and to create advantages for consumers. In section 7.5.2 and 7.5.3 here above, a large number of potential and existing competition problems on markets 3a and 3b have been described. In order to tackle the

problems identified there, ECOI shall impose obligations on companies with significant market power pursuant to Articles 47-52, 55 and 59 of the Electronic Communications Act, where appropriate.

2725. The provisions of Article 47 prescribe on access to civil engineering, Article 48 on access to networks and service, Article 49 on transparency, Article 50 on non-discrimination, Article 51 on separation of accountancy, Article 52 on price control, Article 55 on new high-performance high-speed networks and Article 59 on wholesale-only companies. In paragraph 2 of Article 59 it states that if ECOI comes the conclusion that the provisions of paragraph 1 of Article 59 are fulfilled, the Authority can only impose on such a company an access obligation pursuant to Article 48 of the act and a non-discrimination obligation pursuant to Article 50 of the act and on fair and reasonable pricing, if this is considered justifiable on the basis of market analysis.

2726. In this chapter it will be argued why ECOI considers it necessary to impose various obligations on Tengir in the municipalities in question and that they are in accordance with the views expressed in the above specified paragraph 4 of Article 30 of the regulation. Further grounds and discussion can be found in the relevant subsections to section 9.3.

2727. In the ECOI examination of the relevant market the Authority has come to the conclusion that no other measures can be found that could be as effective in solving the competition problems that exist on the market and that relate to Tengir in those municipalities where the company is considered to have significant market power on market 3a. ECOI furthermore considers that the obligations are in accordance with proportionality.

2728. In the light of the potential and real competition problems that can occur and of the strong Tengir position on the relevant market in the eight municipalities where the company is deemed to enjoy significant market power, ECOI considers it necessary to impose obligations on the company for access, non-discrimination, and price control in the form of fair and reasonable tariff.

2729. When defining scope of obligations on TT, ECOI takes into account the general size and strength of the company, and also in comparison with Mila which competes with Tengir on those markets where Tengir is designated as having significant market power on market 3a. These factors have a significant impact on the ability of companies to invest and on the economies of scale and scope that the companies enjoy. If one examines table 6.1 and 6.2 and section 6.1.4 here above, it can be seen that there is a very significant difference between the size of Tengir and Mila, for example when one looks at turnover and assets. In addition to this, Mila has significant dominance when one considers technical capability and experience of operating on an electronic communications market, and also with respect to access to capital for investment. Although Tengir enjoys significant and increasing market share in these areas, there is competition from Mila, particularly in the City of Akureyri, and Mila furthermore enjoys countervailing buying power vis-à-vis Tengir, as Mila is much larger than Tengir on market 3b in these areas. The strong Siminn position in the Tengir territory increases the strength in the light of the agreement between Mila and Siminn. Tengir, however, seems to benefit from being a local operator in its area of operation and it is possible that consumers prefer to do business with a local operator, Tengir's utilisation of its fibre local loops is for example considerably higher than in Míla's fibre network. Both Mila and Tengir operate

mostly as wholesale companies on market 3a and 3b, though they do not fulfil the conditions of Article 59 to be deemed wholesale-only companies and ECOI takes this into account when deciding obligations on the companies.

2730. In the light of this varying status of the companies, ECOI considers there not to be a need to impose all of the same obligations on Tengir that were imposed on Mila where Mila has a dominant market position. ECOI considers that there is no need to impose a detailed obligation for cost control on Tengir in the form of cost analyses prices for Tengir products on this market, and it would in reality not be in accordance with proportionality to impose such obligations on TT. ECOI considers that the obligation for fair and reasonable tariff is adequate as it is possible to monitor whether the company's prices are fair and reasonable as is described in more detail in section 9.3.4 here below, among other things with benchmarking with current prices in the market. It is clearly less problematic to maintain obligations like this on Mila, which has conducted such cost analysis before, than to impose them on a new party.

2731. ECOI considers an obligation for access to hosting and sharing of related facilities to be necessary, see discussion and reasoning in section 9.3.2.3 here below, and in the opinion of FST, Article 48 of the Electronic Communications Act provides authority to impose such access obligations on electronic communications companies with significant market power. ECOI imposes the obligation on Tengir to provide local access to its fibre network on the relevant market in those areas where Tengir is considered to have significant market power.

2732. ECOI considers that the above specified access obligation regarding hosting and sharing of related facilities and the duty to notify obligation for fibre civil works to be furthermore justifiable, to support necessary transparency, to be being reasoned, in accordance with the nature of identified competition problems, being designed to resolve them, in accordance with those objectives that the obligations are intended to achieve, to support increased investment and competition in high-capacity networks, and to be not in excess of proportionality. These are obligations that are particularly important to support investments in fibre development and as applicable infrastructure competition, where such is considered financially realistic, in those areas where Tengir has significant market power on market 3a. These are areas in the country where Tengir has a dominant position with regards to market share, and in addition to this, deployment of parallel fibre coverage is at relatively early stage of development in most of them. If this obligation is not imposed on Tengir in the areas in question, along with the obligation for non-discrimination and obligation for fair and reasonable pricing, it is the opinion of ECOI that competitive conditions at those locations will not improve during the lifetime of the analysis on the market in question.

2733. In addition to the above the above specified access obligations, ECOI considers it necessary to impose an access obligation on Tengir in the relevant areas for access to fibre local loops and access to other vital facilities. With respect to further arguments for this reference is made to sections 9.3.2.2 and 9.3.2.4. ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve and that they are not in excess of proportionality. ECOI considers the obligations particularly necessary for the purpose of supporting competition in provision of bitstream service (market 3b) and service competition among retailers in the areas in question, as Tengir is by far the largest network

operator in the relevant areas. ECOI considers that obligations do not prevent investments in high-capacity networks in the relevant areas, but where infrastructure competition develops over time, it would be possible to withdraw such access obligations.

2734. The obligation for wholesale access on the relevant wholesale markets is a prerequisite for competition to become active in related retail markets such as on the broadband market Internet and voice telephony market (VoIP) and for TV distribution (IPTV). It is not possible to solve the competition problems described here above in any other way than by imposing the obligation for access. Access barriers make it difficult for Tengir competitors and customers to develop extensive fibre networks in the relevant areas and it is thus a prerequisite for effective competition on downstream markets that they can receive access to the Tengir fibre networks in these areas.

2735. ECOI considers the obligation for access to be an insignificant burden on Tengir, but it is an essential prerequisite for effective competition on the downstream markets. It is in fact necessary for electronic communications companies to gain access to the Tengir local loop network in order to be able to offer their customers adequate services in the areas in question, variously bitstream access and/or retail service. The obligation is first and foremost to ensure that Tengir does not discriminate when making local loop agreements. ECOI does not consider it burdensome to serve all counterparties for local loops in an adequate manner, as Tengir has done this up to this point in time. Through a connection with the connected local loop network the companies gain better use of the electronic communications equipment in which they have invested.

2736. With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Tengir, in those areas where the company has significant market power. This is an equality of input obligation (EoI) and an obligation for equal access to information. ECOI considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as is further argued here below in sections 9.3.3.1-9.3.3.4.

2737. The non-discrimination obligation is somewhat simpler in the case of Mila where for example, obligations for service level agreements, quality assurance and publication of KPIs are not imposed. It should be noted that despite Tengir being deemed not to fulfil the legal conditions to be considered a wholesale-only company, the does not mean to say that ECOI imposes all the obligations prescribed in Articles 47–52, 55 and 59 of the Electronic Communications Act.

2738. As previously stated, one must take certain precautions when imposing obligations, for example the obligations are in accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA. ECOI points out that Tengir is a much smaller company than Mila and Mila does not have equivalent technical capacity or manpower to implement the above specified obligations. My illustration, man years at Tengir were just under 13 while they were 142 at Mila in 2022. While they were 100 and42@milain2022.ex therefore considers it to be inconsistent with proportionality to

impose an obligation for service level agreements, quality assurance and the publication of KPIs in the 8 municipalities where Tengir has significant market power. It should also be mentioned that Tengir is not previously vertically integrated company, nor have Tengir connections with other companies on the retail market been assessed so strong that one can detect the characteristics of vertical integration, and the above specified obligations generally aim to ensure that one electronic communications company is not favoured to a greater degree than another. Has an impact that competitive conditions are generally much worse in those areas where Mila has significant market power than in the areas where Tengir is in such a position. One can finally mention that Mila enjoys strong countervailing buying power reasonably TT, as Mila is in a stronger position than Tengir on market 3b, including on the Tengir fibre network.

2739. The obligation for non-discrimination with respect to access to the Tengir local loop network in wholesale, and to related facilities such as lease of facilities and access to ducts and conduits, are necessary for companies, whether on the relevant market or related markets, to be able to compete on a level playing field between themselves and with Tengir in the relevant areas. The obligation should mean that all electronic communications companies that purchase access to Tengir local loops receive comparable services and prices and in this way the competition problems related to possible discrimination will be solved. ECOI considers the obligation for non-discrimination to be not particularly burdensome, as Tengir appears to have followed work procedure that ensures this. The obligation should lead to all companies leasing access to local loops receiving comparable services and should be instrumental in resolving the competition possibilities problems described in Section 7.5.2 with respect to issues such as speed of reply, price quality etc., that can give Tengir an advantage on the relevant and downstream markets. The obligation thus prevents Tengir from being able to discriminate against parties on the relevant market in the areas in question.

2740. ECOI considers that if this non-discrimination obligation were not in place, then a negative competition situation in the relevant areas could become even worse on the relevant wholesale market.

2741. The obligation for fair and reasonable pricing will apply to the Tengir fibre networks in these areas. ECOI considers it necessary to impose this obligation on Tengir in the areas in question on the relevant market. ECOI furthermore considers the obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as will be further argued here below and in section 9.3.4. ECOI considers the obligation awful fulfils the requirement for proportionality, as Tengir will be authorised to decide those wholesale prices that the company collect on this market as before, but with the reservation that the pricing is fair and reasonable.

2742. In the opinion of ECOI, Tengir is a company with significant market power, which has the possibility and incentive to price higher than if effective competition prevailed in the company's marketing territories. These areas are characterised by less competitive pressure prevailing on the relevant market than in other more competitive areas. Retailers and thus consumers do not in this instance have as great an opportunity to make use of comparable

electronic communications service from other network operators, except over the Mila copper local loops, but even though ECOI considers there still to be substitutability between copper and fibre, copper local loops are on the way out during the lifetime of the analysis.

2743. The above specified obligation for fair and reasonable pricing should ensure that Tengir does not practice excessive pricing [454] in the areas in question, to the detriment of access seekers and thus consumers. For this reason, ECOI considers it necessary and justifiable to add such an obligation. It is not clear whether this obligation will be tested, but this will only happen should a complaint be received on excessively high pricing or under special circumstances at the initiative of ECOI, for example if a price increases significantly or develops significantly in excess of general price developments. It should not necessarily require intervention from ECOI for the price of providing a service to be taken into account when deciding the tariff, as account should rather be taken of general price development and/or benchmarking should ECOI become involved.

2744. It should be clear that the relevant obligation for fair and reasonable pricing on Tengir is important for parties to the market, as benefits from the obligation for bitstream operators and retailers and thus for consumers are substantial. The objective of the relevant obligation is to prevent potential excessive pricing in Tengir marketing territories where the company has significant market power and where there is little or even no effective competition.

9.3 Imposition of obligations on Tengir on market 3a

9.3.1 General

2745. ECOI imposes to a large extent, comparable obligations on Tengir on all of the 8 geographic markets and line are imposed on Mila where Mila is deemed to have significant market power, with the exception that ECOI considers it to be unnecessary to impose obligations on Tengir for cost-oriented tariff for facility lease and access to ducts and conduits. With respect to the price for such access, an obligation will nevertheless be imposed on Tengir for fair and reasonable pricing. The non-discrimination obligation is however somewhat simpler on Tengir, as the company does not need to make a service level agreement, to provide quality assurance or to publish key performance indicators (KPIs). ECOI also imposes an obligation on Tengir to provide access to the company's fibre local loops in these areas, unlike with Mila who in most instances can resolve this obligation by using VULA access or with Access Option 1 in bitstream. One could therefore say that the obligation goes further than the access obligation on Mila and Ljósleiðarinn.

9.3.2 Obligation to provide access

9.3.2.1 Evaluation of the need for Tengir to provide access to networks and service, ducts and conduits, hosting and related facilities

2746. As has been previously discussed in section 8.3.2.1 of paragraph 1 of Article 47 of the Electronic Communications Act, ECOI can impose obligations on electronic communications

[454] Excessive pricing is a measure of how much higher prices in comparison with the price that would have been achieved in free competition between the companies in question.

companies with significant market power to accede to justifiable requests for access and to use of buildings, including buildings or entry to buildings, cabling in buildings, antennae, towers and other structures if market analysis indicates that denial of access or the imposition of unreasonable conditions for access could hinder sustainable competition and could impinge on end users' interests.

2747. In this connection it should be noted that in section 7.5.2.3 here above, where there is discussion on competition problems on market 3a, the conclusion was reached that a company that has significant market power on a wholesale market can have a tendency to deny access to companies that are in competition with the company on downstream markets or possibly new competitors, access to wholesale service, for the purpose of preventing competition or making it at least more difficult for competitors in engage in competition. Such behaviour can be manifested in absolute denial of access or that access is provided at such unreasonable terms, including pricing, that is tantamount to denial. ECOI surmised that Tengir could have the opportunity and incentive in those areas where the company enjoys significant market power, to deny specific electronic communications companies access to market 3a, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b.

2748. According to the bill that became the Electronic Communications Act, Article 47 enables smaller electronic communications companies to deploy their own networks without needing to embark on special civil works. For example, access to ducts and conduits could be extremely useful in the development of new electronic communications networks, as this saves electronic communications companies the work of digging ditches and in addition to this it diminishes the inconvenience caused by repeated civil works. It is furthermore stated that emphasis is placed on examining this obligation before others in accordance with the objectives of the bill to support development of new high-capacity networks and to increase competition between networks.[455]

2749. The above means that ECOI considers it necessary to fulfil the objectives of the Electronic Communications Act, among other things to support fibre roll-out where it has not taken place and even to support the development of parallel fibre network coverage where this can prove economically feasible, to impose the obligation on Tengir to accede to justifiable requests for access to civil engineering, among other things to ducts and conduits on those geographic markets where the company has significant market power on market 3a. ECOI considers this obligation not excessive given its importance, but it must of course only apply in those areas where Tengir has significant market power.

2750. Pursuant to paragraphs 5 and 6 of Article 48 one shall first assess whether the above specified obligation for access to civil works pursuant to Article 47 of the Electronic Communications Act or another kind of access to wholesale procurements could suffice as a moderate measure to support competition and assure end users' interests, before an obligation for access to networks and service pursuant to Article 48 is imposed on a company with significant market power. With respect to assessment of whether an obligation for access to civil engineering could suffice as a moderate measure to support competition and

[455] Alþingistíðindi, 152 Parliament, Parliament document 666 – 461. case, on article 47.

could ensure the interests of end users, one must take into account that Article 47 of the Electronic Communications Act is the transposition of Article 72 of the Code. This is the above specified constitutes an innovation, it could prove useful to take into account the Commission Recommendation on the appropriate market from December 2020 and the working document in connection with the Recommendation, as the above specified Recommendation was updated after the Code came into force.

2751. The Recommendation discusses among other things that according to Article 72 of the Code, NRAs can impose an obligation for access to civil engineering as an independent measure on the relevant wholesale market and such an obligation should be considered before other access obligations are imposed.[456]

2752. In the working document that accompanied the above specified Recommendation, it states that when NRAs take into account whether the relevant market requires ex-anti-regulation one must take into account obligations that result from other regulation and the impact they have on the market. In the context of Article 72 of the Code, see Article 47 of the Electronic Communications Act, specific reference is made to obligations that result from the Broadband Cost Reduction Directive 2014/61/EU (hereafter "BCRD").[457] This directive was transposed into Icelandic law on 29 October 2019 with Act no. 125/2019 on measures for economic deployment of high-speed electronic communications networks and the law came into force on 1 January 2020. The object of the instrument is to support development of high-speed electronic communications networks by enabling companies to share civil engineering and in this manner, companies can develop networks at lower cost. The instrument instructs all network operators (not only electronic communications companies), to accede to all normal and fair requests for access to civil engineering and to information on them fair terms and conditions for fair recompense. One may only deny a request for access on the basis of objective, transparent and moderate reasons.

2753. Many European states have examined this and come to the conclusion that the directive this is not adequate on its own to ensure efficient access to ducts and conduits of electronic communications companies with significant market power and have also imposed, obligations for such access in their market analyses after the directive in question came into force.[458] One can in this context, note that in the DBA market analysis by in Denmark on the relevant market from 2017, ERST refrained from imposing such an obligation on TDC, which was designated as an electronic communications company with significant market power in that country. The EU Commission raised an objection to this.[459] In the case of the Czech

[456] Guidelines on relevant markets from 18 December 2020, paragraph 28.

[457] EU Commission working document with Recommendations on the relevant market, SWD (2020) 337 final, dated 18 December 2020, pages 652 and 63.

[458] There is further discussion on the Czech case in section 8.2.4.5, and reference is made to this. See also in this connection discussion at the bottom of page 63 and top of page 64 in the Commission working document. There it states among other things that Bulgaria is the only country that has deemed that obligations that result from BCRD, are adequate and the NRA has lifted an obligation for access to civil engineering. It should be noted that in Bulgaria, the W LA market is assessed as being fully competitive.

[459] See comments from the EU Commission in case C (2017) 4901 final. On page 9 there is a comment on the withdrawal of the access obligation: *„DBA proposes to withdraw the duct access obligation because it considers that the*

Republic from 2018, the EU Commission raised objections to the Czech NRA, CTÚ, for not imposing an obligation for cost analyses tariff in parallel with such an access obligation.[460]

2754. ECOI believes that the legislation in question from 2019 does not ensure, on its own, efficient and effective access to Tengir ducts and conduits as in Iceland, Act no. 125/2019 has never been tested with respect to existing civil engineering and for this reason it is not possible to conclude that obligations resulting from this legislation can replace a well elaborated obligation for access to civil engineering pursuant to Article 47 of the Electronic Communications Act and as appropriate an obligation for costs analysed prices for such access. ECOI also considers that this legislation is more effective in those instances where electronic communications companies request access to civil engineering of other parties than electronic communications companies, for example utility companies, than in such instances where electronic communications companies request access, for example to ducts and conduits from competitors on the electronic communications market. The willingness of a company to provide access is by the nature of things greater when the access seeker is not a competitor.

2755. It is also necessary to note that the BCRD directive in question and the legislation from 2019 only constituted minimum coordination in this connection. There is only a provision for access of an electronic communications company to minimum information from the operator of such infrastructure with regards to existing infrastructure. In requests from electronic communications companies it also has to be specified the area in which the electronic communications company in question plans to develop a high-speed network. So this is a kind of “ad hoc” provision.

2756. In paragraph 2 of Article 7 of the act from 2019, reference is made to the obligation of the operator of such infrastructure to accede to all reasonable requests for access to civil engineering on the basis of fair and normal terms and conditions, including price. Having the circumstances in mind, a number of elements could have an impact on the conditions for such access, for example additional costs resulting from maintenance and alterations, existing protection measures that need to be adopted to minimise negative impact on security and reliability of networks, an arrangement for damage liability in the event of any damage, use of public grants to build the civil engineering, including special terms and conditions tied to the grants or prescribed in national law in accordance with the rules of EEA law, the ability to deliver or provide civil engineering to fulfil obligations for providing public service, for limitations resulting from national provisions that relate to nature protection, public health and public safety or to fulfil the objectives of planning.

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transposition of Directive 2014/61/EU (covering access to physical infrastructure) will be sufficient. The Commission notes that the current regulatory obligations on access to ducts in Denmark do not include a price control obligation (only an obligation to provide access on reasonable terms). The Commission invites DBA to re-consider whether the lack of such an obligation gives consistent buy-or-build signals to alternative operators, given that cost-oriented duct prices are integrated in the price controls for other forms of regulated access to be imposed on the significant market power operator, and whether access on reasonable terms to be negotiated case by case,
without a requirement of a clear reference offer, will be sufficient to promote infrastructure competition, wherever economically efficient, through access to passive infrastructure."

[460] In section 8.2.4 there was further discussion on this case and reference is made to this.

2757. According to paragraph 3 of Article 7 of the act, the operator of such a construction is authorised to deny access to specific civil engineering for objective reasons. Material civil engineering can particularly be technically unsuitable because of special circumstances that relate to the civil engineering itself, such as because of lack of space are that time or because of future needs that are demonstrated in an adequate manner, for example by an investment plan or other data. Under particular circumstances, shared use of civil engineering can be a risk for security or public health, reliability and network security, including in the case of national civil engineering. It is also possible that the provision of service already in place is put at risk with the provision of access to the same civil engineering.

2758. It is also prescribed in paragraph 4 of Article 7 of the Act that denial shall be presented within two months from the day of receipt of a completed request. It is then possible to refer the denial to ECOI for resolution.

2759. From all of the above it is clear that the above specified legislation from 2019 does not suffice on its own to support the deployment of high-capacity networks in this country, which means that there has to be an obligation for access to ducts and conduits on Tengir in those areas where the company has significant market power. The above specified legislation has proven difficult in practice and ECOI has not received any cases for procedure in connection with the provisions of Article 7 but has heard comments from electronic communications companies that legislation is in fact unusable to achieve the objective for which it is intended. It is clear that an electronic communications company that receives such a request from its competitor can in various ways try to reject a request or delay the matter in such a manner that the interested company loses interest. The electronic communications market is fluid, and for this reason, electronic communications companies that are involved in development of electronic communications networks cannot wait for many months or even years for such a request to be resolved.

2760. In the working document, a number of issues are listed that NRAs can take into account, i.e. a commercial access offer, access that is obligatory pursuant to Article 61 of the Code, see Article 38 of Electronic Communications Act or planned conditional access to other wholesale procurements. It is then stated that in the light of market development, NRAs should take into account whether it was economically and technically feasible for operators to install or use civil engineering based on access to ducts and conduits in competition with a company with significant market power. [461]

2761. Here one should note that ECOI has not received information on the existence of offers for access to civil engineering that have been presented on commercial grounds and that have not been made because of obligations in force. Nor has ECOI imposed the obligation on Tengir to provide access to its civil engineering or network elements on the basis of Article 38 of the Electronic Communications Act. In addition to this there are no current plans to impose obligations on other wholesale procurements that tackle in an adequate manner identified competition problems with respect to access to ducts and conduits.

[461] EU Commission working document with Recommendations on the relevant market, SWD (2020) 337 final, dated 18 December 2020, page 65.

2762. It is clear that facilities and access to ducts and conduits can be important in areas where only one party operates electronic communications networks, or where the electronic communications networks of other parties reach a limited number within the area, in order to facilitate parallel coverage of another electronic communications network where this is economically feasible. All of the above means that ECOI considers that the issues listed in the Recommendation do not prevent that obligations for access to networks and service pursuant to Article 48 imposed on Tengir in those areas where the company enjoys significant market power on market 3a, at the same time as obligations are imposed on access to Mila civil engineering, pursuant to Article 47 of the Electronic Communications Act, and in fact, ECOI considers it important that the access obligation on Tengir on market 3a covers both.

2763. One must finally consider whether Article 47 of the Electronic Communications Act can suffice as a moderate measure to support competition and assure end users' interests In the opinion of ECOI, the obligation for access to civil engineering does not tackle all defined competition problems, and in Article 48 in the Electronic Communications Act it is stated that ECOI can prescribe that an electronic communications company with significant market power accede to justifiable requests for access to and use of specific network elements and related facilities if it is considered that denial of access or unreasonable terms and conditions, that have a similar impact, would inhibit the development of a sustainable competitive market at retail level and would not be in the interests of end users. As is stated in section 7.5.2.3, ECOI considers that Tengir could have the opportunity and incentive in those areas where the company enjoys significant market power, to deny specific electronic communications companies access to market 3a or as appropriate on market 3b, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b.

2764. All of the above means that ECOI considers that access to civil engineering pursuant to Article 47 of the Electronic Communications Act, see Article 33 of the regulation on market analysis, do not suffice to tackle identified competition problems on the relevant market vis-a-vis Tengir in those areas where the company is deemed to have significant market power. On the other hand, ECOI considers it important to impose such obligations on Tengir on the relevant market in those areas, alongside an obligation for access to networks and connected service on the relevant market, and also other obligations that will be prescribed here below, for the purpose of supporting fibre roll-out in the areas when it is not yet been rolled out or only to a certain degree, to promote infrastructure competition in those areas where this is financially feasible.

2765. ECOI also considers it justifiable with a view to the initial investment and risk entailed in the investment, that Tengir continue to provide such access in those areas where the company is deemed to have significant market power. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in the offer of electronic communications services in areas where Tengir has significant market power.

2766. ECOI imposes an obligation on Tengir to accede to all fair and normal requests from electronic communications companies for access to and use of civil engineering.

2767. A reasonable request for access to civil works is considered to be a request for a local loop that is not in use for another purpose on that day when new use is planned.

9.3.2.2 Access to fibre local loops

2768. Today, Tengir offers access to fibre in access networks with local loop with P2P topology, which means that the local loop is whole and uninterrupted from the technical space/node point to the place of use. For many years, Mila has leased such access to Tengir fibre local loops. Neither Ljósleiðarinn nor Mila offer such access today.

2769. The above specified access refers to the fibre being whole and continuous between the technical space/node point and end user, and it is impossible to connect equipment to it on the route in question This means in other words that access to fibre sub loops is in reality technically impossible. ECOI considers therefore there to be no need to impose an access obligation on Tengir for fibre sub loops between node points and a user.

2770. Service providers that wish to provide service through Tengir fibre local loops need to build their own data transfer system with the appropriate equipment and operations that this entails. This includes equipment such as a system centre, equipment in connected technical facility and user endpoint equipment.

2771. ECOI imposes the obligation on Tengir to provide local access to its fibre network on the relevant market in those areas where Tengir it is deemed to have significant market power. The company shall not withdraw access that has already been granted, unless the conditions prescribed in section 9.3.2.5 are fulfilled. ECOI considers it not to be as burdensome to impose such an obligation on Tengir and Mila and Ljósleiðarinn in those areas where the companies have significant market power on market 3a, where neither Mila nor Ljósleiðarinn offer access to dark fibre, except to a very small degree on the corporate market and in state-supported networks. ECOI considers it inappropriate, and in fact contrary to proportionality, to oblige companies with significant market power to offer a product that is not part of their product offer. In this connection, one can refer to the Danish analysis of the relevant wholesale markets from 2021-2022 which was described in section 5.1.10.7 here above.

2772. Should fair and normal requests for other types of local access to the Tengir fibre network be made, Tengir shall accede to such requests if the access is technically and economically feasible. Should Tengir deny such an access request, this shall be notified to ECOI with appropriate reasons and ECOI will decide on whether the access in question shall be granted.

2773. Those obligations that now rest on Tengir for access to the company's access systems shall not cease to apply even though Tengir changes the structure of its systems, except when agreement has been reached on the migration process and the party leasing the access is thus prepared to receive a new kind of access instead of the older one when the migration has taken place. Should such an agreement not be reached then Tengir shall inform parties to the market of all changes to the arrangements of local access that are likely to alter companies' competitiveness on the market with 2 years' notice. Exceptions may be made from the above period of notice on receipt of advance endorsement by ECOI. If a Tengir request for such an

exemption is considered normal and reasonable, ECOI will open consultation with stakeholders. If no objections are raised and stakeholders have access to substitute products, and do not suffer any unnecessary damage when migrating between systems, ECOI will endorse such an exemption.

9.3.2.3 Collocation or sharing, including access to ducts and conduits and notifications of planned civil works

2774. It can be very costly for new network operators on the local loop market to develop facilities necessary to be able to offer an adequate network. Such costs are in many instances sunk costs. In order to distribute such development costs between the companies in question the method is often used to share cost of civil works and laying of ducts.

2775. The EU Commission has also emphasised that parties to the market provide regulatory authorities with information on where it would be possible to utilise ducts, conduits and other structures for the distribution of next generation access networks (NGA). For this purpose the regulatory authorities shall make efforts to ensure that where the above specified facilities exist, they should be open to all.

2776. With respect to whether it is realistic to use adjacent access instead of the above specified access, such as with access to ducts and conduits, ECOI considers that the latter access is on its own not sufficient, as it has not been used much in this country at this point in time, but ECOI considers that it could be important to support fibre roll-out where this is not in place and as appropriate promote infrastructure competition where such is economically feasible. ECOI therefore considers it important that an access obligation on Tengir in those areas where the company is deemed to have significant market power, should cover local loops, access to ducts and conduits, facility lease and access to other vital facilities related to the above specified access options. In the opinion of ECOI it is quite possible for Tengir to provide such access given the capability available at the company.

2777. ECOI also considers it justifiable with a view to the initial investment and risk entailed in the investment, that Tengir continue to provide the above specified access in the area in question. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in the offer of electronic communications services in the area where Tengir has significant market power.

2778. ECOI also considers that other issues prescribed in paragraph 4 of Article 48 of the Electronic Communications Act, i.e. expected technical development, the need to ensure technical independence, any kind of IPR or offer of joint European service, do not have the impact that it is not considered proper to impose such access obligations on the relevant market.

2779. ECOI imposes an obligation on Tengir to accede to all normal requests from electronic communications companies for the above-specified access, along with access to related facilities and service in those areas where the company has significant market power on market 3a, on the basis of point g in paragraph 2 of Article 48 of the Electronic Communications Act.

2780. Should the situation arise that an electronic communications company request to install a new cable in a Tengir duct or conduit on the market now under discussion, and in those areas where realise deemed to have significant market power, which was not fully used, Tengir should accede to this request, given that it was normal and fair. Should a reasonable request to this effect be made by an interested network operator that is deemed normal and fair, then Tengir shall prepare a file, which contains information on the location and condition of the company's ducts and conduits. It shall show among other things, which ducts and conduits are free in part or in their entirety and can thus be used for such access. Tengir shall give ECOI and interested electronic communications companies access to the data in question.

2781. The above specified database shall be available no later than 3 months after a fair and reasonable request has been received from a network operator regarding such access in a specific area or areas. Such a request shall be limited to a clearly delineated area, e.g. municipality or village/town or district at which the interest of the network operators in question is directed in each instance.

2782. After having received the above specified documents with information on Tengir ducts and conduits, the network operator who is interested in utilising free space in the ducts and conduits shall submit an order for access within one month of the time that he took delivery of the data and he shall specify, as precisely as possible, the ducts or conduits for which access is requested. Tengir shall not commence work on its own deployment of optical fibres in the area in question, in which the network operator has shown interest subsequent to a request having been made that Tengir provide the above-specified information and until the notice of one month has passed that the network operator has to decide whether he will use access to them. During the period in question, the requested ducts or conduits in the area are therefore reserved for the interested network operator. The period in question can be shorter than 4 months, all depending on how quickly Tengir delivers the necessary information on those ducts and conduits that the request concerns, to the interested network operator. After an order has been made, Tengir is unauthorised to install cables or perform any work on the ducts and conduits covered by the order, that in any way would impair the network operator's requested access to those ducts and conduits.

2783. The obligation in question may however not prevent normal Tengir use of its infrastructure or inhibit Tengir fibre roll-out. If Tengir has formally notified about fibre roll-out in the area in question, with at least 3 months' notice, the priority in question for the access seeker does not apply. Tengir needs to specify precisely which addresses are involved and the timing of the civil works. Tengir is not authorised to notify about planned civil works with more than 12 months' notice in this connection. In order to prevent Tengir abuse of this authorisation for priority, ECOI can, having received a submission from a party interested in requesting access, evaluate whether Tengir deployment plans are realistic. ECOI can then among other things, request copies of agreements with contractors and financial plans for the civil works in question. Should ECOI deem that the plans for civil works in a specific area or areas are not realistic within the 12-month period, ECOI can decide that area or those areas, do not enjoy Tengir priority for civil works.

2784. To increase the effectiveness of the above specified obligation for access to ducts and conduits, and to support the deployment of fibre in areas where fibre is lacking, and is

appropriate to strengthen parallel coverage of fibre networks where this can be considered financially feasible, ECOI imposes the obligation on Tengir that the company shall publish a list of planned civil works with 3 months' notice in those areas where the company is deemed to have significant market power on the relevant market. This obligation covers both digging holes and ditches, but repairs or renewal of individual local loops are not covered by this obligation. The obligation is intended to cover overall development where no infrastructure is underground and to civil works and cable laying where infrastructure is in place and where conduits are being laid or fibre cable being pulled through them to a building and to other works related to development and roll-out of fibre networks Tengir is authorised to shorten the notice in the advertisement down to 2 months if Tengir lays additional conduits in all parts of the civil works in question, that another electronic communications company can use at a later date. In order that the obligation for sharing of civil works be useful for the purpose of enhancing deployment of fibre networks and for encouraging competition in infrastructure, the obligation does not apply in those areas where infrastructure is already in place, cable routes or ducts owned by an electronic communications company other than Tengir that can be used by such parties for deploying fibre in competition with Tengir.

2785. A Tengir advertisement on planned civil works and cable works must be sufficiently detailed for parties who plan development and/or deployment of networks to acquaint themselves with the actual scope of the works. Among other things, the advertisement shall contain information on whether this is the installation of new infrastructure or whether existing infrastructure owned by the company is to be used, and all ditches and holes that are planned shall be specified along with information on planned connections of fibres and whether local loops will be laid to individual buildings (and then what buildings).

2786. The obligation is imposed on Tengir to provide facilities in hosting space. A reasonable request for co-location is considered to be a request for free space in Tengir buildings and such a definition can also include a request that requires enlargement or rebuilding of the premises.

2787. In the opinion of ECOI, the obligation to offer sharing or co-location, as it is described here above, is fair and does not create a significant financial burden for Tengir, but rather provides the company with the opportunity to use excess capacity. In addition to this the payments for such access will provide Tengir with the opportunity to receive reimbursements on its investment. The obligation on co-location does only apply in those areas where Tengir has significant market power. Where the obligation for sharing or co-location requires changes or extensions then Tengir shall accede to normal and reasonable requests. Tengir shall accede to all fair and normal requests for co-location of the necessary equipment related to services provided through fibre and copper local loops.

2788. Companies that lease access to Tengir networks and facilities, often need to have access to electricity for equipment that they have installed in the leased facilities. With reference to point h in paragraph 2 of Article 48, ECOI imposes the obligation on Tengir to provide lessees with access to electricity and other vital facilities where this can be implemented, whether the lessee in question installs his own meter or not, but this can be decided to a certain extent by circumstances in each individual case.

2789. The obligation to offer sharing or co-location is imposed on Tengir for the facilities the company controls, including in buildings, ducts and conduits and other facilities. The obligation covers fair and reasonable requests but does, as stated before, entail a significantly increased financial burden on Tengir.

9.3.2.4 Access to other essential facilities

2790. ECOI considers it necessary to impose the obligation on Tengir to accede to justifiable requests for access to and use of more critical service elements, than those discussed here above, and access seekers may need so that access to those elements named above can be fully utilised. The Electronic Communications Act allows for the possibility of obliging a significant market power operator to provide various related services that are necessary for the lessee to have full use of the local access. Various authorisations of this kind can be found in paragraph 2 of Article 48 of the Act.

2791. With reference to points b and f in paragraph 2 of Article 48 of the Electronic Communications Act, ECOI imposes an obligation on Tengir to provide other electronic communications companies with open access to technical interfaces, protocols and other key technologies which are necessary to ensure operability of services.

2792. With reference to point h in paragraph 2 of Article 48 of the Electronic Communications Act, ECOI imposes an obligation on Tengir that the company offer access seekers service that ensures end-to-end operational continuity to users.

2793. With reference to point i in paragraph 2 of Article 48, ECOI imposes an obligation on Tengir to provide access to support to operational systems or analogous software necessary for local loops to be used for the purpose for which they were leased and to ensure competition in offer of electronic communications service. Such access among other things, constitutes the following:

- Operational support
- A database to provide information before an order is made.
- Delivery.
- Orders.
- Maintenance.
- Fault processing.
- Invoicing.

9.3.2.5 Ban on withdrawing access to facilities that has already been granted

2794. As is stated in section 8.2.2.9, there are innovations in point d of paragraph 2 of Article 48 of the Electronic Communications Act to the effect that ECOI can require of an electronic communications company that it does not withdraw access to facilities that has already been granted.

2795. As identified competition problems indicate that Tengir could have the opportunity and incentive in those areas where the company has significant market power to deny specific electronic communications companies access to market 3a or two withdraw access that has

already been granted, or offer access at an acceptable terms that equate to denial, ECOI considers it necessary to impose on Tengir an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in those areas where Tengir is deemed to have significant market power on the relevant market. Tengir shall continue to provide access to ducts and conduits, hosting and local loop lease access that the company already provides in those areas where the company is deemed to have significant market power, both on copper and fibre networks, except if the access seeker in question accepts such a withdrawal.

2796. Should a reasoned request come from Tengir for withdrawal of the above specified access, and the access holder does not accept such withdrawal, ECOI can endorse this with a special administrative decision if arguments to support this are stronger than the interests of the relevant access holder for unchanged access. The relevant access seeker will then be a party to such an administrative case and may present his objections. Circumstances that can justify such a request could for example involve changes to system topology, future development of high-capacity networks, lack of space in civil engineering, including ducts and conduits, and/or other fundamental changes to network systems or infrastructure that make such withdrawal necessary.

9.3.2.6 Conclusion on Imposition of obligations on Tengir for access on market 3a

2797. ECOI considers that access to ducts and conduits is on its own not sufficient, as it has not been used much in this country at this point in time, but ECOI considers that it could be important to support fibre roll-out where this is not in place and as appropriate promote infrastructure competition where such is economically feasible. ECOI therefore considers it important to impose a detailed access obligation on Tengir pursuant to Articles 47 and 48 of the Electronic Communications Act, in those areas where the company is deemed to have significant market power which cover local loops, including in the case of state-supported fibre networks, and for access to ducts and conduits, facility lease and access to other vital facilities related to the above specified access options. In the opinion of ECOI it is quite possible for Tengir to provide such access given the capability available at the company, and it should be pointed out that the company has provided such local loop access up to this point in time. ECOI considers obligations to be in the interests of competition in the long-term and to be conducive to increase the offer of electronic communications service, or at least ensure the continuation of local loop access to the Tengir fibre network in the area where Tengir has significant market power.

2798. ECOI imposes the obligation on Tengir to provide local access to its fibre network on the relevant market in those areas where Tengir is deemed to have significant market power. The company shall not withdraw access that has already been granted, unless the conditions prescribed in section 9.2.2.5 are fulfilled. ECOI considers it not to be as burdensome to impose such an obligation on Tengir and Mila and Ljósleiðarinn in those areas where the companies have significant market power on market 3a, where neither Mila nor Ljósleiðarinn offer access to dark fibre, except to a very small degree on the corporate market and in state-supported networks. Should fair and normal requests for other types of local access to the Tengir fibre network be made, Tengir shall accede to such requests if the access is technically and economically feasible. Should Tengir deny such an access request, this shall be notified to

ECOI with appropriate reasons and ECOI will decide on whether the access in question shall be granted.

2799. Should the situation arise that an electronic communications company request to install a new cable in a Tengir duct or conduit on the market now under discussion, which was not fully used, Tengir should accede to this request, given that it was normal and fair. Should a reasonable request to this effect be made by an interested network operator, that was deemed normal and fair, then Tengir shall prepare a database, which contains precise information on the location and condition of the company's ducts and conduits. It shall show among other things, which ducts and conduits are free in part or in their entirety and can thus be used for such access. The database shall among other things, show the above-specified information in map form. Tengir shall give ECOI and interested electronic communications companies access to the database in question. Should older Tengir ducts and conduits, that are no longer needed, Tengir shall remove them for a reasonable charge, if this could result in interested electronic communications company being then able to use the ducts or conduits in question. If an agreement is not reached, ECOI can decide a normal recompense in this connection. Tengir shall furthermore, in return for a fair charge, make necessary repairs and improvements to ducts and conduits, so that they can be used for this purpose. If an agreement is not reached between Tengir and the party making the request for installing fibre in a free duct or conduit, in return for a reasonable charge, ECOI can decide on reasonable recompense.

2800. The above specified database shall be available no later than 3 months after a fair and reasonable request has been received from a network operator regarding such access in a specific area or specified areas. Such a request shall be limited to a clearly delineated area, e.g. municipality or village/town or district at which the interest of the network operators in question is directed in each instance.

2801. After having received the above-specified map data and the above-specified information on Tengir ducts and conduits the network operator who is interested in utilising free space in the ducts and conduits shall submit an order for access within one month of the time that he took delivery of the data and he shall specify, as precisely as possible, which ducts or conduits access is requested for. Tengir shall not commence work on its own deployment of optical fibres in the area in question, in which the network operator has shown interest subsequent to a request having been made that Tengir provide the above-specified information and until the notice of one month has passed that the network operator has to decide whether he will use access to them. During the period in question, the requested ducts or conduits in the area are therefore reserved for the interested network operator. The period in question can be shorter than 4 months, all depending on how quickly Tengir delivers the necessary information on those ducts and conduits that the request concerns, to the interested network operator. After an order has been made, Tengir is unauthorised to install cables or perform any work on the ducts and conduits covered by the order, that in any way would impair the network operator's requested access to those ducts and conduits.

2802. The obligation in question may however not prevent normal Tengir use of its infrastructure or inhibit Tengir fibre roll-out. If Tengir has formally notified about fibre roll-out in the area in question, with at least 4 months' notice, the priority in question for the access seeker does not apply. Tengir needs to specify precisely which addresses are involved

and the timing of the civil works. Tengir is not authorised to notify about planned civil works with more than 12 months' notice in this connection. In order to prevent Tengir abuse of this authorisation for priority, ECOI can, having received a submission from an access seeker, evaluate whether Tengir deployment plans are realistic. ECOI can then among other things, request copies of agreements with contractors and financial plans for the civil works in question. Should ECOI deem that the plans for civil works in a specific area or areas are not realistic within the 12-month period, ECOI can decide that area or those areas, do not enjoy Tengir priority for civil works.

2803. ECOI can decide on whether the network operators request for access to Tengir ducts and conduits is deemed fair and normal, should a dispute arise on that issue between Mila and the network operator in question.

2804. ECOI also intends to impose the obligation on Tengir to offer co-location/sharing to facilities related to the service provided over copper or fibre local loops. A reasonable request for co-location/sharing is considered to be a request for free space in Tengir buildings and such a definition can also include a request that requires enlargement or rebuild of premises. Where the obligation for sharing or co-location requires changes or extensions then Tengir shall accede to normal and reasonable requests. The obligation to offer sharing or co-location is imposed on Tengir for the facilities the company controls, including in buildings and other facilities. The obligation covers fair and reasonable requests but does not entail a significantly increased financial burden on Tengir. Should agreement not be reached between the parties on access to sharing or co-location ECOI can decide a cost related price and reasonable conditions for access.

2805. Tengir shall authorise open access for other companies to technical interfaces, communications protocols and other technologies that ensure interoperability of services (connections with other networks). Tengir shall provide access to support systems and information necessary for the local loops to be useful for the purpose for which they were leased. Such access can among other things be in the form of operational support, database to gather information prior to orders being made, delivery, orders, maintenance, handling of faults and invoicing. Tengir shall furthermore provide lessees with access to electricity in technical spaces if possible.

2806. Tengir shall provide a list of planned excavation and duct activities (civil works) with 3 months' notice in those areas where the company is deemed to have significant market power. This obligation covers both digging holes and ditches, but repairs or renewal of individual local loops are not covered by this obligation. The obligation is intended to cover overall development where no infrastructure is underground and to civil works and cable laying where infrastructure is in place and where conduits are being laid or fibre cable being pulled through them to a building and to other works related to development and roll-out of fibre networks Tengir is authorised to shorten the notice in the advertisement down to 2 months if Tengir lays additional conduits in all parts of the works in question, that another electronic communications company can use at a later date. In order that the obligation for sharing of civil works be useful for the purpose of enhancing deployment of fibre networks and for encouraging competition in infrastructure, the obligation does not apply in those areas where infrastructure is already in place, cable routes or ducts owned by an electronic

communications company other than Tengir that can be used by such parties for deploying fibre in competition with Tengir.

2807. A Tengir advertisement on planned civil works and cable works must be sufficiently detailed for parties who plan development and/or deployment of networks to acquaint themselves with the actual scope of the works. Among other things, the advertisement shall contain information on whether this is the installation of new infrastructure or whether existing infrastructure owned by the company is to be used, and all ditches and holes that are planned shall be specified along with information on planned connections of fibres and whether local loops will be laid to individual buildings (and then what buildings).

2808. Tengir shall elaborate a documented procedure that should be followed when the company receives a request for participation in civil works. Tengir shall respond to all such requests and provide detailed information on civil works at the first opportunity, such as a more detailed work schedule, estimated cost of the civil works, on further information on utilisation of the company's facilities etc. Tengir shall also make agreements with companies in good faith, that seek access pursuant to point c of paragraph 2 of Article 48 of the Electronic Communications Act in those areas where the company has significant market power on market 3a.

2809. Finally, account is taken of a new provision in point d of paragraph 2 of Article 48 of the Electronic Communications Act to the effect that ECOI can require of an electronic communications company that it does not withdraw access to facilities that has already been granted. ECOI considers it necessary to impose on Tengir an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in those areas where Tengir is deemed to have significant market power on the relevant market. Tengir shall continue to provide access to ducts and conduits, hosting and local loop lease access that the company already provides in those areas where the company is deemed to have significant market power, both on copper and fibre networks, except if the access seeker in question accepts such a withdrawal.

2810. Should a reasoned request come from Tengir for withdrawal of the above specified access, and the access holder does not accept such withdrawal, ECOI can endorse this with a special administrative decision if arguments to support this are stronger than the interests of the relevant access holder for unchanged access.

9.3.3 Obligation for non-discrimination on Tengir on market 3a

9.3.3.1 In general, on non-discrimination obligation

2811. According to Article 50 of the Electronic Communications Act, ECOI can impose obligations on electronic communications companies designated with significant market power to practise non-discrimination with respect to interconnection or access. Obligations for non-discrimination shall particularly ensure that companies apply comparable conditions in comparable circumstances vis-à-vis other providers of comparable service and shall provide service and information on the same conditions and quality as they provide for their own service or service to their subsidiaries or partners. Obligations for non-discrimination can constitute a company's duty to provide other companies with services and service related to

access, including to themselves, with the same time limits, terms and conditions, among other things, including with regards to those who must be connected and to service level, and to the same systems and with the same procedures, to ensure equal access. The provisions of Article 50 correspond to the provisions of Article 30 of the older legislation but are somewhat more detailed. In the bill that became the electronic communications legislation it is however noted that it is not expected that there will be any fundamental change to the implementation.

2812. There is further discussion on assessment of significant market power in Article 36 of the regulation on market analysis in the field of electronic communications. It states in the provision that obligations for non-discrimination can constitute a company's duty to provide all companies with products and service related to access, including to themselves with the same time limits, terms and conditions, among other things those who must be connected and service level, and with the same systems and procedures, to ensure equal access. This is called the equivalence of input obligation (EoI).

2813. It is furthermore stated that it is likely that such a stringent equivalence obligation could result in higher costs for the company in question than a milder equivalence obligation i.e. equivalence of output (EoO). When imposing obligations, ECOI is obliged to balance these increased costs against more powerful competition that the equivalence of input obligation can bring and to particularly consider whether there is a need for this obligation in those instances where direct obligations are not imposed on the relevant electronic communications company for price control. Specifically, such an obligation could be justifiable, in accordance with proportionality and could return substantial gains, in the case of a new electronic communications network or where the intention is to build such a network, rather than in the case of older networks or systems that may even be on their way out, in order to harmonise them with this stringent non-discrimination obligation. The imposition of such a stringent non-discrimination obligation on networks owned by small electronic communications companies could exceed proportionality and therefore not be justifiable.

2814. It is clear that in order for an obligation for access to return the desired results, the access obligation must be imposed in parallel with an obligation for non-discrimination. The obligation is intended to prevent such a company from discriminating, for example with regard to price and quality of service, i.e. selling less expensive and better wholesale services to some parties than to others. Fair, moderate and justifiable conditions for access, including price are basic issues when striving to strengthen competition. The obligation for non-discrimination does however not mean that all companies are subject to exactly the same conditions but rather that all difference in conditions is based on objective criteria.

2815. Even though companies have been assured local access at the same price, companies with significant market power can try to discriminate on other grounds and in this way increase their costs or part of them in order to cause them problems and even push some of them of out of the market, and thus for example favour priority purchasers. Such practices could for example be in the form of varying quality of service, differing service offers, varying processing of applications, inadequate information (among other things on new service and/or planned distribution networks), unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

2816. ECOI believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions. As an example of varying quality, one could mention discrimination between electronic communications companies with respect to connection time of local loops, for example with an advantage for priority purchasers. Discrimination can also manifest itself in varying prices and/or conditions for access to information systems and in parties being provided access to systems of varying ages and capacity.

2817. The information gained by Tengir from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see among other things Article 42 of the Electronic Communications Act.

2818. ECOI imposes the obligation on Tengir to respect non-discrimination against all electronic communications companies that purchase local access on a fixed line network, regardless of whether it is copper or fibre in those areas where the company is deemed to have significant market power. All purchasers of such service shall, having taken circumstances into account, enjoy the same terms (including those that relate to prices). This also applies to Tengir ducts and conduits, hosting and other critical facilities related to market 3a.

9.3.3.2 Equivalence of Input non-discrimination in access

2819. ECOI makes the requirements that quality of access provided to each party be no less than that of services provided by Tengir to priority purchasers or parties that have strong commercial ties with the company. ECOI therefore proposes the Equivalence of Input (EoI) obligation on Tengir. ECOI considers that this obligation is more effective for ensuring complete non-discrimination than what is called an Equivalence of Output obligation. Tengir operates as a wholesale company without a retail arm. The company therefore does not have any kind of internal procedures between retail and wholesale operations. It should therefore not be unnecessarily burdensome to work according to equivalents of input, and furthermore, ECOI understands that this is actually practised in the company today.

2820. Equivalence of Input means that Tengir is obliged to offer the same price, use the same service procedures/service systems, the same time limits and to publish the same information about the service (among other things development and distribution information) to all customers. In this way all customers receive access to the same information, the same delivery and ordering service and receive the same treatment within the same time limits. The same applies to notification of faults and their solutions and access for the staff of customers to Tengir's information systems which are used for service to end users.

9.3.3.3 Equal access to information, impact on development of product offer and equal service time

2821. Information on local access and service related to access lease of facilities and to access to ducts and conduits shall be equally accessible to all electronic communications companies. ECOI considers it particularly important that Tengir does not have the opportunity to discriminate in an irregular manner between customers with respect to innovations on the

market. As related retail markets are in continuous development, all parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new, improved and less expensive retail service (for example more capacity in Internet access) at the same time as parties related to Mila.

2822. Tengir shall take care that applications from all electronic communications companies for local access and related services and for access to facility and to ducts and conduits are processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Tengir is not authorised to make unreasonable demands on applicants as a condition for processing an application.

2823. ECOI imposes the obligation on Tengir that all parties be informed about deployment, development or other changes regarding Tengir local loop networks with the same notice and this notice shall not be shorter than three months.

9.3.3.4 Conclusion on non-discrimination obligation on Tengir

2824. With the authority of Article 50 of the Electronic Communications Act, ECOI imposes the obligation on Tengir to respect non-discrimination vis-à-vis all electronic communications companies that purchase local access on a fixed line through Tengir fibre network. All purchasers of such service shall, having taken circumstances into account, enjoy the same terms, including prices. Equal quality of access shall furthermore be provided to all Tengir customers. The obligations shall furthermore apply to access to ducts and conduits, facility lease and advertisements on fibre deployment. The obligation for non-discrimination that ECOI imposes on Tengir is what is called Equivalence of Input (EoI) where the company is obliged to offer the same prices, use the same service procedures/service systems, the same time limits and publish the same information about the service to all customers. Tengir shall therefore provide access to all parties to those systems that are used within the company and that are necessary in connection with local access and access to ducts and conduits.

2825. Information on local access and service related to access and to access to ducts and conduits to lease of facilities shall be equally accessible to all electronic communications companies. Among other things, information shall be provided on the length of local loops in each instance where known, i.e. distance from the end user in question to the next connection point. If a local loop is measured for some reason, published data shall be updated with the results of that measurement.

2826. ECOI imposes the obligation on Tengir that all parties be informed about distribution, development or other improvements to networks and to Tengir access services with the same notice and this notice shall not be shorter than six months.

2827. Tengir shall take care that applications from all electronic communications companies for local access and related services and for access to ducts and conduits and facility lease are processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Tengir is not authorised to make unreasonable demands on applicants as a condition for processing an application.

2828. The information gained by Tengir from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see Article 42 of the Electronic Communications Act.

2829. ECOI believes that the demand for non-discrimination is both reasonable and normal. There is no indication that it creates significant costs or inconvenience for the company, given the advantages that the obligation brings to competition. ECOI therefore considers it necessary to strengthen competition on the market for local access, including access to ducts and conduits and facility lease, and on downstream markets, by imposing obligations on non-discrimination which cover at least the above specified aspects. The non-discrimination obligations is not as detailed on Tengir on Mila, and ECOI plans not to impose an obligation on Tengir for SLAs, SLGs and KPIs, as was the case with Mila, on the basis of the grounds presented in section 9.2 here above.

9.3.4 Obligation for fair and reasonable pricing

2830. It has been stated in the ECOI analysis that in those areas where Tengir is deemed to have significant market power, Tengir market share is very substantial and has been on the increase while parallel fibre coverage is limited. Although this is a wholesale company, there still exists an incentive for the company in such a strong position to maintain excessively high prices. For this reason, ECOI has decided to impose an obligation on Tengir for fair and reasonable pricing on market 3a.

2831. There is no further elaboration specified in electronic communications legislation or in the memorandum to the law as to how an NRA shall decide whether a tariff is deemed fair and reasonable. Nor can one find further elaboration of this obligation in the Code. ECOI makes reference to further discussion on this issue in section 8.3.4.3 here above.

2832. The concept of fair and reasonable pricing has been used in competition law and in other legal texts related to the electronic communications market and one can mention in this respect Act no. 125/2019 on measures for economic development of high-speed electronic communications networks[462] which represents the transposition of the EU Parliament and Council Directive (EU) 2014/61 from 15 May 2014.

2833. Fair and reasonable pricing is a broad concept which is to be interpreted in accordance with electronic communications legislation and with the main principles of competition law. ECOI will therefore take into account the general views and objectives of the Electronic Communications Act, and also the main principles of competition law when deciding whether the Tengir tariff is deemed to be fair and reasonable.

2834. As was stated here above, methods for recouping costs or methods for pricing shall support efficiency and sustainability of competition and shall maximise benefits for end users. It is authorised to take into account the price on offer on comparable competition markets. When deciding a price, allowance shall be made for reasonable profitability from investments,

[462] In paragraph 2 of Article 7 of the that act it states: "Having received a written request an operator of networks shall accede to all fair and reasonable requests from electronic communications companies for access to its physical civil engineering, if conditions, including **price, are fair and reasonable**. "

having taken risk into account. Economies from predictability and stable wholesale prices shall also be taken into account.

2835. In the opinion of ECOI, the obligation for fair and reasonable pricing does not mean that ECOI needs to endorse the Tengir tariff before it comes into force on the relevant markets.

2836. Tengir will therefore be authorised to decide the wholesale prices that the company collects on this market as before, but with the reservation that the pricing is fair and reasonable. Then ECOI will not intervene in Tengir pricing except in the event of a reasoned complaint from a party to the market or at its own initiative if special circumstances are deemed to justify this. If ECOI comes to the conclusion that the pricing could not be considered fair and reasonable, ECOI will decide price for the service in question which will then apply with respect to the product in question.

2837. In the decision on whether Tengir price is fair and reasonable, ECOI will take into account the specified considerations in electronic communications legislation and also the main principles of competition law. ECOI can among other things take a number of elements into account when deciding whether price is considered fair and reasonable.

1. Whether price for the service has changed abnormally with respect to general price development and that non-discrimination is respected.

2. Whether the price is in accordance with benchmarking with comparative market areas in this country where greater competitive pressure prevails. Average monthly prices for access to local loops will be taken into consideration, in those areas that are considered comparable, and the Authority is also authorised to take into account start-up charges if they vary.

3. Whether prices in accordance with cost of providing the service on the relevant geographic market in an efficient manner, with the addition of reasonable profitability from investment having taken risk into account.

2838. On the other hand, ECOI will assess each complaint individually and the circumstances that prevail on the relevant market. ECOI considers it normal to first take into account points 1 and 2 before it is decided to embark on detailed and time-consuming analysis of costs of the relevant service. ECOI can decide that a maximum price shall be in accordance with benchmarking or limited to an increase in index while such cost analysis is conducted.

2839. As stated here above, it is specified in electronic communications legislation that the burden of proof for charges being based on real costs, rests on the company in question. ECOI can furthermore require an electronic communications company to prepare a cost model for calculation of prices. ECOI considers it normal that if Tengir asserts that price which is based on benchmarking or is decided on the basis of a rise in index, is lower than the cost to the company on the relevant market, then it is in Tengir's hands to prove that this is the case, based on data from the company's bookkeeping. Tengir shall then submit cost analysis in accordance with ECOI requirements. In those cases where Tengir has acquired an electronic communications network by purchasing it or where state support has been used in developing the network, Tengir shall submit a purchase agreement which states purchase

price and/or information on public support that was provided. ECOI can require that information from Tengir bookkeeping is broken down by municipality, which means that the company is required to use such bookkeeping.

2840. In order that ECOI can monitor compliance of the obligation for fair and reasonable tariff, Tengir shall notify ECOI about all tariff changes covered by the obligation.

2841. ECOI does not impose an obligation on Tengir for cost analysed prices for access to ducts and conduits all hosting, as in the case of Mila, on the basis of the arguments presented in section 9.2 here above.

10 Imposition of obligations on Ljósleiðarinn on market 3a

10.1 In general, on designating electronic communications companies with significant market power on specific geographic markets

2842. In the following municipality, ECOI considers that Ljósleiðarinn has significant market power on market 3a:

- Sveitarfélagið Ölfus

2843. In the above specified municipality obligations have been in force on Míla on the relevant market in prior analyses. The obligations that have been in force on Míla are now withdrawn, which will come into force 15 days after the date of this decision.

10.2 Assessment of necessity and grounds for imposition of obligations on Ljósleiðarinn in the Sveitarfélagið Ölfus on market 3a

2844. Is clear from paragraph 2 of Article 1 of regulation no. 556/2023 on market analysis in the field of electronic communications, that the purpose of market analysis is to show whether effective competition prevails on electronic communications markets and to decide on applying measures if competition is not effective, for the purpose of enhancing consumer interests. When elaborating obligations, one must furthermore take into consideration, where effective competition is not in place, whether deployment of high-capacity networks on commercial terms is inadequate. In paragraph 4 of the provision, it states that competition shall be strengthened in electronic communications with economic investments in new and existing electronic communications infrastructure and as appropriate by imposing obligations where they are needed, particularly at wholesale level, for the purpose of achieving effective competition on retail electronic communications markets.

2845. When one has defined the relevant product or service market, geographic markets, evaluation of competitive conditions shall be conducted on relevant markets and as appropriate having designated an electronic communications company as having significant market power on the market, the next step is to describe competitive problems on the relevant market. One must then identify whether the relevant electronic communications company that has been designated as having significant market power, fulfils legal conditions to be deemed a wholesale-only company pursuant to Article 59 of the Electronic Communications Act. All this has been assessed here above and the conclusion of the latter element was that Ljósleiðarinn does not fulfil the above specified legal conditions. For this reason, ECOI has more measures at its disposal to tackle identified competition problems than if Ljósleiðarinn were designated a wholesale-only company.

2846. Having completed all of the above, ECOI must elaborate obligations on the relevant company for the purpose of facilitating competition on the related retail market, for the benefit of consumers. In paragraph 1 of Article 4 of the regulation it states that the purpose of obligations is to create an advantage for consumers with respect to price, quality, choice and access to high-capacity networks, by supporting active and sustainable competition on retail electronic communications markets and the deployment of high-capacity networks on

commercial grounds where possible. ECOI is required to assess whether it is justifiable to impose obligations on the relevant market under specific conditions. In paragraph 2 it states that when elaborating obligations on the basis of market analysis, one shall take care to avoid that they do not thwart investment incentives or that new electronic communications networks and service inhibit competition. One must support sustainable investments in high-capacity networks, while at the same time protecting competition - as bottlenecks and access barriers have in many instances existed at the infrastructure level. In accordance with the above, obligations must support foreseeability and accordance in investments in high-capacity networks.

2847. In the above specified documents from the EU Commission and BEREC on obligations, which were taken into account in the new electronic communications legislation in this country from 2022, emphasis is among other things placed on supporting competition with the development of electronic communications infrastructure and networks where this is considered feasible. In such instances the imposed obligations should support such development. Where competition in the form of electronic communications networks is not considered feasible, because of non-transitory economies of scale and scope of the incumbent in a specific area, or because of other access barriers, adequate access to electronic communications networks and equipment at wholesale level must be assured in order to encourage service competition on existing networks, while at the same time guaranteeing adequate recompense for access to the above specified electronic communications networks, thus encouraging further investment, renewal and maintenance of these networks. For the long-term, service-based competition that has its foundation in steered access to a cost-analysed price can be a tool for generating competition in the regeneration of electronic communications networks. This refers to what is called the investment ladder the objective of which is to create conditions that make it possible for new or smaller operators to build up their electronic communications networks in incremental steps. Such views are reflected in paragraph 5 of Article 30 of the above specified regulation on market analysis.

2848. In selecting the obligations that are best fitted to promote competition in a given market, or on a specific geographic part of the market, it is often beneficial to assess the position that would exist if obligations were not imposed on companies with significant market power, and whether it would be sufficient to use competition legislation alone to guarantee competition.

2849. In accordance with paragraph 4 of Article 30 of the regulation no. 556/2023 on market analysis in the field of electronic communications, which contains further elaboration of the provisions of paragraph 4 of Article 46 of the Electronic Communications Act no. 70/2022, imposed obligations on electronic communications companies shall be:

a) In accordance with the nature of the problem specified in market analysis and be designed to resolve it;

b) Transparent, justifiable and reasoned;

c) In accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA;

d) Justifiable in the light of the objectives of the Electronic Communications Act, i.e. to ensure accessible, efficient, economic, effective and secure electronic communications in this country, and also to increase protection and range of choice for consumers, to support effective competition, effective investments and innovation on the electronic communications market:

e) Proportional and take into account, where possible, costs and advantages, and they may not go further than necessary to achieve intended results.

2850. In Article 29 of the regulation, it is among other things stated that obligations need to be necessary for the purpose of solving specific competition problems. ECOI needs among other things to assess effectiveness and as appropriate to conduct cost and benefit analysis, having in mind the capability of a specific obligation to react to an identified competition problem. Furthermore, whether one should provide specific incentives with the obligations in question.

2851. There are thus many considerations to keep in mind when forming and elaborating obligations. Obligations need to be at once necessary, justifiable, transparent, supported by arguments, in accordance with the nature of the defined competition problem, also to be designed to resolve this in accordance with those objectives that they are intended to achieve (i.e. to strengthen competition, support deployment of high-capacity networks, and create benefits for consumers), support investment in high-capacity networks and to be in accordance with proportionality. When assessing proportionality, it may be necessary to evaluate the effectiveness of the obligations in question on the basis of cost and gain. In all of these evaluations it is appropriate to endeavour to assess what is likely to happen if the obligation in question (or all of them) are not imposed.

2852. In accordance with the principle of proportionality it is normal to impose those obligations on Ljósleiðarinn that are elaborated in section 9.3 and in its relevant subsections later in this document. As previously stated, ECOI must choose the method that causes least disruption, for the purpose of dealing with the identified problem, see paragraph 2 of Article 46 of the Electronic Communications Act. In the opinion of ECOI, the obligations imposed on Ljósleiðarinn are conducive to achieving the objectives of the Electronic Communications Act no. 70/2022 for effective competition and economic electronic communications and furthermore to support further deployment of fibre networks in this country, and to create advantages for consumers. In section 7.5.2 and 7.5.3 here above, a large number of potential and existing competition problems on markets 3a and 3b have been described. In order to tackle the problems identified there, ECOI shall impose obligations on companies with significant market power pursuant to Articles 47-52, 55 and 59 of the Electronic Communications Act, where appropriate.

2853. The provisions of Article 47 prescribe on access to civil engineering, Article 48 on access to networks and service, Article 49 on transparency, Article 50 on non-discrimination, Article 51 on separation of accountancy, Article 52 on price control, Article 55 on new high-

performance high-speed networks and Article 59 on wholesale-only companies. In paragraph 2 of Article 59 it states that if ECOI comes the conclusion that the provisions of paragraph 1 of Article 59 are fulfilled, the Authority can only impose on such a company an access obligation pursuant to Article 48 of the act and a non-discrimination obligation pursuant to Article 50 of the act and on fair and reasonable pricing, if this is considered justifiable on the basis of market analysis.

2854. In this chapter it will be argued why ECOI considers it necessary to impose various obligations on Ljósleiðarinn in the municipality in question and that they are in accordance with the views expressed in the above specified paragraph 4 of Article 30 of the regulation. Further grounds and discussion can be found in the relevant subsections to section 9.3.

2855. In the ECOI examination of the relevant market the Authority has come to the conclusion that no other measures can be found that could be as effective in solving the competition problems that exist on the market and that relate to Ljósleiðarinn in those municipalities where the company is considered to have significant market power on market 3a. ECOI furthermore considers that the obligations are in accordance with proportionality.

2856. In the light of the potential and real competition problems that can occur and of the strong Ljósleiðarinn position on the relevant market the municipality where the company is deemed to enjoy significant market power, ECOI considers it necessary to impose obligations on the company for access, non-discrimination, and price control in the form of fair and reasonable tariff. It should be noted that despite Ljósleiðarinn being deemed not to fulfil the legal conditions to be considered a wholesale-only company, this does not mean to say that ECOI imposes all the obligations prescribed in Articles 47–52, 55 and 59 of the Electronic Communications Act. Ljósleiðarinn operates mostly as a wholesale company on market 3a and 3b, though the company does not fulfil the conditions of Article 59 to be deemed a wholesale-only company and ECOI takes this into account when deciding obligations on the company.

2857. As previously stated, one must take certain precautions when imposing obligations, for example the obligations are in accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA.

2858. ECOI points out that Ljósleiðarinn has significant market power in only one municipality and ECOI considers it to be inconsistent with proportionality to impose very burdensome obligations on Ljósleiðarinn in this single municipality. As stated here above, there are three municipalities where Mila has a dominant market position where obligations were imposed for fair and reasonable pricing for access to ducts and conduits. These municipalities, parallel coverage of fixed line networks is more than 40%. In Sveitarfélagið Ölfus, parallel deployment of fixed line networks was about 55% in mid-2023. ECOI therefore considers it sufficient to impose on Ljósleiðarinn and obligations for fair and reasonable pricing for access to ducts where such ducts are in place and when a justifiable and reasoned request for access to these ducts has been received. Then there's the fact that Ljósleiðarinn operates one technical space in the municipality, and the opinion of ECOI, it would be inconsistent with proportionality to request a special cost analysis of access to the technical space. ECOI therefore considers it

adequate to impose on Ljósleiðarinn an obligation for fair and reasonable pricing for access to Ljósleiðarinn facilities in the municipality.

2859. ECOI considers an obligation for access to hosting and sharing of related facilities to be necessary, see discussion and reasoning in section 10.3.2.3 here below, and in the opinion of FST, Article 48 of the Electronic Communications Act provides authority to impose such access obligations on electronic communications companies with significant market power. ECOI then imposes an obligation on Ljósleiðarinn to provide local access to its fibre network on the relevant market in the area where Ljósleiðarinn is deemed to have significant market power, in the case of a state funded fibre network, unless the access seeker rather requests bitstream access. In the case of those fibre local loops that Ljósleiðarinn has deployed in the area without state support, Ljósleiðarinn can choose to provide local access or adequate bitstream access.

2860. ECOI considers that the above specified access obligation regarding hosting and sharing of related facilities and the duty to notify obligation for fibre civil works to be furthermore justifiable, to support necessary transparency, to be being reasoned, in accordance with the nature of identified competition problems, being designed to resolve them, in accordance with those objectives that the obligations are intended to achieve, to support increased investment and competition in high-capacity networks, and to be not in excess of proportionality. These are obligations that are particularly important to support investments in fibre development and as applicable infrastructure competition, where such is considered financially realistic, in those areas where Ljósleiðarinn has significant market power on market 3a. This is an area in the country where Ljósleiðarinn has a dominant position, and in addition to this, deployment of parallel fibre coverage is in the early stages. If this obligation is not imposed on Ljósleiðarinn in the area in question, along with the obligation for non-discrimination and obligation for fair and reasonable pricing, it is the opinion of ECOI that competitive conditions at those locations will not improve during the lifetime of the analysis on the market in question.

2861. In addition to the above access obligation, ECOI considers it necessary to impose an access obligation on Ljósleiðarinn in the relevant areas for access to fibre local loops and access to other vital facilities. With respect to further arguments for this, reference is made to sections 10.3.2.2 and 10.3.2.4. ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve and that they are not in excess of proportionality. ECOI considers the obligations particularly necessary for the purpose of ensure supporting competition in provision of bitstream service (market 3b) and service competition among retailers in the areas in question, as Ljósleiðarinn is by far the largest network operator in the relevant area. ECOI considers that obligations do not prevent investments in high-capacity networks in the relevant area, but if infrastructure competition develops over time, it would be possible to withdraw such access obligations.

2862. The obligation for wholesale access on the relevant wholesale markets is a prerequisite for competition to become active in related retail markets such as on the broadband market Internet and voice telephony market (VoIP) and for TV distribution (IPTV). It is not possible to solve the competition problems described here above in any other way than by imposing the

obligation for access. Access barriers make it difficult for Ljósleiðarinn competitors and customers to develop extensive fibre networks in the relevant areas and it is thus a prerequisite for effective competition on downstream markets that they can receive access to the Ljósleiðarinn fibre network in this area.

2863. ECOI considers the obligation for access to be an insignificant burden on Ljósleiðarinn, but it is an essential prerequisite for effective competition on the downstream markets. It is in fact necessary for electronic communications companies to gain access to the Ljósleiðarinn local loop network in order to be able to offer their customers adequate services in the area in question, variously bitstream access and/or retail service. The obligation is first and foremost to ensure that Ljósleiðarinn does not discriminate when making local loop agreements. ECOI does not consider it burdensome to serve all counterparties for local loops in an adequate manner, as Ljósleiðarinn has done this up to this point in time. Through a connection with the Ljósleiðarinn local loop network the companies gain better use of the electronic communications equipment in which they have invested.

2864. With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Ljósleiðarinn in that area where the company has significant market power. This is an equality of input obligation (EoI) and an obligation for equal access to information. ECOI considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as is further argued here below in sections 10.3.3.1-10.3.3.4.

2865. The non-discrimination obligation is somewhat simpler in the case of Mila where for example, obligations for service level agreements, quality assurance and publication of KPIs are not imposed. It should be noted that despite Ljósleiðarinn being deemed not to fulfil the legal conditions to be considered a wholesale-only company, this does not mean to say that ECOI imposes all the obligations prescribed in Articles 47–52, 55 and 59 of the Electronic Communications Act.

2866. As previously stated, one must take certain precautions when imposing obligations, for, example the obligations are in accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA. ECOI points out that Ljósleiðarinn is a significantly smaller company than Mila, for example on the basis of turnover, with a much smaller service offer and economies of scope, and how is significant market power in only one municipality. For this reason, ECOI considers the to be inconsistent with proportionality to impose an obligation for service level agreements, quality assurance and the publication of KPIs in only one municipality. It should also be mentioned that Ljósleiðarinn it is not a former vertically integrated company, nor have Ljósleiðarinn connections with other companies on the retail market been assessed so strong that one can detect the characteristics of vertical integration, and the above specified obligations generally aim to ensure that one electronic communications company is not favoured to a greater degree than another. One can finally mention that competitive conditions are generally much worse in those areas where Mila has significant market power than in the areas where Ljósleiðarinn is in such a position.

2867. The obligation for non-discrimination with respect to access to the Ljósleiðarinn local loop network in wholesale, and to related facilities such as lease of facilities and access to ducts and conduits, are necessary for companies, whether on the relevant market or related markets to be able to compete on a level playing field between themselves and with Ljósleiðarinn in the relevant areas. The obligation should mean that all electronic communications companies that purchase access to Ljósleiðarinn local loops receive comparable services and prices and, in this way, resolve competition problems related to possible discrimination. ECOI considers the obligation for non-discrimination to be not particularly burdensome, as Ljósleiðarinn appears to have followed work procedure that ensures this. The obligation should lead to all companies leasing access to local loops receiving comparable services and should be instrumental in resolving the potential competition problems described in section 7.5.2 with respect to issues such as speed of reply, price, quality etc., that can give Ljósleiðarinn an advantage on the relevant market and downstream markets. The obligation thus prevents Ljósleiðarinn from being able to discriminate against parties on the relevant market in the areas in question. ECOI considers that if this non-discrimination obligation were not in place, then a negative competition situation in the relevant area could become even worse on the relevant wholesale market.

2868. The obligation for fair and reasonable pricing will apply to Ljósleiðarinn fibre networks in this area. ECOI will not impose an obligation on Ljósleiðarinn for cost analyses prices for access to ducts and conduits or hosting, as is the case with Mila, with the same arguments presented here above, among other things in discussion on less stringent non-discrimination obligation on Ljósleiðarinn than on Mila. ECOI considers it necessary to impose this obligation on Ljósleiðarinn in the areas in question on the relevant market. ECOI furthermore considers the obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as will be further argued here below and in section 9.3.4. ECOI considers the obligation fulfils the requirement for proportionality, as Ljósleiðarinn will be authorised to decide the wholesale prices that the company collects on this market as before, but with the reservation that the pricing is fair and reasonable.

2869. ECOI believes that Ljósleiðarinn as a company with significant market power has the opportunities and incentives to demand excessively high prices. This area is characterised by less competitive pressure prevailing on the relevant market than in other more competitive areas. Retailers, and thus consumers do not have as great opportunities there to enjoy comparable electronic communications service from other network operators, except over Mila fibre and copper local loops, which however do not reach all countryside locations in the municipality. Although ECOI considers there still to be substitutability between copper and fibre, fibre local loops are on their way out during the lifetime of the analysis.

2870. The above specified obligation for fair and reasonable pricing should ensure that Ljósleiðarinn will not be able to potentially charge excessively high pricing in the area in question, to the detriment of access seekers and thus consumers. For this reason, ECOI considers it necessary and justifiable to add such an obligation. It is not clear whether this obligation will be tested, but this will only happen should a complaint be received on excessively high pricing or under special circumstances at the initiative of ECOI, for example

if a price increases significantly or develops significantly in excess of general price developments. It should not necessarily require intervention from ECOI for the price of providing a service to be taken into account when deciding the tariff, as account should rather be taken of general price development and/or benchmarking should ECOI become involved.

2871. It should be clear that the benefits for parties to the market are substantial and that there are major gains from this for bitstream operators and retailers and thus for consumers, as it should prevent the possibility of higher pricing in areas where little or even no effective competition prevails.

10.3 Imposition of obligations on Ljósleiðarinn on market 3a

10.3.1 General

2872. ECOI imposes to a large extent, the same or comparable obligations on Ljósleiðarinn on the above specified geographic market that are imposed on Mila where Mila is deemed to have significant market power, with the exception that, as in the case of Tengir, ECOI does not impose obligations on Ljósleiðarinn for cost-oriented tariff for lease of facilities and access to ducts and conduits. ECOI considers that is not in accordance with proportionality to impose such an obligation on Ljósleiðarinn, as this is only a case of a single small municipality, and for other reasons described in more detail in section 10.2. With respect to the price for such access, an obligation will therefore be imposed on Ljósleiðarinn for fair and reasonable pricing. For this reason, there is no requirement for the company to provide local loop lease access to its fibre network except in the case of local loops that have been deployed with state aid. In the case of fibre local loops that have been deployed in the municipality in question without state aid, Ljósleiðarinn is authorised to resolve the access obligation by continuing to provide the bitstream access that the company has provided up to this point in time. No requirement is made that this is over Access Option 1, i.e. local access. The non-discrimination obligation will be somewhat simpler in the case of Mila and for example, obligations for service level agreements, quality assurance and publication of KPIs will not be imposed on the grounds presented in section 10.2 here above.

10.3.2 Obligation to provide access

10.3.2.1 Evaluation of need for Ljósleiðarinn to provide access to networks and service, ducts and conduits, lease of facilities and related facilities

2873. As has been previously discussed, ECOI can impose obligations on electronic communications companies with significant market power to accede to justifiable requests for access and to use of buildings, including buildings or entry to buildings, cabling in buildings, antennae, towers and other structures if market analysis indicates that denial of access or the imposition of unreasonable conditions for access could hinder sustainable competition and could impinge on end users' interests.

2874. In this connection it should be noted that in section 7.5.2.3 here above, where there is discussion on competition problems on market 3a, the conclusion was reached that a company that has significant market power on a wholesale market can have a tendency to deny access to companies that are in competition with the company on downstream markets

or possibly new competitors, access to wholesale service, for the purpose of preventing competition or making it at least more difficult for competitors in competition. Such behaviour can be manifested in absolute denial of access or that access is provided at such unreasonable terms, including pricing, that is tantamount to denial. ECOI surmised that Ljósleiðarinn could have the opportunity and incentive in those areas where the company enjoys significant market power, to deny specific electronic communications companies access to market 3a, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b.

2875. According to the bill that became the Electronic Communications Act, Article 47 enables smaller electronic communications companies to deploy their own networks without needing to embark on special civil works. For example, access to ducts and conduits could be extremely useful in the development of new electronic communications networks, as this saves electronic communications companies the work of digging ditches and in addition to this it diminishes the inconvenience caused by repeated civil works. It is furthermore stated that emphasis is placed on examining this obligation before others in accordance with the objectives of the bill to support development of new high-capacity networks and to increase competition between networks.[463]

2876. The above means that ECOI considers it necessary to fulfil the objectives of the Electronic Communications Act, among other things to support fibre roll-out where it has not taken place and even to support the development of parallel fibre network coverage where this can prove economically feasible, to impose the obligation on Ljósleiðarinn to accede to justifiable requests for access to civil engineering, among other things to ducts and conduits in the geographic area where the company has significant market power on market 3a. ECOI considers this obligation not excessive given its importance, but it must of course only apply in those areas where Ljósleiðarinn has significant market power.

2877. Pursuant to paragraphs 5 and 6 of Article 48 one shall first assess whether the above specified obligation for access to civil works pursuant to Article 47 of the Electronic Communications Act or another kind of access to wholesale procurements could suffice as a moderate measure to support competition and assure end users' interests, before an obligation for access to networks and service pursuant to Article 48 is imposed on a company with significant market power. With respect to assessment of whether an obligation for access to civil engineering could suffice as a moderate measure to support competition and could ensure the interests of end users, one must take into account that Article 47 of the Electronic Communications Act is the transposition of Article 72 of the Code. This is the above specified constitutes an innovation, it could prove useful to take into account the Commission Recommendation on the appropriate market from December 2020 and the working document in connection with the Recommendation, as the above specified Recommendation was updated after the Code came into force.

2878. The Recommendation discusses among other things that according to Article 72 of the Code, NRAs can impose an obligation for access to civil engineering as an independent

[463] Alþingistíðindi, 152 Parliament, Parliament document 666 – 461. case, on article 47.

measure on the relevant wholesale market and such an obligation should be considered before other access obligations are imposed.[464]

2879. In the working document that accompanied the above specified Recommendation, it states that when NRAs take into account whether the relevant market requires ex-anti-regulation one must take into account obligations that result from other regulation and the impact they have on the market. In the context of Article 72 of the Code, see Article 47 of the Electronic Communications Act, specific reference is made to obligations that result from the Broadband Cost Reduction Directive 2014/61/EU (hereafter "BCRD").[465] This directive was transposed into Icelandic law on 29 October 2019 with Act no. 125/2019 on measures for economic deployment of high-speed electronic communications networks and the law came into force on 1 January 2020. The object of the instrument is to support development of high-speed electronic communications networks by enabling companies to share civil engineering and in this manner, companies can develop networks at lower cost. The instrument instructs all network operators (not only electronic communications companies), to accede to all normal and fair requests for access to civil engineering and to information on them fair terms and conditions for fair recompense. One may only deny a request for access on the basis of objective, transparent and moderate reasons.

2880. Many European states have examined this and come to the conclusion that the directive is not adequate on its own to ensure efficient access to ducts and conduits of electronic communications companies with significant market power and have also imposed, obligations for such access in their market analyses after the directive in question came into force.[466] One can in this context, note that in the DBA market analysis by in Denmark on the relevant market from 2017, ERST refrained from imposing such an obligation on TDC, which was designated as an electronic communications company with significant market power in that country. The EU Commission raised an objection to this.[467] In the case of the Czech

[464] Guidelines on relevant markets from 18 December 2020, paragraph 28.

[465] EU Commission working document with Recommendations on the relevant market, SWD (2020) 337 final, dated 18 December 2020, pages 652 and 63.

[466] There is further discussion on the Czech case in section 8.2.4.5, and reference is made to this. See also in this connection discussion at the bottom of page 63 and top of page 64 in the Commission working document. There it states among other things that Bulgaria is the only country that has deemed that obligations that result from BCRD, are adequate and the NRA has lifted an obligation for access to civil engineering. It should be noted that in Bulgaria, the W LA market is assessed as being fully competitive.

[467] See comments from the EU Commission in case C (2017) 4901 final. On page 9 there is a comment on the withdrawal of the access obligation: *„DBA proposes to withdraw the duct access obligation because it considers that the*
transposition of Directive 2014/61/EU (covering access to physical infrastructure) will be sufficient. The Commission notes that the current regulatory obligations on access to ducts in Denmark do not include a price control obligation (only an obligation to provide access on reasonable terms). The Commission invites DBA to re-consider whether the lack of such an obligation gives consistent buy-or-build signals to alternative operators, given that cost-oriented duct prices are integrated in the price controls for other forms of regulated access to be imposed on the significant market power operator, and whether access on reasonable terms to be negotiated case by case,
without a requirement of a clear reference offer, will be sufficient to promote infrastructure competition, wherever economically efficient, through access to passive infrastructure."

Republic from 2018, the EU Commission raised objections to the Czech NRA, CTÚ, for not imposing an obligation for cost analyses tariff in parallel with such an access obligation.[468]

2881. ECOI believes that the legislation in question from 2019 does not ensure, on its own, efficient and effective access to Ljósleiðarinn ducts and conduits as in Iceland, Act no. 125/2019 has never been tested with respect to existing civil engineering and for this reason it is not possible to conclude that obligations resulting from this legislation can replace a well elaborated obligation for access to civil engineering pursuant to Article 47 of the Electronic Communications Act and as appropriate an obligation for costs analysed prices for such access. ECOI also considers that this legislation is more effective in those instances where electronic communications companies request access to civil engineering of other parties than electronic communications companies, for example utility companies, than in such instances where electronic communications companies request access, for example to ducts and conduits from competitors on the electronic communications market. The willingness of a company to provide access is by the nature of things greater when the access seeker is not a competitor.

2882. It is also necessary to note that the BCRD directive in question and the legislation from 2019 only constituted minimum coordination in this connection. There is only a provision for access of an electronic communications company to minimum information from the operator of such infrastructure with regards to existing infrastructure. In requests from electronic communications companies it also has to be specified the area in which the electronic communications company in question plans to develop a high-speed network. So, this is a kind of “ad hoc” provision.

2883. In paragraph 2 of Article 7 of the act from 2019, reference is made to the obligation of the operator of such infrastructure to accede to all reasonable requests for access to civil engineering on the basis of fair and normal terms and conditions, including price. Having the circumstances in mind, a number of elements could have an impact on the conditions for such access, for example additional costs resulting from maintenance and alterations, existing protection measures that need to be adopted to minimise negative impact on security and reliability of networks, an arrangement for damage liability in the event of any damage, use of public grants to build the civil engineering, including special terms and conditions tied to the grants or prescribed in national law in accordance with the rules of EEA law, the ability to deliver or provide civil engineering to fulfil obligations for providing public service, for limitations resulting from national provisions that relate to nature protection, public health and public safety or to fulfil the objectives of planning.

2884. According to paragraph 3 of Article 7 of the act, the operator of such a construction is authorised to deny access to specific civil engineering for objective reasons. Material civil engineering can particularly be technically unsuitable because of special circumstances that relate to the civil engineering itself, such as because of lack of space are that time or because of future needs that are demonstrated in an adequate manner, for example by an investment plan or other data. Under particular circumstances, shared use of civil engineering can be a risk for security or public health, reliability and network security, including in the case of

[468] In section 8.2.4 there will be further discussion on this case and reference is made to this.

national civil engineering. It is also possible that the provision of service already in place is put at risk with the provision of access to the same civil engineering.

2885. It is also prescribed in paragraph 4 of Article 7 of the Act that denial shall be presented within two months from the day of receipt of a completed request. It is then possible to refer the denial to ECOI for resolution.

2886. From all of the above it is clear that the above specified legislation from 2019 does not suffice on its own to support the deployment of high-capacity networks in this country, which means that there has to be an obligation for access to ducts and conduits on Ljósleiðarinn in the area where the company has significant market power. The above specified legislation has proven difficult in practice and ECOI has not received any cases for procedure in connection with the provisions of Article 7 but has heard comments from electronic communications companies that legislation is in fact unusable to achieve the objective for which it is intended. It is clear that an electronic communications company that receives such a request from its competitor can in various ways try to reject a request or delay the matter in such a manner that the interested company loses interest. The electronic communications market is fluid, and for this reason, electronic communications companies that are involved in development of electronic communications networks cannot wait for many months or even years for such a request to be resolved.

2887. In the working document, a number of issues are listed that NRAs can take into account, i.e. a commercial access offer, access that is obligatory pursuant to Article 61 of the Code, see Article 38 of Electronic Communications Act or planned conditional access to other wholesale procurements. It is then stated that in the light of market development, NRAs should take into account whether it was economically and technically feasible for operators to install or use civil engineering based on access to ducts and conduits in competition with a company with significant market power. [469]

2888. Here one should note that ECOI has not received information on the existence of offers for access to civil engineering that have been presented on commercial grounds and that have not been made because of obligations in force. Nor has ECOI imposed the obligation on Ljósleiðarinn to provide access to its civil engineering or network elements on the basis of Article 38 of the Electronic Communications Act. Nor are there any current plans to impose obligations on other wholesale procurements that tackle in an adequate manner defined competition problems with respect to access to ducts and conduits.

2889. It is clear that facilities and access to ducts and conduits can be important in areas where only one party operates electronic communications networks, or where the electronic communications networks of other parties reach a limited number within the area, in order to facilitate parallel coverage of another electronic communications network where this is economically feasible. All of the above means that ECOI considers that the issues listed in the Recommendation do not prevent that obligations for access to networks and service pursuant to Article 48 will be imposed on Ljósleiðarinn in the area where the company enjoys significant market power on market 3a, at the same time as obligations are imposed on access to Mila

[469] EU Commission working document with Recommendations on the relevant market, SWD (2020) 337 final, dated 18 December 2020, page 65.

civil engineering, pursuant to Article 47 of the Electronic Communications Act, and in fact, ECOI considers it important that the access obligation on Ljósleiðarinn on market 3a covers both.

2890. One finally must take into account whether Article 47 of the Electronic Communications Act can suffice as a moderate measure to support competition and assure end users' interests. In the opinion of ECOI, the obligation for access to civil engineering does not tackle all defined competition problems, and in Article 48 in the Electronic Communications Act it is stated that ECOI can prescribe that an electronic communications company with significant market power accede to justifiable requests for access to and use of specific network elements and related facilities if it is considered that denial of access or unreasonable terms and conditions, that have a similar impact, would inhibit the development of a sustainable competitive market at retail level and would not be in the interests of end users. As is stated in section 7.5.2.3, ECOI considers that Ljósleiðarinn could have the opportunity and incentive in those areas where the company enjoys significant market power, to deny specific electronic communications companies access to market 3a or as appropriate on market 3b, or to offer access at unreasonable terms that could be equated with denial, for the purpose of making it difficult for them in competition on downstream markets, if obligations were not in place to oblige the companies to provide access, either to market 3a or to 3b.

2891. All of the above means that ECOI considers that access to civil engineering pursuant to Article 47 of the Electronic Communications Act, see Article 33 of the regulation on market analysis, do not suffice to tackle identified competition problems on the relevant market vis-a-vís Ljósleiðarinn in the area where the company is deemed to have significant market power. On the other hand, ECOI considers it important to impose such obligations on Ljósleiðarinn on the relevant market in those areas, alongside an obligation for access to networks and Ljósleiðarinn me service on the relevant market, and also other obligations that will be prescribed here below, for the purpose of supporting fibre roll-out in the areas when it is not yet been rolled out or only to a certain degree, to promote infrastructure competition in those areas where this is financially feasible.

2892. ECOI also considers it justifiable with a view to the initial investment and risk entailed in the investment, that Fibre-optic to provide such local loop access in this one area where the company is deemed to have significant market power. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in the offer of electronic communications services in the area where Ljósleiðarinn has significant market power.

2893. ECOI also considers that other issues prescribed in paragraph 4 of Article 48 of the Electronic Communications Act, i.e. expected technical development, the need to ensure technical independence, any kind of IPR or offer of joint European service, do not have the impact that it is not considered proper to impose the above specified access obligations on the relevant market.

2894. ECOI imposes an obligation on Ljósleiðarinn to accede to all normal requests from electronic communications companies for the above specified access in the area where the company has significant market power on market 3a, as this further explained in sections 10.3.2.2-10.3.2.4 here below.

10.3.2.2 Access to fibre local loops

2895. The access that Ljósleiðarinn offers today constitutes bitstream access that is provided in connection points in the Capital City Area. With a retailer connection to the connection points, access is activated to all customers connected to the Ljósleiðarinn local loop network.

2896. ECOI then imposes an obligation on Ljósleiðarinn to provide local access to its fibre network on the relevant market in the area where Ljósleiðarinn is deemed to have significant market power, in the case of a state funded fibre network, unless the access seeker rather requests bitstream access. In the case of those fibre local loops that Ljósleiðarinn has deployed in the area without state support, Ljósleiðarinn can choose to provide local access or adequate bitstream access.

2897. If Ljósleiðarinn decides to use the above specified authority to provide bitstream access in instances of fibre local loops that have been developed with state aid, Ljósleiðarinn is only authorised to limit access to and provide use of local loops on the basis of fundamental demands that relate to operational security of the electronic communications network in cases of emergency, its system and in proven instances the operational capability of service systems and protection of data.

10.3.2.3 Collocation or sharing, including access to ducts and conduits and notifications of planned civil works

2898. As has been stated previously it can entail significant costs for new network operators on the local loop market to develop the facilities necessary to offer an adequate network. Such costs are in many instances sunk costs. In order to distribute such development costs between the companies in question the method is often used to share cost of civil works and laying of ducts.

2899. The EU Commission has also emphasised that parties to the market provide regulatory authorities with information on where it would be possible to utilise ducts, conduits and other structures for the distribution of next generation access networks (NGA). For this purpose, the regulatory authorities shall make efforts to ensure that where the above specified facilities exist, they should be open to all.

2900. With respect to whether it is realistic to use adjacent access instead of the above specified access, such as with access to ducts and conduits, ECOI considers that the latter access is on its own not sufficient, as it has not been used much in this country at this point in time, but ECOI considers that it could be important to support fibre roll-out where this is not in place and as appropriate promote infrastructure competition where such is economically feasible. For this reason, ECOI considers important that an access obligation on Ljósleiðarinn in the area where the company is deemed to have significant market power covers local loop lease in the case of state-supported fibre networks, at least with regards to the bitstream access that the company has already provided on market 3b in the case of fibre local loops that have not been developed with state aid, access to ducts and conduits, facility lease and access to other vital facilities related to the above specified access options. In the opinion of ECOI it is quite possible for Ljósleiðarinn to provide such access given the capability available at the company.

2901. ECOI also considers it justifiable with a view to the initial investment and risk entailed in the investment, that Ljósleiðarinn continue to provide the above specified access in the area in question. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in the offer of electronic communications services in the area where Ljósleiðarinn has significant market power.

2902. ECOI also considers that other issues prescribed in paragraph 4 of Article 48 of the Electronic Communications Act, i.e. expected technical development, the need to ensure technical independence, any kind of IPR or offer of joint European service, do not have the impact that it is not considered proper to impose such access obligations on the relevant market.

2903. ECOI imposes an obligation on Ljósleiðarinn to accede to all normal requests from electronic communications companies for the above-specified access, along with access to related facilities and service in those areas where the company has significant market power on market 3a, on the basis of point g in paragraph 2 of Article 48 of the Electronic Communications Act.

2904. A reasonable request for access to a local loop is considered to be a request for a local loop that is not in use for another purpose on that day when new use is planned.

2905. Should the situation arise that an electronic communications company requests to install a new cable in a Ljósleiðarinn duct or conduit on the market now under discussion, and in those areas where Ljósleiðarinn is deemed to have significant market power, which was not fully used, Ljósleiðarinn shall accede to this request, given that it is normal and fair. Should a reasonable request to this effect be made by an interested network operator that is deemed normal and fair, then Ljósleiðarinn shall prepare a file, which contains information on the location and condition of the company's ducts and conduits. It shall show among other things, which ducts and conduits are free in part or in their entirety and can thus be used for such access. Ljósleiðarinn shall give ECOI and interested electronic communications companies access to the data in question.

2906. The above specified database shall be available no later than 3 months after a fair and reasonable request has been received from a network operator regarding such access in a specific area or areas. Such a request shall be limited to a clearly delineated area, e.g. municipality or village/town or district at which the interest of the network operators in question is directed in each instance.

2907. After having received the above specified documents with information on Ljósleiðarinn ducts and conduits, the network operator who is interested in utilising free space in the ducts and conduits shall submit an order for access within one month of the time that he took delivery of the data and he shall specify, as precisely as possible, the ducts or conduits for which access is requested. Ljósleiðarinn shall not commence work on its own deployment of optical fibres in the area in question, in which the network operator has shown interest subsequent to a request having been made that Ljósleiðarinn provide the above-specified information and until the notice of one month has passed that the network operator has to decide whether he will use access to them. During the period in question, the requested ducts or conduits in the area are therefore reserved for the interested network operator. The period

in question can be shorter than 4 months, all depending on how quickly Ljósleiðarinn delivers the necessary information on those ducts and conduits that the request concerns, to the interested network operator. After an order has been made, Ljósleiðarinn is unauthorised to install cables or perform any work on the ducts and conduits covered by the order, that in any way would impair the network operator's requested access to those ducts and conduits.

2908. The obligation in question may however not prevent normal Ljósleiðarinn use of its infrastructure or inhibit Ljósleiðarinn fibre roll-out. If Ljósleiðarinn has formally notified about fibre roll-out in the area in question, with at least 4 months' notice, the priority in question for the access seeker does not apply. Ljósleiðarinn needs to specify precisely which addresses are involved and the timing of the civil works. Ljósleiðarinn is not authorised to notify about planned civil works with more than 12 months' notice in this connection. In order to prevent Ljósleiðarinn abuse of this authorisation for priority, ECOI can, having received a submission from an access seeker, evaluate whether Ljósleiðarinn deployment plans are realistic. ECOI can then among other things, request copies of agreements with contractors and financial plans for the civil works in question. Should Mila deem that the plans for civil works in a specific area or areas are not realistic within the 12-month period, ECOI can decide that area or those areas, do not enjoy Ljósleiðarinn priority for civil works.

2909. To increase the effectiveness of the above specified obligation for access to ducts and conduits, and to support the deployment of fibre in areas where fibre is lacking, and is appropriate to strengthen parallel coverage of fibre networks where this can be considered financially feasible, ECOI imposes the obligation on Ljósleiðarinn that the company shall publish a list of planned civil works with 3 months' notice in those areas where the company is deemed to have significant market power on the relevant market. This obligation covers both digging holes and ditches, but repairs or renewal of individual local loops are not covered by this obligation. The obligation is intended to cover overall development where no infrastructure is underground and to civil works and cable laying where infrastructure is in place and where conduits are being laid or fibre cable being pulled through them to a building and to other works related to development and roll-out of fibre networks Ljósleiðarinn is authorised to shorten the notice in the advertisement down to 2 months if Ljósleiðarinn lays additional conduits in all parts of the civil works in question, that another electronic communications company can use at a later date. In order that the obligation for if sharing of civil works be useful and is fair for the purpose of enhancing deployment of fibre networks and for encouraging competition in infrastructure, the obligation does not apply in those areas where infrastructure is already in place, cable routes or ducts owned by an electronic communications company other than Ljósleiðarinn that can be used by such parties for deploying fibre in competition with Ljósleiðarinn.

2910. A Ljósleiðarinn advertisement on planned civil works, and duct works must be sufficiently detailed for parties who plan development and/or deployment of networks to acquaint themselves with the actual scope of the works. Among other things, the advertisement shall contain information on whether this is the installation of new infrastructure or whether existing infrastructure owned by the company is to be used, and all ditches and holes that are planned shall be specified along with information on planned connections of fibres and whether local loops will be laid to individual buildings (and then what buildings).

2911. The obligation is imposed on Ljósleiðarinn to provide facilities in hosting space. A reasonable request for co-location is considered to be a request for free space in Ljósleiðarinn buildings and such a definition can also include a request that requires enlargement or rebuilding of the premises.

2912. In the opinion of ECOI, the obligation to offer sharing or co-location, as it is described here above, is fair and does not create a significant financial burden for Ljósleiðarinn, but rather provides the company with the opportunity to use excess capacity. In addition to this the payments for such access will provide Ljósleiðarinn with the opportunity to receive return on its investment. The obligation on co-location does not only apply in those areas where Ljósleiðarinn has significant market power. Where the obligation for sharing or co-location requires changes or extensions then Ljósleiðarinn shall accede to fair and reasonable requests. Ljósleiðarinn shall accede to all fair and reasonable requests for co-location of the necessary equipment related to services provided through fibre and copper local loops.

2913. Companies that lease access to Ljósleiðarinn networks and facilities, often need to have access to electricity for equipment that they have installed in the leased facilities. With reference to point h in paragraph 2 of Article 48, ECOI imposes the obligation on Ljósleiðarinn to provide lessees with access to electricity and other vital facilities where this can be implemented, whether the lessee in question installs his own meter or not, but this can be decided to a certain extent by circumstances in each individual case.

2914. The obligation to offer sharing or co-location is imposed on Ljósleiðarinn for the facilities the company controls, including in buildings, ducts and conduits and other facilities in the area where the company is deemed to have significant market power on the market in question. The obligation covers fair and reasonable requests for access to Sveitarfélagið Ölfus and does, as stated before, entail a significantly increased financial burden on Ljósleiðarinn.

10.3.2.4 Access to other essential facilities

2915. ECOI considers it necessary to impose the obligation on Ljósleiðarinn to accede to justifiable requests for access to and use of more critical service elements, than those discussed here above, and access seekers may need so that access to those elements named above can be fully utilised in the area in question. The Electronic Communications Act allows for the possibility of obliging a significant market power operator to provide various related services that are necessary for the lessee to have full use of the local access. Various authorisations of this kind can be found in paragraph 2 of Article 48 of the Act.

2916. With reference to points b and f in paragraph 2 of Article 48 of the Electronic Communications Act, ECOI imposes an obligation on Ljósleiðarinn to provide other electronic communications companies with open access to technical interfaces, protocols and other key technologies which are necessary to ensure service functionality.

2917. With reference to point h in paragraph 2 of Article 48 of the Electronic Communications Act, ECOI imposes an obligation on Ljósleiðarinn that the company offer access seekers service that ensures end-to-end operational continuity to users.

2918. With reference to point i in paragraph 2 of Article 48, ECOI imposes an obligation on Ljósleiðarinn to provide access to support to operational systems or analogous software necessary for local loops to be used for the purpose for which they were leased and to ensure competition in offer of electronic communications service. Such access among other things, constitutes the following:

- Operational support
- A database to provide information before an order is made.
- Delivery.
- Orders.
- Maintenance.
- Fault processing.
- Invoicing.

10.3.2.5 Ban on withdrawing access to facilities that has already been granted

2919. As is stated in section 8.2.2.9, there are innovations in point d of paragraph 2 of Article 48 of the Electronic Communications Act to the effect that ECOI can require of an electronic communications company that it does not withdraw access to facilities that has already been granted.

2920. As identified competition problems indicate that Ljósleiðarinn could have the opportunity and incentive in the area where the company has significant market power to deny specific electronic communications companies access to market 3a, or as applicable with provision of bitstream access on market 3a, or to withdraw access that has already been granted, or offer access at an acceptable terms that equate to denial, ECOI considers it necessary to impose on Mila an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in those areas where Ljósleiðarinn is deemed to have significant market power on the relevant market. Ljósleiðarinn shall provide access to ducts and conduits, hosting, local loop lease access to state-supported networks and to the bitstream access that the company already provides in that area where the company is deemed to have significant market power, except if the access seeker in question accepts such a withdrawal. Should Ljósleiðarinn choose to withdraw the bitstream access that the company has provided in the relevant area, then this triggers the access obligation, regardless of whether it is a state supported network or not.

2921. Should a reasoned request come from Ljósleiðarinn for withdrawal of the above specified access, and the access holder does not accept such withdrawal, ECOI can endorse this with a special administrative decision if arguments to support this are stronger than the interests of the relevant access holder for unchanged access. The relevant access seeker will then be a party to such an administrative case and may present his objections. Circumstances that can justify such a request could for example involve changes to system topology, future development of high-capacity networks, lack of space in civil engineering, including ducts and conduits, and/or other fundamental changes to network systems or infrastructure that make such withdrawal necessary.

10.3.2.6 Conclusion on Imposition of obligations on Ljósleiðarinn for access on market 3a

2922. ECOI considers that access to ducts and conduits is on its own not sufficient, as it has not been used much in this country at this point in time, but ECOI considers that it could be important to support fibre roll-out where this is not in place and as appropriate promote infrastructure competition where such is economically feasible. For this reason, ECOI considers important to impose a detailed access obligation on Ljósleiðarinn on the basis of Article 48 of the Electronic Communications Act where the area where the company is deemed to have significant market power covers local loop lease in the case of state-supported fibre networks, at least with regards to the bitstream access that the company has already provided on market 3b in the case of fibre local loops that have not been developed with state aid, access to ducts and conduits, facility lease and access to other vital facilities related to the above specified access options. In the opinion of ECOI it is quite possible for Ljósleiðarinn to provide such access given the capability available at the company. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in the offer of electronic communications services in the area where Ljósleiðarinn has significant market power.

2923. The above means that the ECOI imposes an obligation on Ljósleiðarinn to accede to all normal requests from electronic communications companies for the above-specified access, along with access to related facilities and service in those areas where the company has significant market power on market 3a. A reasonable request for access to a local loop is considered to be a request for a local loop that is not in use for another purpose on that day when new use is planned.

2924. The access that Ljósleiðarinn offers today constitutes bitstream access that is provided in connection points in the Capital City Area. ECOI then imposes an obligation on Ljósleiðarinn to provide local access to its fibre network on the relevant market in the area where Ljósleiðarinn is deemed to have significant market power, in the case of a state funded fibre network, unless the access seeker rather requests bitstream access. In the case of those fibre local loops that Ljósleiðarinn has deployed in the area without state support, Ljósleiðarinn can choose to provide local access or adequate bitstream access.

2925. If Ljósleiðarinn decides to use the above specified authority to provide bitstream access in instances of fibre local loops that have been developed with state aid, Ljósleiðarinn is only authorised to limit access to and provide use of local loops on the basis of fundamental demands that relate to operational security of the electronic communications network in cases of emergency, its system and in proven instances the operational capability of service systems and protection of data.

2926. The obligation to offer sharing or co-location is imposed on Ljósleiðarinn for the facilities the company controls, including in buildings, ducts and conduits and other facilities in the area where the company is deemed to have significant market power on the market in question. The obligation covers fair and reasonable requests for access to Sveitarfélagið Ölfus and does, as stated before, entail a significantly increased financial burden on Ljósleiðarinn.

2927. ECOI imposes an obligation on Ljósleiðarinn that the company shall publish a list of planned civil works with 3 months' notice in those areas where the company is deemed to

have significant market power on the relevant market. In order that the obligation for sharing of civil works be useful for the purpose of enhancing deployment of fibre networks and for encouraging competition in infrastructure, the obligation does not apply in those areas where infrastructure is already in place, cable routes or ducts owned by an electronic communications company other than Ljósleiðarinn that can be used by such parties for deploying fibre in competition with Ljósleiðarinn.

2928. With reference to point i in paragraph 2 of Article 48, ECOI also imposes the obligation on Ljósleiðarinn that the company provide access to support systems, operational systems or analogous software necessary for local loops to be used for the purpose for which they were leased and to ensure competition in offer of electronic communications service.

2929. ECOI finally considers it necessary to impose on Ljósleiðarinn an obligation pursuant to point 2 of paragraph 2 of Article 48 to refrain from withdrawing access to facilities that has already been granted in those areas where Ljósleiðarinn is deemed to have significant market power on the relevant market. Should a reasoned request come from Ljósleiðarinn for withdrawal of the above specified access, and the access holder does not accept such withdrawal, ECOI can endorse this with a special administrative decision if arguments to support this are stronger than the interests of the relevant access holder for unchanged access.

10.3.3 Obligation for non-discrimination on Ljósleiðarinn on market 3a

10.3.3.1 In general, on non-discrimination obligation

2930. According to Article 50 of the Electronic Communications Act, ECOI can impose obligations on electronic communications companies designated with significant market power to practise non-discrimination with respect to interconnection or access. Obligations for non-discrimination shall particularly ensure that companies apply comparable conditions in comparable circumstances vis-à-vis other providers of comparable service and shall provide service and information on the same conditions and quality as they provide for their own service or service to their subsidiaries or partners. Obligations for non-discrimination can constitute a company's duty to provide other companies with services and service related to access, including to themselves, with the same time limits, terms and conditions, among other things, including with regards to those who must be connected and to service level, and to the same systems and with the same procedures, to ensure equal access. The provisions of Article 50 correspond to the provisions of Article 30 of the older legislation but are somewhat more detailed. In the bill that became the electronic communications legislation it is however noted that it is not expected that there will be any fundamental change to the implementation.

2931. There is further discussion on assessment of significant market power in Article 36 of the regulation on market analysis in the field of electronic communications. It states in the provision that obligations for non-discrimination can constitute a company's duty to provide all companies with products and service related to access, including to themselves with the same time limits, terms and conditions, among other things those who must be connected and service level, and with the same systems and procedures, to ensure equal access. This is called the equivalence of input obligation (EoI).

2932. It is furthermore stated that it is likely that such a stringent equivalence obligation could result in higher costs for the company in question than a milder equivalence obligation i.e. equivalence of output (EoO). When imposing obligations, ECOI is obliged to balance these increased costs against more powerful competition that the equivalence of input obligation can bring and to particularly consider whether there is a need for this obligation in those instances where direct obligations are not imposed on the relevant electronic communications company for price control. Specifically, such an obligation could be justifiable, in accordance with proportionality and could return substantial gains, in the case of a new electronic communications network or where the intention is to build such a network, rather than in the case of older networks or systems that may even be on their way out, in order to harmonise them with this stringent non-discrimination obligation. The imposition of such a stringent non-discrimination obligation on networks owned by small electronic communications companies could exceed proportionality and therefore not be justifiable.

2933. It is clear that in order for an obligation for access to return the desired results, the access obligation must be imposed in parallel with an obligation for non-discrimination. The obligation is intended to prevent such a company from discriminating, for example with regard to price and quality of service, i.e. selling less expensive and better wholesale services to some parties than to others. Fair, moderate and justifiable conditions for access, including price are basic issues when striving to strengthen competition. The obligation for non-discrimination does however not mean that all companies are subject to exactly the same conditions but rather that all difference in conditions is based on objective criteria.

2934. Even though companies have been assured local access at the same price, companies with significant market power can try to discriminate on other grounds and in this way increase their costs or part of them in order to cause them problems and even push some of them of out of the market, and thus for example favour priority purchasers. Such practices could for example be in the form of varying quality of service, differing service offers, varying processing of applications, inadequate information (among other things on new service and/or planned distribution networks), unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

2935. ECOI believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions. As an example of varying quality, one could mention discrimination between electronic communications companies with respect to connection time of local loops, for example with an advantage for priority purchasers. Discrimination can also manifest itself in varying prices and/or conditions for access to information systems and in parties being provided access to systems of varying ages and capacity.

2936. The information gained by Ljósleiðarinn from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see among other things Article 42 of the Electronic Communications Act.

2937. ECOI imposes the obligation on Ljósleiðarinn to respect non-discrimination against all electronic communications companies that purchase local access on a fixed line network, regardless of whether it is copper or fibre in those areas where the company is deemed to have significant market power. All purchasers of such service shall, having taken circumstances into account, enjoy the same terms (including those that relate to prices). This also applies to access to Ljósleiðarinn ducts and conduits, hosting and other critical facilities related to market 3a. The non-discrimination obligations furthermore not as detailed on Ljósleiðarinn as it is on Mila, and ECOI does not impose an obligation on Ljósleiðarinn for SLAs, SMGs and KPIs, as on Mila, on the grounds presented in section 10.2 here above.

10.3.3.2 Equivalence of Input non-discrimination in access

2938. ECOI makes the requirements that quality of access provided to each party be no less than that of services provided by Ljósleiðarinn to priority purchasers or parties that have strong commercial ties with the company. ECOI therefore imposes the Equivalence of Input (EoI) obligation on Ljósleiðarinn. ECOI considers that this obligation is more effective for ensuring complete non-discrimination than what is called an Equivalence of Output obligation. Ljósleiðarinn operates as a wholesale company without a retail arm. The company therefore does not have any kind of internal procedures between retail and wholesale operations. It should therefore should not be unnecessarily burdensome for Ljósleiðarinn to work according to equivalence of input, and furthermore, ECOI understands that this is actually practised in the company today.

2939. Equivalence of Input means that Ljósleiðarinn is obliged to offer the same price, use the same service procedures/service systems, the same time limits and to publish the same information about the service (among other things development and distribution information) to all customers. In this way all customers receive access to the same information, the same delivery and ordering service and receive the same treatment within the same time limits. The same applies to notification of faults and their solutions as to other access for the staff of customers to Ljósleiðarinn's information systems which are used for service to end users.

10.3.3.3 Equal access to information, impact on development of product offer and equal service time

2940. Information on local access and service related to access lease facilities and to access to ducts and conduits shall be equally accessible to all electronic communications companies in the area in question in the same manner and at the same time. ECOI considers it particularly important that Ljósleiðarinn does not have the opportunity to discriminate in an irregular manner between customers with respect to innovations on the market. As related retail markets are in continuous development, all parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new, improved and less expensive retail service (for example more capacity in Internet access) at the same time as parties related to Mila.

2941. Ljósleiðarinn shall take care that applications from all electronic communications companies for local access and related services and for access to facility and to ducts and conduits are processed in an equally timely manner. Should there be a problem in processing

an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Ljósleiðarinn is not authorised to make unreasonable demands on applicants as a condition for processing an application.

2942. ECOI imposes the obligation on Ljósleiðarinn that all parties be informed about deployment, development or other development of the company's local loop networks with the same notice and this notice shall not be shorter than three months.

10.3.3.4 Conclusion for non-discrimination on Ljósleiðarinn on market 3a

2943. It is clear that in order for an obligation for access to return the desired results, the access obligation must be imposed in parallel with an obligation for non-discrimination. ECOI believes that the obligation for non-discrimination is also best suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions. ECOI therefore imposes the obligation on Ljósleiðarinn to respect non-discrimination against all electronic communications companies that purchase local access on a fixed line network, in those areas where the company is deemed to have significant market power. All purchasers of such service shall, having taken circumstances into account, enjoy the same terms (including those that relate to prices). This also applies to access to Ljósleiðarinn ducts and conduits, hosting and other critical facilities related to market 3a.

2944. ECOI then makes the requirements that quality of access provided to each party be no less than that of services provided by Ljósleiðarinn to priority purchasers or parties that have strong commercial ties with the company. ECOI Ross imposes on Ljósleiðarinn what is called the Equivalence of Input (EoI) obligation. Equivalence of Input means that Ljósleiðarinn is obliged to offer the same price, use the same service procedures/service systems, the same time limits and to publish the same information about the service (among other things development and distribution information) to all customers.

2945. ECOI finally imposes the obligation on Ljósleiðarinn that all parties be informed about deployment, development or other development of the company's local loop networks with the same notice and this notice shall not be shorter than 3 months.

10.3.4 Obligation for fair and reasonable pricing

2946. It has been stated in the ECOI analysis than in Sveitarfélagið Ölfus where Ljósleiðarinn is deemed to have significant market power, Ljósleiðarinn market share is very substantial and has been on steady increase. Conditions there are also such that parallel coverage of fixed line networks and of two fibre networks is limited. Ljósleiðarinn fibre deployment is significantly greater than that of Mila in the municipality and the most significant factor is that Ljósleiðarinn deployment reaches the rural area where it is very unlikely that parallel networks will be developed. Although this is a wholesale company, there still exists an incentive for the company in such a strong position to maintain excessively high prices. For this reason, ECOI has decided to impose an obligation on Ljósleiðarinn for fair and reasonable pricing on market 3a in the municipality.

2947. There is no further elaboration specified in electronic communications legislation or in the memorandum to the law as to how an NRA shall decide whether a tariff is deemed fair

and reasonable. Nor can one find further elaboration of this obligation in the Code. ECOI makes reference to further discussion on this issue in section 8.3.4.3 here above.

2948. The concept of fair and reasonable pricing has been used in competition law and in other legal texts related to the electronic communications market and one can mention in this respect Act no. 125/2019 on measures for economic development of high-speed electronic communications networks[470] which represents the transposition of the EU Parliament and Council Directive (EU) 2014/61 from 15 May 2014.

2949. Fair and reasonable pricing is a broad concept which is to be interpreted in accordance with electronic communications legislation and with the main principles of competition law. ECOI will therefore take into account the general views and objectives of the Electronic Communications Act, and also the main principles of competition law when deciding whether the Ljósleiðarinn tariff is deemed to be fair and reasonable.

2950. As was stated here above, methods for recouping costs or methods for pricing shall support efficiency and sustainability of competition and shall maximise benefits for end users. It is authorised to take into account the price on offer on comparable competition markets. When deciding a price, allowance shall be made for reasonable profitability from investments, having taken risk into account. Economies from predictability and stable wholesale prices shall also be taken into account.

2951. In the opinion of ECOI, the obligation for fair and reasonable pricing does not mean that ECOI needs to endorse the Ljósleiðarinn tariff before it comes into force on this market.

2952. Ljósleiðarinn will therefore be authorised to decide the wholesale prices that the company collects on this market as before, but with the reservation that the pricing is fair and reasonable. Then ECOI will not intervene in Ljósleiðarinn pricing except in the event of a reasoned complaint from a party to the market or at its own initiative if special circumstances are deemed to justify this. If ECOI comes to the conclusion that the pricing could not be considered fair and reasonable, ECOI will decide price for the service in question which will then apply with respect to the product in question.

2953. In the decision on whether Ljósleiðarinn price is fair and reasonable, ECOI will take into account the specified considerations in electronic communications legislation and also the main principles of competition law. ECOI can among other things take a number of elements into account when deciding whether price is considered fair and reasonable.

1. Whether price for the service has changed abnormally with respect to general price development and that non-discrimination is respected.

2. Whether the price is in accordance with benchmarking with comparative market areas in this country where greater competitive pressure prevails. Average monthly prices for access to local loops will be taken into consideration, in those areas that are

[470] In paragraph 2 of Article 7 of the that act it states: "Having received a written request an operator of networks shall accede to all fair and reasonable requests from electronic communications companies for access to its physical civil engineering, if conditions, including **price, are fair and reasonable**. "

considered comparable, and the Authority is also authorised to take into account start-up charges if they vary.

3. Whether prices in accordance with cost of providing the service on the relevant geographic market in an efficient manner, with the addition of reasonable profitability from investment having taken risk into account.

2954. On the other hand, ECOI will assess each complaint individually and the circumstances that prevail on the relevant market. ECOI considers it normal to first take into account points 1 and 2 before it is decided to embark on detailed and time-consuming analysis of costs of the relevant service. ECOI can decide that a maximum price shall be in accordance with benchmarking or limited to an increase in index while such cost analysis is conducted.

2955. As stated here above, it is specified in electronic communications legislation that the burden of proof for charges being based on real costs, rests on the company in question. ECOI can furthermore require an electronic communications company to prepare a cost model for calculation of prices. ECOI considers it normal that if Ljósleiðarinn asserts that price which is based on benchmarking or is decided on the basis of a rise in index, is lower than the cost to the company on the relevant market, then it is in Mila's hands to prove that this is the case, based on data from the company's bookkeeping. Ljósleiðarinn shall then submit cost analysis in accordance with ECOI requirements. In those cases where Ljósleiðarinn has acquired an electronic communications network by purchasing it or where state support has been used in developing the network, Ljósleiðarinn shall submit a purchase agreement which states purchase price and/or information on public support that was provided. ECOI can require that information from Ljósleiðarinn bookkeeping is broken down for Sveitarfélagið Ölfus, which means that the company is required to use such bookkeeping for the municipality.

2956. In order that ECOI can monitor compliance of the obligation for fair and reasonable tariff, Ljósleiðarinn shall notify ECOI about all tariff changes covered by the obligation.

2957. ECOI does not impose an obligation on Ljósleiðarinn for cost analysed prices for access to ducts and conduits all hosting, as in the case of Mila, on the basis of the arguments presented in section 10.2 here above.

11 Imposition of obligations on Mila on market 3b

11.1 In general, on designating electronic communications companies with significant market power on specific geographic markets

2958. In the following 31 municipalities of 64, ECOI assesses that effective competition prevails on market 3b or that the tendency is towards effective competition during the lifetime of the analysis.

- Akraneskaupstaður
- Árneshreppur
- Ásahreppur
- Bláskógabyggð
- Bolungarvíkurkaupstaður
- Borgarbyggð
- Flóahreppur
- Garðabær
- Grímsnes- og Grafningshreppur
- Grýtubakkahreppur
- Hafnarfjarðarkaupstaður
- Hrunamannahreppur
- Hvalfjarðarsveit
- Hveragerðisbær
- Hörgársveit
- Ísafjarðarbær
- Kjósarhreppur
- Kópavogsbær
- Mosfellsbær
- Mýrdalshreppur
- Rangárþing eystra
- Rangárþing ytra
- Reykjanesbær.
- The City of Reykjavík
- Seltjarnarnesbær
- Skeiða- og Gnúpverjahreppur
- Skorradalshreppur
- Súðavíkurhreppur
- Svalbarðsstrandarhreppur
- Sveitarfélagið Árborg
- Tjörneshreppur

2959. ECOI considers it neither authorised nor necessary to maintain any obligations on market 3b in the above specified municipalities. In the above specified municipalities, obligations have been in force on Mila on the relevant market in prior analyses. The

obligations that have been in force on Mila are now withdrawn, which will come into force 15 days after the date of this decision.

2960. In the following 2 municipalities ECOI considers that Ljósleiðarinn or Austurljós has significant market power on market 3b:

- Fljótsdalshreppur
- Sveitarfélagið Ölfus

2961. In these municipalities where ECOI assesses that Mila does no longer have significant market power, obligations that have been imposed on Mila on the relevant market in prior analyses are withdrawn and they shall no longer be in force 15 days after the date of this decision.

2962. In the following 31 municipalities, ECOI considers that Mila has significant market power on market 3b.

- Akureyrarbær
- Dalabyggð
- Dalvíkurbyggð
- Eyjafjarðarsveit
- Eyja- og Miklaholtshreppur
- Fjallabyggð
- Fjarðabyggð
- Grindavíkurbær
- Grundarfjarðarbær
- Húnabyggð
- Húnaþing vestra
- Kaldrananeshreppur
- Langanesbyggð
- Múlaþing
- Norðurþing
- Reykhólahreppur
- Skaftárhreppur
- Skagabyggð
- Skagafjörður
- Snæfellsbær
- Strandabyggð
- Suðurnesjabær
- Sveitarfélagið Hornafjörður
- Sveitarfélagið Skagaströnd
- Sveitarfélagið Stykkishólmur
- Sveitarfélagið Vogar
- Tálknafjarðarhreppur
- Vestmannaeyjabær
- Vesturbyggð

- Vopnafjarðarhreppur
- Þingeyjarsveit

11.2 Assessment of necessity and grounds for imposition of obligations on Mila on market 3b

2963. With respect to general discussion on obligations and their imposition, reference is made to section 8.2.1 on assessment and grounds for imposition of obligations on Mila on market 3a, which is referenced here. It is necessary to repeat that text here and the same considerations apply with respect to imposition of obligations on markets 3a and 3b.

2964. There are thus many considerations to keep in mind when forming and elaborating obligations. Obligations need to be at once necessary, justifiable, transparent, supported by arguments, in accordance with the nature of the defined competition problem, also to be designed to resolve this in accordance with those objectives that they are intended to achieve (i.e. to strengthen competition, support deployment of high-capacity networks, and create benefits for consumers), support Investments in high-capacity networks and to be in accordance with proportionality. When assessing proportionality, it may be necessary to evaluate the effectiveness of the obligations in question on the basis of cost and gain. In all of these evaluations it is appropriate to endeavour to assess what is likely to happen if the obligation in question (or all of them) are not imposed.

2965. In accordance with the principle of proportionality it is normal to assess the necessity to impose those obligations on Mila that are elaborated in section 11.3 and in its relevant subsections later in this document. As previously stated, ECOI must choose the method that causes least disruption, for the purpose of dealing with the identified problem, see paragraph 2 of Article 46 of the Electronic Communications Act. In the opinion of ECOI, the obligations imposed on Mila are conducive to achieving the objectives of the Electronic Communications Act no. 70/2022 for effective competition and economic electronic communications and furthermore to support further deployment of fibre networks on Mila on in this country, and to creating advantages for consumers. In section 7.5.2 and 7.5.3 here above, a large number of potential and existing competition problems on markets 3a and 3b have been described. In order to tackle the problems identified there, ECOI shall impose obligations on companies with significant market power pursuant to Articles 47-52, 55 and 59 of the Electronic Communications Act, where appropriate.

2966. The provisions of Article 47 prescribe on access to civil engineering, Article 48 on access to networks and service, Article 49 on transparency, Article 50 on non-discrimination, Article 51 on separation of accountancy, Article 52 on price control, Article 55 on new high-performance high-speed networks and Article 59 on wholesale-only companies. In paragraph 2 of Article 59 it states that if ECOI comes the conclusion that the provisions of paragraph 1 of Article 59 are fulfilled, the Authority can only impose on such a company an access obligation pursuant to Article 48 of the act and a non-discrimination obligation pursuant to Article 50 of the act and on fair and reasonable pricing, if this is considered justifiable on the basis of market analysis.

2967. In this chapter it will be argued why ECOI considers it necessary to impose various obligations on Mila in the municipalities in question and that they are in accordance with the views expressed in the above specified paragraph 4 of Article 30 of the regulation. Further arguments and discussion can also be found in the relevant subsections of section 11.3 and one can also find in section 8.2.2 detailed arguments for why ECOI considers that obligations that were imposed on Mila with the CA settlement on 15 September 2022 do not suffice on their own.

2968. In the ECOI examination of the relevant market the Administration has come to the conclusion that no other measures can be found that could be as effective in solving the competition problems that exist on the market and that relate to Mila in those municipalities where the company is considered to have significant market power on the relevant market. ECOI furthermore considers that the obligations are in accordance with proportionality.

2969. In the light of the potential and real competition problems that can occur and of the strong Mila position on the relevant market in those municipalities where the company is deemed to enjoy significant market power on the relevant market, ECOI considers it necessary to impose obligations on the company for access, non-discrimination, and price control in the form of fair and reasonable tariff. ECOI will on the other hand not maintain obligations on Mila for transparency, separation of accountancy or for cost accounting of analysed prices. It is therefore clear that Mila is being relieved of all obligations on market 3b in municipalities where up to 80% of the country's inhabitants live, and in addition to this, that there is a very significant relaxation of obligations in those municipalities, where Mila will still have significant market power.

2970. With respect to the access obligation, ECOI imposes an obligation on Míla to accede to all normal and reasonable requests from other electronic communications companies for central access, see definition of service market 3b. Access in question here is on the one hand, access to bitstream which goes through the upper frequency range of copper local loops and on the other hand, access to bitstream through fibre local loops. ECOI considers this obligation necessary, among other things because for smaller electronic communications companies, bitstream access is very important, as many of these companies use Access Option 3 with Mila to be able to offer service across the whole country. The companies can also utilise local access at many locations across the country with Access Option 1 with Mila and can lease transfer to their operational base. Such access is therefore necessary to strengthen competition in service. There could also have become a need for Access Option 4 again.

2971. In addition to the obligation to provide separate access in the form of bitstream access, the obligations is imposed on Mila with reference to points g, j, and h in paragraph 2 of Article 48 of the Electronic Communications Act, to provide at wholesale terms, hosting of equipment of other electronic communications companies and access to other facilities necessary for bitstream access to be fully used and to serve the intended purpose, including connections from Mila connection point to the connection points of wholesale purchasers and related equipment. Reference is made to further discussion on this issue in section 11.3.2 here below.

2972. Access to ducts and conduits belongs to market 3a, while lease of facilities belongs to both market 3a and 3b. With respect to evaluation of the necessity and grounds for imposition

of obligations for access to facility lease from Mila on market 3b, reference is made to section 8.2.1 here above, where comparable considerations apply on this issue to both markets.

2973. In addition to the above specified obligation for access to lease of facilities, ECOI considers it necessary to maintain the access obligation on Mila in the areas in question with respect to central access (bitstream) access to copper and fibre local loops over those networks and access to other vital facilities. With respect to further arguments for this, reference is made to section 11.3.2. These are not new obligations - except to the extent that Access Option 4 is added again, which rested on the Siminn Group between the years 2008-2014 - but existing obligations are being maintained while they will however only apply in the municipalities in question. ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve and that they are not in excess of proportionality. ECOI considers the obligations particularly necessary to ensure competition in service between retailers in the areas in question, as at most locations, Mila is the only or at least by far the largest network operator in the relevant areas. ECOI considers that obligations do not prevent investments in high-capacity networks in the relevant areas, but where infrastructure competition develops over time, it would be possible to withdraw such access obligations.

2974. In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in those areas where Míla is considered to have significant market power, unless an access obligation continues to be imposed on Mila bitstream system, with respect to access to such systems, for the benefit of consumers.

2975. The obligation for wholesale access on the relevant wholesale markets is a prerequisite for competition to become active in related retail markets such as on the broadband market Internet and voice telephony market (VoIP) and for TV distribution (IPTV). It is not possible to solve the competition problems described here above in any other way than by imposing the obligation for access. Access barriers make it difficult for Mila competitors and customers to develop extensive local loop networks with national coverage and it is thus a prerequisite for effective competition on downstream markets that they can receive access to the Mila bitstream systems in these areas.

2976. ECOI considers the obligation for access to be an insignificant burden on Mila, but it is an essential prerequisite for effective competition on related retail markets. It is in fact necessary for electronic communications companies to gain access to the Mila bitstream systems in order to be able to offer their customers adequate services in the areas in question. The obligation should first and foremost ensure that Mila does not discriminate in making bitstream agreements, for example by favouring a priority buyer and does not delay the entry of new companies by delaying contract negotiations. It cannot be considered burdensome to deal with all counterparties for bitstream access in a satisfactory manner, and in addition to this the company has borne such an obligation for a long time. With a connection with the Míla bitstream network the companies gain better use of the electronic communications equipment in which they have invested.

2977. With respect to Access Option 4, that applied to the Siminn Group in the years 2008-2014, and which was withdrawn in the year 2014 because of a lack of use, ECOI considers it now necessary to add it to the Mila access obligation for bitstream access. As Mila has taken over the Siminn AS and IP numbers and provides interconnections and connection points to the Internet both in this country and through the international gateway, Mila produces fully finished Internet service that Siminn then resells. This has resulted in an awakening of supply and demand for such a product and ECOI considers it necessary in the light of competition issues, among other things in connection with the transfer of market power, bundling of wholesale service and the expansive economy of scope of Mila that was discussed in section 7.5.3.3, to include this new access option.

2978. With Access Option 4, retailers are enabled to access fully ready Internet access for resale, the same as is available to Siminn. Mila took over the technical operations needed to provide this service from Siminn some time ago, so there is now considerable experience of this within the company, which Mila operates for Siminn. ECOI therefore assesses that the obligation is not burdensome for Mila and thus not in excess of proportionality. The potential gain for consumers from more varied retail competition is greater, than the cost or inconvenience for Mila for this access option. As such an access option will be sold to those access seekers that so request at fair and reasonable rates, it will not result in a burdensome cost for Mila.

2979. ECOI also considers it necessary to make arrangements such that Mila will not retract bitstream access that the company has provided on networks where the company has acquired local loop access to dark fibre, while Siminn does not provide service over bitstream systems from such parties, so that customers of all service providers will continue to have a choice of underlying electronic communications network as the Mila fibre roll-out progresses. ECOI imposed this obligation on Mila with the ECOI Decision no. 5/2021 and it is therefore in force vis-à-vis Mila and thus not a new obligation. ECOI assessed whether there was still a need for this obligation after Siminn sold Mila in the autumn of 2022. It is the ECOI assessment that this is the case, as significant characteristics of vertical integration are still manifest between Mila and Siminn because of a long-term agreement between the companies, where among other things there is provision to the effect that Mila shall be the Siminn priority supplier for 80% of Siminn bitstream needs. In addition to this there is nothing to indicate that Siminn plans to make an agreement for bitstream access to the Tengir fibre network, in the near future at least. This competition problem is described in detail in section 7.5.3.3 here above, and reference is made to that.

2980. EC also considers that the obligation for continued bitstream access with Mila on networks where the company has received bitstream access, to be in addition, justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems and in accordance with those objectives that the obligation is intended to achieve and to be not in excess of proportionality. With respect to proportionality, it can be considered excessively burdensome formula to refrain from retracting such access. To prevent such parties from being able to increase the charges that Mila needs to pay for such access in an abnormal manner, Mila can refer the question to ECOI about whether their charges or conditions are fair and normal. ECOI decides such a matter with a decision. If ECOI considers price or other conditions set by the parties in question to be abnormal, Mila is free of this obligation, should they not comply with the ECOI decision.

Furthermore, if Siminn (a Mila priority purchaser) makes an agreement with such parties. In the opinion of ECOI it is thus clear that gains from this obligation are much greater than its cost or its resulting inconvenience for Mila.

2981. With respect to the non-discrimination obligation, ECOI considers it necessary to maintain the obligation on Mila, but now only in those areas where Mila has significant market power. These are continuation of the equality of input obligation (EoI) obligation for equal access to information, impact on development of product offer, equal delivery time, obligation for making service level agreements, service level guarantees and obligation for measuring and publishing of key performance indicators (KPIs). ECOI will however no longer require that Mila publish openly the service level agreements that the company has made or will make with electronic communications companies. This therefore represents a certain relaxation of the obligations in question in those areas where the obligations will apply. ECOI furthermore considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as is further argued here below in section 11.3.3 and its subsections.

2982. The obligation for non-discrimination with respect to access to Mila bitstream systems in wholesale, and to related facilities, is necessary for companies, whether on the relevant market or related markets, to be able to compete on a level playing field between themselves and with Míla. The obligation should mean that all electronic communications companies that purchase access to Míla systems receive comparable services and prices and in this way the competition problems related to discrimination will be solved.

2983. ECOI considers that the obligation for non-discrimination is not particularly burdensome, but it is already imposed on Mila in a much larger area than is prescribed in this market analysis, i.e. the whole country. The obligation should lead to all companies leasing access to Mila bitstream systems receiving comparable services and should be instrumental in resolving the competition problems described in Section 7.5.3 with respect to issues such as speed of reply, price, quality etc., that can give Míla a competitive advantage on the relevant and or as appropriate on adjacent market 3a, and that can give specific retail companies, for example priority purchasers with Mila, an advantage on related retail markets.

2984. Mila shall also make service level agreements (SLAs), declarations of quality assurance (SLGs) and shall publish key performance indicators (KPIs), but the requirements are relaxed on Mila having to publish a declaration of quality assurance which the company has made or will make with an electronic communications company. These obligations were new in 2014 and were retained with ECOI Decision no. 5/2021. They required considerable work for Mila during the initial years, but ECOI considers that the elements in question had been necessary to support increased non-discrimination and that they remain so in those areas where Mila has significant market power on market 3b. In the opinion of ECOI, it is not significantly burdensome for Mila to maintain the systems that were built to fulfil these obligations. For further grounds for these obligations on Mila, one can refer to the detailed arguments in this respect in section 8.2 here above that relate to this obligation on market 3a, and ECOI believes that the same ground supply to market 3b in the case of Mila.

2985. ECOI considers that if this non-discrimination obligation were not in place, then a negative competition situation in the relevant areas could become even worse on the relevant wholesale market and/or related retail market. ECOI also believes that the gains from this obligation are significantly greater than Mila costs in maintaining it, as it has been pointed out here above most of the costs with this obligation are already in place.

2986. With respect to the obligation on price control, this represents a significant relaxation with respect to the Mila copper network, but also represents a slightly greater burden with respect to the fibre network. In addition to this, all obligations including price control, were lifted from Mila on the relevant market in areas where about 80% of the population lives, and now there will only be a requirement for fair and reasonable pricing of Mila bitstream lease on the company's copper network, whereas up to this point in time an obligation had rested on the company for cost analysed prices across the whole country for the company's copper network. On the other hand, an obligation for fair and reasonable pricing will now also apply to Mila bitstream lease on fibre networks in these areas, as in the case of Ljósleiðarinn on the relevant market.

2987. ECOI considers it necessary to impose this obligation for price control on Mila in the areas in question on the relevant market. ECOI furthermore considers the obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as will be further argued here below and in section 11.3.4. With respect to proportionality one can point out that the obligation for fair and reasonable pricing is much less stringent and costly for Mila than the obligation for cost analysed prices which has been imposed on the Mila copper network for many years with the attendant cost analyses.

2988. ECOI considers that Mila has the possibility and the incentive to apply excessive pricing [471] in those areas where Mila is deemed to have significant market power on the relevant market. These areas are characterised by little or no competitive pressure and retailers and thus consumers have a little possibility of using comparable electronic communications service from other network operators. ECOI therefore considers it necessary to impose an obligation for price control on Mila. In the light of the severance that took place in the ownership ties between Mila and Siminn, ECOI considers it however on the other hand appropriate to apply less stringent measures with respect to price control on the Mila tariff on the relevant market 3b than those which currently apply to the company with respect to bitstream through copper network, and it is the ECOI conclusion that the Mila tariff for such local bitstream shall be fair and reasonable in those geographic markets where ECOI deems Mila to have significant market power. The same will apply to Mila local bitstream on the fibre network, but there are no price obligations currently in force on this.

2989. With regards to the obligation for fair and reasonable pricing, it is clear that this is a much less burdensome obligation than an obligation for cost analysed prices. As the Mila

[471] Excessive pricing is an antitrust violation that exists in most OECD countries and particularly in EU competition law where a dominant firm charges a price that is excessive relative to an appropriate competitive benchmark in a way that deems it unfair.

position is extremely strong in those areas where Mila is deemed to have significant market power on the relevant market, and even in some instances there is monopoly, ECOI considers it injudicious not to prescribe any monitoring of Mila tariff in the areas in question. The above specified obligation should ensure that Míla cannot apply excessive pricing in the areas in question, to the detriment of access seekers and thus consumers. For this reason, ECOI considers it necessary and justifiable to add such an obligation. With respect to such an obligation, Míla has much greater freedom in pricing than it had in the case of copper local loops, and prior endorsement from ECOI was no longer required for price changes. It is not certain that the obligation will be tested, but this will only happen if a complaint is received on excessive pricing or in special circumstances at the initiative of ECOI for example if there was a significant price increase or prices developed significantly in excess of general price development. It should not necessarily require intervention from ECOI for the price of providing a service to be taken into account when deciding the tariff, as account should rather be taken of general price development and/or benchmarking should ECOI become involved.

2990. ECOI considers that the obligation on fair and reasonable pricing on Mila bitstream access to fibre networks in the relevant areas where the company has significant market power on the relevant market, will not hinder the company's continued fibre roll-out or investments in this area, or other areas, or the installation of bitstream systems on such fibre networks. As previously stated, this obligation is much milder than an obligation on price control. In the opinion of ECOI, the regulatory holiday that Mila has had for years, with respect to pricing for the company's fibre products on markets 3a and 3b has provided good results in development of high-speed access networks and bitstream systems, up to this point in time, given the above specified competition problems existing in these area where Mila is deemed to have significant market power, but better competition needs to be ensured on the relevant wholesale markets and the downstream retail markets in the relevant areas, regardless of whether they are on copper or fibre networks. A comparable obligation will be imposed on Ljósleiðarinn on all the relevant markets and on Tengir on market 3a.

2991. As this obligation is not more burdensome Mila than that which is currently in force it should be clear that the benefits for parties to the market are substantial and that there are major gains from retailers and thus for consumers, as it should prevent the possibility of excessive pricing in areas where little or even no effective competition prevails.

11.3 Imposition of obligations on Mila on market 3b

11.3.1 General

2992. ECOI imposes the same obligations on Mila in all the above specified 31 municipalities, see section 11.1 where Mila is deemed to have significant market power.

11.3.2 Obligation to provide access

2993. Reference is made to section 8.3.2 on legislation currently in force and on ECOI authority for imposition of access obligations subsequent to market analysis and for designation of parties as having significant market power on the relevant markets.

2994. The Mila strong position on the wholesale market for central access to fixed line networks, particularly in specific areas, results in certain entry barriers to the relevant market. The development of a new bitstream system in the relevant areas requires major investment and it is the opinion of ECOI that it will not be easy to embark on development of such a system and that the development of other systems will be directed at specific areas close to the operating premises of the service providers. This particularly applies to sparsely populated rural areas. Those service providers now operating in bitstream systems, all have less deployment than that which Mila service accounts for, though their deployment varies significantly. In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in those areas where Míla. has been deemed to have a dominant market position, unless an access obligation is imposed on Mila bitstream system, with respect to access to such systems. ECOI considers that consumer interests will be improved with increased access, as that would give more companies the option of providing Internet service and other related retail service.

2995. ECOI has assessed whether the access requirement is technologically and financially realistic and whether it would be realistic for a competitor to set up his own infrastructure in competition, considering market developments and the nature of the access in question. In the light of experience, ECOI considers it quite feasible for Mila to grant the access that is proposed and furthermore it considers it justifiable with respect to the initial investment by Míla. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in service offers. With the imposition of obligations ECOI has taken into account other obligations that rest on company. Furthermore, the obligations planned to be imposed on Mila for the wholesale market for local access (market 3a). In the opinion of ECOI, it is not sufficient to only impose access obligations on market 3a as it is too costly for purchasers of wholesale access to set up their own bitstream system, and as most retailers choose to lease bitstream access rather than local loop access. Experience has shown in recent years, that there is more demand for central wholesale access than for local access.

2996. ECOI imposes an obligation on Míla to accede to all normal and reasonable requests from other electronic communications companies for central access, see definition of service market 3b. The access in question is on the one hand access to bitstream which is through the upper frequency range of copper local loops, and on the other hand access to bitstream through fibre local loops for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, including VoIP and IPTV television distribution. Included here are copper local loops with the DSL equipment and bitstream access over fibre.

2997. Bitstream access shall be offered with the following quality definitions:

- First, access that uses significant bandwidth but without any quality definition (best effort) for general Internet service;
- Second, access that uses little bandwidth but makes high-quality requirements for fixed telephony services over IP (VoIP);

- Third, access that uses large bandwidth and makes high-quality requirements for TV distribution and video over IP (IPTV, VoD) where among other things multicast[472] technology is used and the appropriate communication protocols.

2998. The kinds of access mentioned here are first and foremost indicative and neither exhaustive nor do they exclude that other methods may be offered. ECOI considers that the pricing of each access service over bitstream shall depend on the bandwidth load that it entails and the quality requirements that it needs to fulfil.

2999. In addition to traditional Internet service one can in this respect mention IPTV service which among other things uses IGMPv2[473] communication protocols for transmission of TV programmes and RTSP[474] for viewing video on demand (VoD). We shall also accede to requests for access to bitstream service that fulfils normal and reasonable requirements for another kind of communication protocol, quality control and performance guarantee, should a request for such access be made that fulfils those conditions.

3000. Míla should also, if this is requested, handle the sending of bitstream through its backbone network to a location where the electronic communications company in question has a connection with the Míla network. Electronic communications companies shall have the possibility to deliver bitstream at various locations in the network and shall have the option of changing possibilities for delivery as required:

1. In DSLAM or equivalent equipment at the place where the copper local loops connect to the telephone exchange distribution frame and/or telephone exchange fibre distribution frame, street cabinet or other equipment space. (Access Option 1)
2. After transit in the Míla trunk line network, i.e. where Míla handles transit of signals from DSLAM and/or fibre distribution frame to the connection point of another electronic communications company with the trunk line network. (Access Option 2)
3. After transmission on the Míla network to a central connection point of another electronic communications company to the latter network. (Access Option 3)
4. Access to Internet for resale. (Access Option 4)

3001. When elaborating this access option, ECOI considers it normal to take the efficiency point of view into account. In the case of Access Option 1 it could for example prove economic to provide access from some kind of node point where connections from many street cabinets /connection points were collected together. Such an implementation could thus have the characteristics of varying Access Options, for example it could be at a level which one could consider to be between Access Options 1 and 2.

[472] In data transmission through electronic communications networks, multicast is used to transmit data streams where data is sent simultaneously to many users with one transmission from source. The data is multiplied at node points in the network so that for each segment of the network the data only transmits in one copy. The copies are created automatically in network equipment such as network routers but only if the recipients on the network segment in question have requested to receive the stream.
[473] http://www.ietf.org/rfc/rfc2236.txt
[474] http://www.ietf.org/rfc/rfc2326.txt

3002. In addition to the obligation to provide separate access in the form of bitstream access, the obligations is imposed on Mila with reference to points g, j, and h in paragraph 2 of Article 48 of the Electronic Communications Act, to provide at wholesale terms, hosting of equipment of other electronic communications companies and access to other facilities necessary for bitstream access to be fully used and to serve the intended purpose, including connections from Mila connection point to the connection points of wholesale purchasers and related equipment.

3003. Pursuant to item i in paragraph 2 of Article 48 of the Electronic Communications Act, it may be required that a company with significant market power offers access to operations systems or analogous software in order to ensure competition in the offer of service it may be required that an electronic communications company with significant market power provide access to other critical facilities. With reference to these authorisations, ECOI obliges Mila to provide access to support systems and information necessary the purchaser's utilisation of bitstream access. Such access can among other things be:

a) Operational support
b) Database to gather information before an order is made.
c) Delivery.
d) Orders.
e) Maintenance.
f) Handling of faults.
g) Invoicing.

3004. In Section 7.5.3 here above, competition problems related to the relevant market are explained. There, and in section 6 with regards to designation of an electronic communications company as having significant market power, is stated among other things that the Mila position is very strong on the relevant market and on the related market 3a, particularly in specific areas. The Mila position is furthermore very strong on terminating segments of leased lines in this country across the whole country. The Siminn position is furthermore extremely strong on downstream retail markets for broadband service. Siminn has up to this point in time, in most instances only used the Mila bitstream system on the residential market[475] where the characteristics of vertical integration between the companies are still manifest because of the wide-reaching long-term service agreement between the companies.

3005. Mila has leased fibre local loops from Tengir in North Iceland connected its bitstream equipment on them, in addition to deploying a parallel fibre network. The same can be said about most small countryside networks, the majority of which have been deployed with state aid, i.e. those that Mila has not already purchased. As by far the largest retailer in the country, Siminn, has up to this point in time not provided service on bitstream systems of parties other

[475] In July 2020, Siminn made an agreement with GR on bitstream access to the GR fibre network. Síminn began offering its service on the GR network at the end of August 2021.

than Mila on the residential market[476], as do more service providers at some locations that use the Mila bitstream system, ECOI considers it important that Mila should not withdraw that equipment and that service while such a situation pertains.

3006. ECOI therefore imposes on Mila the obligation to not withdraw its bitstream equipment or service from the fibre networks of other network operators than Mila, from whom Mila has leased dark fibre against the wishes of the network operators in question, while Siminn does not provide service over bitstream systems of such operators. Such an obligation is for the benefit of competition on the relevant market and related markets and is conducive to maintaining or increasing options for service providers and consumers with respect to the choice of underlying electronic communications network. To prevent such parties from being able to increase the charges that Mila needs to pay for such access in an abnormal manner, Mila can refer the question to ECOI about whether their charges or conditions are fair and normal. ECOI decides such a matter with a decision. If ECOI considers price or other conditions set by the parties in question to be abnormal, Mila is free of this obligation, should they not comply with ECOI decision. ECOI then reminds that Mila is also free of this obligation, if Siminn makes an agreement with the parties in question for bitstream access to the fibre networks of the parties in question.

3007. As Mila has taken over the Siminn AS number and IP addresses and provides interconnections and connection points to the Internet both in this country and through the international gateway, Mila produces fully finished Internet service that Siminn then resells. This has led to an awakening of supply and demand for such a product, and ECOI considers it necessary in the light of competition problems, among other things because of related transfer of market power, bundling of wholesale service and economy of scope dealt with in section 7.5.3.3, to add again an access option, Access Option 4, to those obligations imposed on Mila for providing bitstream service. With Access Option 4, retailers are enabled to access fully ready Internet access for resale, the same as is available to Siminn. This obligation was imposed on the Siminn Group in 2008, but because of lack of use was withdrawn in 2014. In the opinion of ECOI it is now again needed.

3008. Applications sent electronically for bitstream access and related facilities shall be processed by Míla as quickly as possible. Míla is unauthorised to give a specific company or companies, priority in handling at the cost of other electronic communications companies. Denial of access shall be sent electronically and shall contain grounds for the decision. The grounds must contain all information required to enable assessment of the justification of the denial. Applications for access shall have equal to the Míla service system for the purpose of tracking their applications and also for information on maintenance and repair of local loops and on invoicing.

3009. Those obligations that now rest on Mila for access to the company's bitstream systems shall not cease to apply even if Míla changes the structure of its systems, except when agreement has been reached on the migration process and the party leasing the access is thus prepared to receive a new kind of access instead of the older one when the migration has

[476] In July 2020, Siminn made an agreement with GR on bitstream access to the GR fibre network. Síminn began offering its service on the GR network at the end of August 2021. For some considerable time, Tengir has endeavoured to have Siminn lease bitstream access to the Tengir fibre network, but without success. During process of the market analysis [...].

taken place. Should such an agreement not be reached then Míla shall inform parties to the market of all changes to the arrangements of bitstream access that are likely to alter companies' competitiveness on the market with 2 years' notice.[477] Exceptions may be made from the above period of notice on receipt of advance endorsement by ECOI. If such an exemption is considered normal and reasonable, ECOI will open consultation with stakeholders. If no objections are raised and stakeholders have access to substitute products, and do not suffer any unnecessary damage when migrating between systems, ECOI will endorse such an exemption.

3010. Should Mila make changes to its systems it is important that:

- System downtime should be at a minimum for those wholesale customers operating on the relevant market segment.
- Costs resulting from the migration should not be so great as to act as an entry barrier to what results from the migration.
- An integrated process for migrating all parties should be in place with care taken to ensure non-discrimination between all parties on the market.
- The time taken for migration should be at a minimum given the type and scope of the application.
- There should be a service agreement and a list of key performance criteria to ensure the efficiency of the migration procedure, unless there are indications that such is unnecessary or is not cost-effective.

11.3.2.1 Conclusion for non-discrimination on Míla on market 3b

3011. It has been stated that the Mila position is extremely strong on the relevant market and on adjacent market 3a, particularly in specific areas. The Mila position is furthermore very strong on terminating segments of leased lines in this country across the whole country. The Siminn position is furthermore extremely strong on downstream retail markets for broadband service. Siminn has up to this point in time, in most instances only used the Mila bitstream system on the residential market where the characteristics of vertical integration between the companies are still manifest because of the wide-reaching long-term service agreement between the companies.

3012. The strong Mila position causes both potential and real competition problems on the relevant market, but in the opinion of ECOI, access barriers on the wholesale market for central access to fixed line networks will continue to characterise the market in those areas where Mila has significant market power, unless an access obligation is imposed on the Mila bitstream system. ECOI considers that consumer interests will be improved with increased access, as that would give more companies the option of providing Internet service and other related retail service.

3013. ECOI therefore imposes an obligation on Míla to accede to all normal and reasonable requests from other electronic communications companies for central access, see definition

[477] Commission Recommendations of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) page 43.

of service market 3b. The access in question is on the one hand access to bitstream which is through the upper frequency range of copper local loops, and on the other hand access to bitstream through fibre local loops for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, including VoIP and IPTV television distribution. Included here are copper local loops with the DSL equipment and bitstream access over fibre.

3014. When elaborating this access option, ECOI considers it normal to take the efficiency point of view into account. In the case of Access Option 1 it could for example prove economic to provide access from some kind of node point where connections from many street cabinets point were collected together. Such an implementation could thus have the characteristics of varying Access Options, for example it could be at a level which one could consider to be between Access Options 1 and 2.

3015. In addition to traditional Internet service one can in this respect mention IPTV service which among other things uses IGMPv2 communication protocols for transmission of TV programmes and RTSP for viewing video on demand (VoD). We shall also accede to requests for access to bitstream service that fulfils normal and reasonable requirements for another kind of communication protocol, quality control and performance guarantee, should a request for such access be made that fulfils those conditions. Míla should also, if this is requested, handle the sending of bitstream through its backbone network to a location where the electronic communications company in question has a connection with the Míla network.

3016. In addition to the obligation to provide separate access in the form of bitstream access, the obligations is imposed on Mila with reference to points g, j, and h in paragraph 2 of Article 48 of the Electronic Communications Act, to provide at wholesale terms, hosting of equipment of other electronic communications companies and access to other facilities necessary for bitstream access to be fully used and to serve the intended purpose, including connections from Mila connection point to the connection points of wholesale purchasers and related equipment.

3017. ECOI also requires Mila to provide access to support systems and information that is necessary for the bitstream access to be used by the purchaser pursuant to point i of paragraph 2 of Article 48 of the Electronic Communications Act.

3018. Mila has leased fibre local loops from Tengir in North Iceland and connected its bitstream equipment on them, in addition to deploying a parallel fibre network. The same can be said of most of the small countryside networks but have in most instances been deployed with state aid. As by far the largest retailer in the country, Siminn, has up to this point in time generally not provided service on bitstream systems of parties other than Mila on the residential market, except through Ljósleiðarinn in a limited amount, ECOI considers it important that Mila should not withdraw that equipment and that service while such a situation pertains. ECOI therefore imposes on Mila the obligation to not withdraw its bitstream equipment or service from the fibre networks of other network operators than Mila, from whom Mila has leased dark fibre against the wishes of the network operators in question, while Siminn does not provide service over bitstream systems of such operators. To prevent such parties from being able to increase the charges that Mila needs to pay for such

access in an abnormal manner, Mila can refer the question to ECOI about whether their charges or conditions are fair and normal.

3019. ECOI also considers it necessary in the light of competition problems, among other things because of related transfer of market power, bundling of wholesale service and economy of scope dealt with in section 7.5.3.3, to add again an access option, Access Option 4, to those obligations imposed on Mila for providing bitstream service. With Access Option 4, retailers are enabled to access fully ready Internet access for resale, the same as is available to Siminn.

3020. Those obligations that now rest on Mila for access to the company's bitstream systems shall not cease to apply even if Míla changes the structure of its systems, except when agreement has been reached on the migration process and the party leasing the access is thus prepared to receive a new kind of access instead of the older one when the migration has taken place. Should such an agreement not be reached then Míla shall inform parties to the market of all changes to the arrangements of bitstream access that are likely to alter companies' competitiveness on the market with 2 years' notice. Exceptions may be made from the above period of notice on receipt of advance endorsement by ECOI.

11.3.3 Obligation for non-discrimination

11.3.3.1 In general, on non-discrimination obligation

3021. With respect to the obligation for non-discrimination and the need for imposing this obligation in those areas where Mila is deemed to have significant market power, reference is made to section 8.3.3.1 on the non-discrimination obligation, which is imposed on Mila for market 3a, and the same considerations apply to market 3b.

3022. Even though companies have been assured bitstream access at the same price, companies with significant market power can try to discriminate on other grounds and in this way increase their costs or part of them in order to cause them problems and even push some of them of out of the market, and thus for example favour priority purchasers. Such practices could for example be in the form of varying quality of service, differing service offers, varying processing of applications, inadequate information (among other things on new service and/or planned distribution networks), unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

3023. ECOI believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions. As an example of varying quality, one could mention discrimination between electronic communications companies with respect to connection time of local loops, for example with an advantage for priority purchasers. Discrimination can also manifest itself in varying prices and/or conditions for access to information systems and in parties being provided access to systems of varying ages and capacity.

3024. The information gained by Mila from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and

shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see among other things Article 42 of the Electronic Communications Act.

3025. ECOI intends to maintain the obligation on Mila to respect non-discrimination against all electronic communications companies that purchase bitstream access on a fixed line network, regardless of whether it is copper or fibre in those areas where the company is deemed to have significant market power. All purchasers of such service shall, having taken circumstances into account, use the same conditions (including prices) that apply for related parties or for those cooperating with Mila.

3026. In section 8.2.2 here above, there was discussion on the obligations that rest on Mila pursuant to the settlement between CA and Mila dated 15 September 2022, where the conclusion was reached that obligations imposed on Mila in that settlement do not suffice to resolve the competition problems identified in this market analysis.

3027. Market 3b is defined in the ESA Recommendation on the relevant market from 2016. It is specifically stated in the Recommendation that the relevant market fulfils general conditions for the need to apply specific obligations pursuant to Electronic Communications Act in order to encourage increased competition and that national and European regulatory framework on competition alone are not sufficient to address the competition problems identified. At those locations where access to local loops is not accessible, it is particularly important that bitstream access is provided.

3028. The conditions of the settlement were never conceived to replace ECOI ex-ante regulation. One can see this position reflected in paragraph 12 of the conditions of the statement where it was stated that the settlement has no impact on the jurisdiction of ECOI pursuant to Act no. 75/2021 regarding those issues covered by the Electronic Communications Act no. 70/2022 and derived rules or decisions on the basis of electronic communications legislation, such as imposed obligations resulting from market analysis and significant market power.

3029. Conditions that CA may make for endorsement in merger cases can be of another nature or vary from those obligations that ECOI imposes on electronic communications companies on the basis of market analysis, where there are for example obligations for access and non-discrimination imposed on Mila on the basis of the Electronic Communications Act and which are elaborated in a more detailed manner than analogous conditions set by CA. In addition to this there is a certain material difference in how the two administrations conduct their monitoring.

3030. In the CA Decision in case no. 24/2023, a position was taken among other things on the impact of changes to the market after the sale of Mila to Ardian and that a settlement with CA came into force. In the decision it states that SE endorsement of Ardian purchase of Mila, on the basis of conditions relating to changes of the wholesale agreement between Siminn and Mila on the infrastructure market, does not automatically lead to the conclusion that there is no reason to protect competition on markets on which Siminn operates subsequent to the sale. One can assume that the same applies to Mila as in the decision the conclusion was also reached that continued strong common interests exist between the companies which have by the nature of things an impact on those markets on which the companies

operate. Is therefore not possible to assert that competition problems that derived from the merger have been fully resolved with the settlement in those markets here in question.

3031. It is therefore important to take into account that the above specified CA settlement with Mila can be subject to change or that the settlement will be rescinded, as such authority for revision is prescribed in Article 11 of the settlement. It is stated among other things that having received a submission from Mila, CA shall take a reasoned position on whether it is necessary to maintain any condition whatever in the settlement. CA shall make the decision on the submission within 115 working days from the time it was received. If CA makes no decision within this period of notice, the submission is deemed to be endorsed and the relevant condition is rescinded. When evaluating a request, a position shall be taken on whether significant changes have taken place on the relevant electronic communications markets in this country, for example because of actions or decisions by ECOI. Mila has strongly indicated recently that the company considers the settlement to be unfair and that the company plans to make efforts to have it changed or rescinded. In the opinion of ECOI it is not possible to exclude this, so it is necessary for ECOI to impose obligations on Mila, as on others that were deemed to have significant market power on the relevant markets, in those area where such a situation prevails. ECOI obligations can then lead to the conditions of the settlement being changed or withdrawn, for example in specific geographic areas.

3032. One can therefore say that the above specified settlement between Mila and CA does not address all those aspects addressed by ECOI obligations, and it is the assessment of ECOI that it is necessary that obligation pursuant to Electronic Communications Act rest on Mila in those areas where the company is deemed to have significant market power, in parallel with the settlement between Mila and CA. In addition to varying content of the obligation that ECOI plans to impose on the one hand, and on the other hand, of the conditions of the settlement, their implementation and monitoring is conducted in quite a different manner. Obligations imposed by ECOI constitute for example much more permanent monitoring, where ECOI can react more rapidly than CA which has to prioritise its projects, and prior endorsement by ECOI with respect to the various obligations.

3033. Mila provides first and foremost bitstream access through copper and fibre local loops of its own company, but however does provide such service through the fibre networks of other network operators such as e.g. Tengir in North Iceland smaller local networks. The Mila bitstream unit is not authorised to discriminate in any manner by underlying network with respect to price or other possible charges, processing of work requests with respect to connection or configuration of equipment. The Mila bitstream unit shall thus process requests about connections and configuration of connections through fibre networks of unrelated parties in the same manner as with its own local loops. Costs, delivery times, complexity and inconvenience vis-à-vis service providers and/or end users shall be the same. Mila is unauthorised to assume that Mila local loops are default choice for an underlying local loop when a request for connection comes from a sales representative of another network operator or service provider or if an end user requests that a local loop from an unrelated party be the underlying network.

11.3.3.2 Equivalence of Input non-discrimination in access

3034. ECOI makes the requirements that quality of access provided to unrelated parties be no less than that of services provided by Míla to priority purchasers or parties that have strong commercial ties with the company. ECOI plans to maintain the Equivalence of Input (EoI) obligation on Mila. ECOI considers that this obligation is more useful for ensuring complete non-discrimination than what is called the Equivalence of Output (EoO) obligation, and this obligation has furthermore been in force vis-à-vis Mila since 2014 and therefore it should therefore not be unnecessarily burdensome to continue to work according to that obligation.

3035. Equivalence of Input means that Mila is obliged to offer the same price, use the same service procedures/service systems, the same time limits and to publish the same information about the service (among other things development and distribution information) to all customers. In this way all customers receive access to the same information, the same delivery and ordering service and receive the same treatment within the same time limits. The same applies to notification of faults and their solutions as to other access for the staff of customers to Mila's information systems which are used for service to end users.

11.3.3.3 Equal access to information, impact on development of product offer and equal service time

3036. Information on bitstream access and access related service shall be accessible for all electronic communications companies. ECOI considers it particularly important that Míla does not have the opportunity to discriminate in an irregular manner between customers with respect to innovations on the market. As related retail markets are in continuous development, all parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new, improved and less expensive retail service (for example more capacity in Internet access) at the same time as priority purchasers or parties that have strong commercial connections with Mila. ECOI plans to maintain those obligations on Mila that all parties be informed about distribution, enlargement or other developments of networks and Mila central access services (and related service and other innovations) with the same notice. This notice shall under no circumstances be shorter than 3 months.

3037. Information shall among other things contain planned prices, conditions, technical specifications, scheduled distribution plans, updated position on distribution and planned connection points. Such information is particularly important with respect to technical development and upgrading of bitstream systems and with respect to distribution of bitstream through fibre local loops. Míla shall give all parties the opportunity to influence development of new wholesale products and planned interfaces. Mila may not refuse to develop new service at the request of a party simply because a priority purchaser or a party with strong commercial connections with the company has not requested such service. Such a request by a party shall however be reasonable and normal.

3038. Mila shall take care that applications from all electronic communications companies for bitstream access or related service be processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Míla is not

authorised to make unreasonable demands on applicants as a condition for processing an application.

11.3.3.4 Service level agreements and quality assurance

3039. ECOI requires that Mila make service agreements with all purchasers of bitstream access where among other things the quality of service shall be prescribed and issues relating to non-discrimination as itemised in the obligations that ECOI imposes on Mila on the relevant market in those areas where the company has significant market power. These are Service Level Agreements (SLAs). Such agreements shall cover the various service issues that relate to central access, including orders, delivery, service access, transfer of service and repairs. They shall furthermore prescribe efficient and economic procedures with respect to service switching at wholesale, i.e. when a Míla counterparty decides to transfer from one service to another at Míla. Parties can consult with ECOI on the making of such agreements and ECOI can rule on matters of contention when making these agreements. Service level agreements can vary between parties, depending on the wishes of Míla counterparties. Mila shall respect to the non-discrimination obligations when making such agreements.

3040. In addition to the obligation to make service level agreements ECOI maintains the obligation on Mila to issue a specific declaration on quality guarantees (Service Level Guarantees - SLGs). Such service level guarantees shall cover all necessary service issues that relate to bitstream access including orders, delivery, service access, transfer of service and repairs. Such service level guarantees shall among other things prescribe specific fines which Míla must pay to its counterparties should the service level guarantee not to be honoured. In this instance it could be that a specific amount is paid for each day that for example delivery or repair exceeds the time-limit prescribed by the SLG. Such provisions for fines should be objective, simple and unequivocal such that the parties should not need to refer to ECOI or to the courts for interpretation. Míla shall ensure that interested electronic communications companies be informed of the content of the service level guarantee.

3041. With respect to grounds for the necessity of maintaining the obligation in question on Mila, but now only in specific municipalities, reference is made to the discussion in section 8.2.1 here above, on the same grounds apply in the opinion of ECOI to this obligation in markets 3a and 3b.

11.3.3.5 Measurement of key performance indicators (KPIs) and publication of results

3042. In order to ensure that Míla respects the obligation for non-discrimination that is intended to be maintained on the company for making SLG, ECOI maintains the obligation on Míla that it should collect and publish regularly certain key performance indicators (KPI). There is discussion on the necessity for publishing such information in the BEREC document on the relevant market from December 2012[478] and in the ERG document on obligations[479]. The key issues mentioned are in this instance delivery of orders, delivery of service, service

[478] BEREC common position on best practice in remedies on the market for wholesale broadband access (including bitstream access) imposed as a consequence of a position of significant market power in the relevant market, BoR (12) 128.

[479] Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework.

availability, switching of service and maintenance. In this way Míla's counterparties can compare the service they receive together with the service received by companies related to Míla on the one hand with the average in the sector on the other. In this way Míla counterparties can determine whether they are being discriminated against. The publication of conclusions of measurements of key performance indicators will as shown above help in casting light on whether the non-discrimination obligation is complied with, particularly with respect to those factors related to pricing and whether Míla has fulfilled its duty to make adequate service level agreements with its counterparties.

3043. As a minimum Míla shall publish the following key performance indicators as part of key performance assessment.

- Delivery of orders.
  a. Number of orders delivered.
  b. Proportion of orders rejected after having been accepted in the ordering system.

- Delivery of products/services.
  a. Average delivery time.
  b. Proportion of deliveries at or before time limit.
  c. Precision of delivery.

- Repair service.
  a. Proportion of faults in equipment for which company with significant market power is responsible, measured in lines per year.
  b. Average duration of repair of fault.
  c. Proportion of fault repairs at or before time limit.

- Service switching.
  a. Average time for switching from one wholesale service to another.
  b. Proportion of deliveries at or before time limit.
  c. Precision of delivery.

3044. ECOI shall monitor that Mila collect and regularly publish the above specified key performance indicators. ECOI considers that the publication of key performance factors is appropriate as the means to monitor compliance with the non-discrimination obligation and with Míla's duty to make service level agreements. For this reason, and on the basis of minimum criteria in the BEREC reports, ECOI intends to maintain the obligation on Míla to gather and publish on its website figures for key performance indicators at monthly intervals.

3045. ECOI understands that the obligation in question for collection of data can be onerous for Míla. On the other hand, ECOI considers that measuring these criteria is important for the market and furthermore necessary for Míla in its own operations. Publishing the above

specified information is important for competition on the relevant market and supports compliance with the demand for non-discrimination and that all parties can rely on this compliance. There is also the fact that this obligation already rests on Mila and has done so for many years. Now it applies on the other hand only in those areas where Mila is deemed to have significant market power.

3046. With respect to grounds for the necessity of maintaining the obligation in question on Mila, but now only in specific municipalities, reference is made to the discussion in section 8.2.1 here above, on the same grounds apply in the opinion of ECOI to this obligation in markets 3a and 3b.

11.3.3.6 Wholesale bundles, non-discrimination and price differentiation in parts of a bundle

3047. In section 7.5.3.3, there is discussion on competition problems on market 3b that can be attributed to transfer of market power, and wholesale bundles. In the light of what is stated there, ECOI considers it necessary to prescribe equality between access options 1-4 when it comes to bundling service which constitutes each access option.

3048. As Access Option 4 is a bundle of wholesale service that includes Access Option 3 with Internet access, including the international gateway, ECOI considers it necessary to prescribe that pricing and conditions for procurements for Access Option 4 which together form the bundle, are also available as individual products, on those terms that enable access seekers to replicate the Mila bundle by purchasing itemised and defined wholesale service and use electronic communication service in a competitive manner.

11.3.3.7 Conclusion with respect to non-discrimination obligation on Míla on market 3b

3049. The obligation imposed on Mila in section 11.3.2, to provide bitstream access to four different instruments, Access Option 1 to 4. ECOI considers that even although companies have been assured bitstream access at the same price, a company with significant market power could nevertheless try to discriminate in another manner. ECOI believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions.

3050. ECOI therefore maintains the obligation on Mila to respect non-discrimination against all electronic communications companies that purchase bitstream access on a fixed line network, regardless of whether it is copper or fibre in those areas where the company is deemed to have significant market power. All purchasers of such service shall, having taken circumstances into account, use the same conditions (including prices) that apply for related parties or for those cooperating with Mila.

3051. It is taken into consideration that Mila provides first and foremost bitstream access through copper and fibre local loops of its own company, but however provide such service through the fibre networks of other network operators such as e.g. Tengir in North Iceland smaller local networks. ECOI proposes therefore the obligation on the Mila bitstream unit but it is not authorised to discriminate in any manner by underlying network with respect to price or other possible charges, processing of work requests with respect to connection or

configuration of equipment. This shall mean that the company's bitstream unit shall process requests about connections and configuration of connections through fibre networks of unrelated parties in the same manner as with its own local loops. Costs, delivery times, complexity and inconvenience vis-à-vis service providers and/or end users shall be the same. Mila is unauthorised to assume that Mila local loops are default choice for an underlying local loop when a request for connection comes from a sales representative of another network operator or service provider or if an end user requests that a local loop from an unrelated party be the underlying network.

3052. ECOI also maintains the Equivalence of Input (EoI) obligation on Mila. ECOI considers that this obligation is more useful for ensuring complete non-discrimination than what is called the Equivalence of Output (EoO) obligation, and this obligation has furthermore been in force vis-à-vis Mila since 2014 and therefore it should therefore not be unnecessarily burdensome to continue to work according to that obligation.

3053. ECOI furthermore maintains the obligation on Mila that all parties be informed about distribution, enlargement or other developments of networks and Mila central access services (and related service and other innovations) with the same notice. This notice shall be no shorter than 3 months. Information shall among other things contain planned prices, conditions, technical specifications, scheduled distribution plans, updated position on distribution and planned connection points. Such information is particularly important with respect to technical development and upgrading of bitstream systems and with respect to distribution of bitstream through fibre local loops.

3054. Mila shall take care that applications from all electronic communications companies for bitstream access or related service be processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Míla is not authorised to make unreasonable demands on applicants as a condition for processing an application.

3055. ECOI makes the requirement on Mila that it make a service level agreement with all purchasers of bitstream access which among other things shall prescribe the quality of service and issues that relate to non-discrimination. Agreements shall cover the various service issues that relate to central access, including orders, delivery, service access, transfer of service and repairs.

3056. In addition to the obligation to make service level agreements ECOI maintains the obligation on Mila to issue a specific declaration on quality guarantees (Service Level Guarantees - SLGs). Such service level guarantees shall cover all necessary service issues that relate to bitstream access including orders, delivery, service access, transfer of service and repairs.

3057. In order to ensure that Míla respects the obligation for non-discrimination, the obligation is maintained on the company for making service level agreements, such that Mila shall collect and publish regularly certain key performance indicators (KPI). ECOI monitors that Mila collect and regularly publish the above specified key performance indicators.

3058. Collection of data can be onerous for Míla, ECOI however considers that measuring these criteria is important for the market and furthermore necessary for Míla in its own operations. Publishing the above specified information is important for competition on the relevant market and supports compliance with the demand for non-discrimination and that all parties can rely on this compliance. There is also the fact that this obligation already rests on Mila and has done so for many years. Now it applies on the other hand only in those areas where Mila is deemed to have significant market power.

3059. FST considers it necessary to prescribe equality between access options 1-4 when it comes to bundling service which constitutes each access option. As Access Option 4 is a bundle of wholesale service that includes Access Option 3 with Internet access, including the international gateway, ECOI considers it necessary to prescribe that pricing and conditions for procurements for Access Option 4 which together form the bundle, are also available as individual products, on those terms that enable access seekers to replicate the Mila bundle by purchasing itemised and defined wholesale service and use electronic communication service in a competitive manner.

11.3.4 Obligation for fair and reasonable pricing

3060. It has been stated in the ECOI analysis that in those areas where Míla is deemed to have significant market power on market 3b, Mila's market share is substantial and has shown little or no decline in recent times. In most municipalities where Mila is deemed to have market dominance on market 3b, Mila is the only bitstream provider in the municipality. An incentive exists for a company in such a strong position to maintain excessively high prices. For this reason, ECOI has decided to impose an obligation on Mila for fair and reasonable pricing on those products that belong to market 3b in accordance with obligations on Mila to provide access.

3061. There is no further elaboration specified in electronic communications legislation or in the memorandum to the law as to how an NRA shall decide whether a tariff is deemed fair and reasonable. Nor can one find further elaboration of this obligation in the Code. ECOI makes reference to further discussion on this issue in section 8.3.4.3 here above.

3062. In the opinion of ECOI, the obligation for fair and reasonable pricing does not mean that ECOI needs to endorse the Mila tariff before it comes into force.

3063. Mila will therefore be authorised to decide the wholesale prices that the company collects on this market with the reservation that the pricing is fair and reasonable. Then ECOI will not intervene in Mila pricing except in the event of a reasoned complaint from a party to the market or at his own initiative if special circumstances are deemed to justify this. If ECOI comes to the conclusion that the pricing could not be considered fair and reasonable, ECOI will decide price for the service in question which will then apply with respect to the product in question.

3064. In the decision on whether Mila price is fair and reasonable, ECOI will take into account the considerations in the Electronic Communications Act and also the main principles of competition law. ECOI can among other things take the following elements into account when deciding whether price is considered fair and reasonable:

1. Whether price for the service has changed abnormally with respect to general price development and that non-discrimination is respected.

2. Whether the price is in accordance with benchmarking with comparative market areas in this country where greater competitive pressure prevails. Average monthly prices for access to local loops will be taken into consideration, in those areas that are considered comparable, and the Authority is also authorised to take into account set-up charges if they vary.

3. Whether prices are in accordance with cost of providing the service on the relevant geographic market in an efficient manner, with the addition of reasonable return on investment having taken risk into account.

3065. On the other hand, ECOI will assess each complaint individually and the circumstances that prevail on the relevant market. ECOI considers it normal to first take into account points 1 and 2 before it is decided to embark on detailed and time-consuming analysis of costs of the relevant service. ECOI can decide that a maximum price shall be in accordance with benchmarking or limited to an increase in index while such cost analysis is conducted.

3066. As stated here above, it is specified in electronic communications legislation that the burden of proof for charges being based on real costs, rests on the company in question. ECOI can furthermore require an electronic communications company to prepare a cost model for calculation of prices. ECOI considers it normal that if Mila asserts that price which is based on benchmarking or is decided on the basis of a rise in index, is lower than the cost to the company on the relevant market, then it is in Mila's hands to prove that this is the case, based on data from the company's bookkeeping. Mila shall then submit cost analysis in accordance with ECOI requirements. ECOI can require that information from Mila bookkeeping is broken down by municipality, which means that the company is required to use such bookkeeping.

3067. In order that ECOI can monitor compliance of the obligation for fair and reasonable tariff, Mila shall notify ECOI about all tariff changes covered by the obligation.

12 Imposition of obligations on Ljósleiðarinn on market 3b

12.1 In general, on designating electronic communications companies with significant market power on specific geographic markets

3068. In the following municipality, ECOI considers that Ljósleiðarinn has significant market power:

- Sveitarfélagið Ölfus

3069. In the above specified municipality obligations have been in force on Míla on the relevant market in prior analyses. The obligations that have been in force on Míla are now withdrawn, which will come into force 15 days after the date of this decision.

12.2 Assessment of necessity and grounds for imposition of obligations on Ljósleiðarinn in the Sveitarfélagið Ölfus on market 3a

3070. With respect to general discussion on obligations and their imposition, reference is made to section 10.2 on assessment and grounds for imposition of obligations on Ljósleiðarinn on market 3a, which is referenced here. It is necessary to repeat that text here and the same considerations apply with respect to imposition of obligations on markets 3a and 3b.

3071. There are thus many considerations to keep in mind when forming and elaborating obligations. Obligations need to be at once necessary, justifiable, transparent, supported by arguments, in accordance with the nature of the defined competition problem, also to be designed to resolve this in accordance with those objectives that they are intended to achieve (i.e. to strengthen competition, support deployment of high-capacity networks, and create benefits for consumers), support Investments in high-capacity networks and to be in accordance with proportionality. When assessing proportionality, it may be necessary to evaluate the effectiveness of the obligations in question on the basis of cost and gain. In all of these evaluations it is appropriate to endeavour to assess what is likely to happen if the obligation in question (or all of them) are not imposed.

3072. In accordance with the principle of proportionality it is normal to impose those obligations on Ljósleiðarinn that are elaborated in section 12.3 and in its relevant subsections later in this document. As previously stated, ECOI must choose the method that causes least disruption, for the purpose of dealing with the identified problem, see paragraph 2 of Article 46 of the Electronic Communications Act. In the opinion of ECOI, the obligations imposed on Ljósleiðarinn are conducive to achieving the objectives of the Electronic Communications Act no. 70/2022 for effective competition and economic electronic communications and furthermore to support further deployment of fibre networks in this country, and to create advantages for consumers. In section 7.5.2 and 7.5.3 here above, a large number of potential and existing competition problems on markets 3a and 3b have been described. In order to tackle the problems identified there, ECOI shall impose obligations on companies with significant market power pursuant to Articles 47-52, 55 and 59 of the Electronic Communications Act, where appropriate.

3073. The provisions of Article 47 prescribe on access to civil engineering, Article 48 on access to networks and service, Article 49 on transparency, Article 50 on non-discrimination, Article 51 on separation of accountancy, Article 52 on price control, Article 55 on new high-performance high-speed networks and Article 59 on wholesale-only companies. In paragraph 2 of Article 59 it states that if ECOI comes the conclusion that the provisions of paragraph 1 of Article 59 are fulfilled, the Authority can only impose on such a company an access obligation pursuant to Article 48 of the act and a non-discrimination obligation pursuant to Article 50 of the act and on fair and reasonable pricing, if this is considered justifiable on the basis of market analysis.

3074. In this chapter it will be argued why ECOI considers it necessary to impose various obligations on Ljósleiðarinn in the municipality in question and that they are in accordance with the views expressed in the above specified paragraph 4 of Article 30 of the regulation. Further grounds and discussion can be found in the relevant subsections to section 12.3.

3075. In the ECOI examination of the relevant market the Administration has come to the conclusion that no other measures can be found that could be as effective in solving the competition problems that exist on the market and that relate to Ljósleiðarinn in the municipality where the company is considered to have significant market power on the relevant market. ECOI furthermore considers that the obligations are in accordance with proportionality.

3076. In the light of potential and real competition problems that can arise and of the strong Ljósleiðarinn position on the relevant market in the municipality where the company enjoys significant market power on the relevant market, ECOI considers it necessary to impose on the company an access obligation, non-discrimination obligation and an obligation for fair and reasonable tariff. ECOI will on the other hand not impose obligations on Ljósleiðarinn for transparency, separation of accountancy, cost accounting or an obligation for cost analysed prices, and the non-discrimination obligation will be somewhat simpler than is the case with Mila and for example, obligations will not be imposed for service level agreements, quality assurance and publication of KPIs, see the grounds to this effect presented in section 10.2 that relate to the same obligation on market 3a and here in the following paragraph. It should be noted that despite Ljósleiðarinn being deemed not to fulfil the legal conditions to be considered a wholesale-only company, this does not mean to say that ECOI imposes all the obligations prescribed in Articles 47–52, 55 and 59 of the Electronic Communications Act.

3077. As previously stated, one must take certain precautions when imposing obligations, for example the obligations are in accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA. ECOI points out that Ljósleiðarinn has significant market power in only one municipality and ECOI considers it to be inconsistent with proportionality to impose obligations for service level agreements, quality assurance and publication of KPIs in only a single municipality. It should also be mentioned that Ljósleiðarinn it is not a former vertically integrated company, nor have Ljósleiðarinn connections with other companies on the retail market been assessed so strong that one can detect the characteristics of vertical integration, and the above specified obligations generally aim to ensure that one electronic communications company is not favoured to a greater degree than another. In addition to this the competitive status in this

municipality is not as bad as is generally the case in the municipalities where Mila has significant market power.

3078. With respect to the access obligation, ECOI imposes an obligation on Ljósleiðarinn to accede to all normal and fair requests from other electronic communications companies for central access. The access referred to here is access to bitstream over fibre local loops.

3079. In addition to the obligation to provide separate access in the form of bitstream access, the obligations is imposed on Ljósleiðarinn with reference to points g, j, and h in paragraph 2 of Article 48 of the Electronic Communications Act, to provide at wholesale terms, hosting of equipment of other electronic communications companies and access to other facilities necessary for bitstream access to be fully used and to serve the intended purpose, including connections from Ljósleiðarinn connection points to the connection points of wholesale purchasers and related equipment. Reference is made to further discussion on this issue in section 12.3.2 here below.

3080. Access to ducts and conduits belongs to market 3a, while lease of facilities belongs to both market 3a and 3b. With respect to evaluation of the necessity and grounds for imposition of obligations for access to facility lease from Ljósleiðarinn on market 3b, reference is made to section 10.3.3.1 here above, where comparable considerations apply on this issue to both markets.

3081. In addition to the above specified obligation for access to lease of facilities, ECOI considers it necessary to impose on Ljósleiðarinn in the relevant area and access obligation for central access (bitstream) access to fibre local loops and to other vital facilities. With respect to further arguments for this reference is made to section 10.3.3.2. ECOI considers that these access obligations, in addition to being justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems, in accordance with those objectives that the obligations are intended to achieve and that they are not in excess of proportionality. ECOI considers the obligations particularly necessary to ensure competition in service between retailers in the areas in question, as at most locations Ljósleiðarinn is the largest network operator in the relevant area. ECOI considers that obligations do not prevent investments in high-capacity networks in the relevant area, but where gathering infrastructure competition develops over time, it would be possible to withdraw such access obligations.

3082. In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in this area, where Ljósleiðarinn has been deemed to have a dominant market position, unless an access obligation is imposed on Ljósleiðarinn bitstream systems, with respect to access to such systems, for the benefit of consumers.

3083. The obligation for wholesale access on the relevant wholesale markets is a prerequisite for competition to become active in related retail markets such as on the broadband market Internet and voice telephony market (VoIP) and for TV distribution (IPTV). It is not possible to solve the competition problems described here above in any other way than by imposing the obligation for access. Access barriers make it difficult for Ljósleiðarinn competitors and customers to develop extensive local loop networks, or further enlarge those that are already

in place, so it is thus a necessary condition for effective competition on downstream markets that they can receive access to the Ljósleiðarinn bitstream systems in this area.

3084. ECOI considers the obligation for access to be an insignificant burden on Ljósleiðarinn, but it is an essential condition for effective competition on related retail markets. It is in fact necessary for electronic communications companies to gain access to the Ljósleiðarinn bitstream systems in order to be able to offer their customers adequate services in the areas in question. The obligation should first and foremost ensure that Ljósleiðarinn does not discriminate in making bitstream agreements and delay the entry of new companies by delaying contract negotiations. It cannot be considered burdensome to deal with all counterparties for bitstream access in a satisfactory manner. With a connection with the Ljósleiðarinn bitstream network the companies gain better use of the electronic communications equipment in which they have invested.

3085. With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Ljósleiðarinn, in the area in question where Ljósleiðarinn has significant market power. This is an equality of input obligation (EoI), an obligation for equal access to information, for impact on product development and equal delivery times. ECOI furthermore considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as is further argued here below in section 12.3.3.

3086. The obligation for non-discrimination with respect to access to Ljósleiðarinn bitstream systems in wholesale, and to related facilities, is necessary for companies, whether on the relevant market or related markets, to be able to compete on a level playing field between themselves and with Míla. The obligation should mean that all electronic communications companies that purchase access to Ljósleiðarinn network systems receive comparable services and prices and, in this way, resolve competition problems related to possible discrimination.

3087. ECOI considers the obligation for non-discrimination not to be particularly burdensome, as one can consider it likely that the company organises its operations in accordance with this today. The obligation should lead to all companies leasing access to Ljósleiðarinn bitstream systems receiving comparable services and should be instrumental in resolving the potential competition problems described in section 7.5.3 with respect to issues such as speed of reply, price, quality etc., that can give Ljósleiðarinn an advantage on the relevant and/or as appropriate on adjacent market 3a, and that can give specific retail companies, for example priority purchasers with Ljósleiðarinn an advantage on related retail markets.

3088. ECOI considers that if this non-discrimination obligation were not in place, then the competitive situation in the relevant area could become even worse on the relevant wholesale market and/or related retail market. ECOI considers the gains from this obligation much greater than the cost or inconvenience for Ljósleiðarinn of complying with it. It is unlikely that Ljósleiðarinn needs to make significant changes in delivery or order systems or in its procedures, to fulfil the obligation.

3089. ECOI considers it necessary to impose an obligation on Ljósleiðarinn for price control of the company's tariff in the form of fair and reasonable pricing of the company's bitstream lease in the area in question on the relevant market. ECOI furthermore considers the obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as will be further argued here below and in section 12.3.4. With respect to proportionality one can point out that the obligation for fair and reasonable pricing is much less stringent and less for Ljósleiðarinn than the obligation for cost analysed prices which has been imposed on Mila networks for many years with the attendant cost analyses.

3090. ECOI considers that Ljósleiðarinn has the possibility and the incentive to apply excessive pricingg[480] in the area where the company is deemed to have significant market power on the relevant market. This area is characterised by competitive pressure being insufficient and retailers and thus consumers have little possibility of using comparable electronic communications service from other network operators, at least fixed line network operators. ECOI therefore considers it necessary to impose a milder obligation for price control on Ljósleiðarinn.

3091. With regards to the obligation for fair and reasonable pricing, it is clear that this is a much less burdensome obligation than an obligation for cost analysed prices. As the Ljósleiðarinn position is extremely strong in the area in question, ECOI considers it injudicious to not prescribe on fair and reasonable Ljósleiðarinn tariff in the area. The above specified obligation should ensure that Ljósleiðarinn cannot apply excessive pricing in the area in question, to the detriment of access seekers and thus consumers. For this reason, ECOI considers it necessary and justifiable to add such an obligation. With respect to such an obligation, Ljósleiðarinn has much greater freedom in pricing than if an obligation for price control rested on the company, and where prior endorsement from ECOI was not required for price changes. It is not certain that the obligation will be tested, but this will only happen if a complaint is received on excessive pricing or in special circumstances at the initiative of ECOI for example if there was a significant price increase or prices developed significantly in excess of general price development. It should not necessarily require intervention from ECOI for the price of providing a service to be taken into account when deciding the tariff, where account should rather be taken of general price development and/or benchmarking should ECOI become involved.

3092. ECOI considers that the obligation on fair and reasonable pricing on Ljósleiðarinn bitstream access to fibre networks in the relevant areas where the company has significant market power on the relevant market, will not hinder the company's continued fibre roll-out or investments in this area, or other areas, or the installation of bitstream systems on such fibre networks. As previously stated, this obligation is much milder than an obligation on price control. A comparable obligation is imposed on Ljósleiðarinn on market 3a as on Mila on

[480] Excessive pricing is an antitrust violation that exists in most OECD countries and particularly in EU competition law where a dominant firm charges a price that is excessive relative to an appropriate competitive benchmark in a way that deems it unfair.

markets 3a and 3b and on Tengir on market 3a in those areas where these companies have significant market power.

3093. As this obligation is not more burdensome for Ljósleiðarinn than that which is currently in force it should be clear that the benefits for parties to the market are substantial and that there are major gains for retailers and thus for consumers, as it should prevent the possibility of excessive pricing in areas where inadequate competition prevails on the relevant market and on the adjacent market 3a.

12.3 Imposition of obligations on Ljósleiðarinn on market 3b

12.3.1 General

3094. ECOI imposes to a large extent the same or comparable obligations on Ljósleiðarinn on the above specified geographic market as are imposed on Mila where Mila is deemed to have significant market power. The non-discrimination obligation will be somewhat simpler in the case of Mila and for example, obligations for service level agreements, quality assurance and publication of KPIs will not be imposed.

12.3.2 Obligation to provide access

3095. The Ljósleiðarinn strong position on the wholesale market for central access to fixed line networks in Sveitarfélagið Ölfus results in certain entry barriers to the relevant market in this area. The development of a new bitstream system in the relevant area, or the enlargement of bitstream systems of Mila competitors in this area, requires major investment and it is the opinion of ECOI that it will not be easy to embark on development of such a system and that the development of other systems will be directed at specific areas close to the operating premises of the service providers, and less in the countryside. In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in those areas where the bitstream operator has been deemed to have a dominant market position, unless an access obligation is imposed on the bitstream system of such a party with respect to access to such a system. ECOI considers that consumer interests will be improved with increased access, as that would give more companies the option of providing Internet service and other related retail service.

3096. ECOI has assessed whether an obligation for such access on Ljósleiðarinn in the area in question is technologically and financially realistic on the relevant market and whether it would be realistic for a competitor to set up his own infrastructure in competition, considering market developments and the nature of the access in question. In the light of experience, ECOI considers it quite feasible for Ljósleiðarinn to grant the access that is proposed and furthermore it considers it justifiable with respect to the initial Ljósleiðarinn investment in the area in question. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in service offers. ECOI has with the imposition of obligations, taken into account other obligations that rest on Ljósleiðarinn, i.e. the obligations that it is planned to impose on Ljósleiðarinn on the wholesale market for local access (market 3a) in this area. In the opinion of ECOI, it is not sufficient to only impose access obligations on market 3a as it is too costly for purchasers of wholesale access to set up their

own bitstream systems. Experience has shown in recent years, that there is more demand for central wholesale access than for local access.

3097. ECOI plans to impose an obligation on Ljósleiðarinn to accede to all normal and reasonable requests from other electronic communications companies for central access, see definition of service market 3b. The access in question is access to bitstream through fibre local loops for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, including Internet service, VoIP telephony service and IPTV television distribution.

3098. Bitstream access shall be offered with the following quality definitions:

- first, access that uses significant bandwidth but without any quality definition (best effort) for general Internet service;

- second, access that uses little bandwidth but makes high-quality requirements for fixed telephony services over IP (VoIP);

third, access that uses significant bandwidth and makes high-quality requirements for TV distribution and video over IP (IPTV, VoD) where among other things multicast technology is used and the appropriate communication protocols.

3099. The kinds of access mentioned here are first and foremost indicative and neither exhaustive nor do they exclude that other methods may be offered. ECOI considers that the pricing of each access service over bitstream shall depend on the bandwidth load that it entails and the quality requirements that it needs to fulfil.

3100. In addition to traditional Internet service one can in this respect mention IPTV service which among other things uses IGMPv2 communication protocols for transmission of TV programmes and RTSP for viewing video on demand (VoD). Ljósleiðarinn shall also accede to requests for access to bitstream service that fulfils normal and reasonable requirements for another kind of communication protocol, quality control and performance guarantee, should a request for such access be made that fulfils those conditions.

3101. Ljósleiðarinn shall provide the same bitstream service as the company has provided up to this point in time subsequent to transfer o a network to central connection point of another electronic communications company on the latter network. This access option can be assessed as very analogous or of the same type as Access Option 3 as it is defined.

3102. With elaboration of this access option, ECOI considers it normal that account is taken of efficiency considerations and that Ljósleiðarinn will not be required to change its business model and its products offer.

3103. In addition to the obligation to provide separate access in the form of bitstream access, the obligations is imposed on Ljósleiðarinn with reference to points g, j, and h in paragraph 2 of Article 48 of the Electronic Communications Act, to provide at wholesale terms, hosting of equipment of other electronic communications companies and access to other facilities necessary for bitstream access to be fully used and to serve the intended purpose, including

connections from Ljósleiðarinn connection point to the connection points of wholesale purchasers and related equipment.

3104. Pursuant to item i in paragraph 2 of Article 48 of the Electronic Communications Act, it may be required that a company with significant market power offers access to operations systems or analogous software in order to ensure competition in the offer of service it may be required that an electronic communications company with significant market power provide access to other critical facilities. With reference to these authorisations, ECOI obliges Ljósleiðarinn to provide access to support systems and information necessary for the purchaser's utilisation of bitstream access. Such access can among other things be:

a) operational support.
b) database to gather information before an order is made.
c) delivery.
d) orders.
e) maintenance.
f) handling of faults.
g) invoicing.

3105. Applications sent electronically for bitstream access and related facilities shall be processed by Ljósleiðarinn as quickly as possible, where they are sent electronically. Ljósleiðarinn is unauthorised to give a company or companies, priority in handling at the cost of other electronic communications companies. Denial of access shall be sent electronically and shall contain grounds for the decision. The grounds must contain all information required to enable assessment of the justification of the denial. Applications for access shall have equal access to the Ljósleiðarinn service system for the purpose of tracking their applications and also for information on maintenance and repair of local loops and on invoicing.

3106. Those obligations that rest on Ljósleiðarinn for access to the company's bitstream systems in the relevant area shall not cease to apply even if Ljósleiðarinn changes the structure of its systems, except when agreement has been reached on the migration process and the party leasing the access is thus prepared to receive a new kind of access instead of the older one when the migration has taken place. Should such an agreement not be reached then Ljósleiðarinn shall inform parties to the market of all changes to the arrangements of bitstream access that are likely to alter companies' competitiveness on the market with 2 years' notice. Exceptions may be made from the above period of notice on receipt of advance endorsement by ECOI. If Ljósleiðarinn request for such an exemption is considered normal and reasonable, ECOI will open consultation with stakeholders. If no objections are raised and stakeholders have access to substitute products, and do not suffer any unnecessary damage when migrating between systems, ECOI will endorse such an exemption.

3107. Should Ljósleiðarinn make changes to its systems it is important that:

- System downtime should be at a minimum for those wholesale customers operating on the relevant market segment.
- Costs resulting from the migration should not be so great as to act as an entry barrier to what results from the migration.

- An integrated process for migrating all parties should be in place with care taken to ensure non-discrimination between all parties on the market.
- The time taken for migration should be at a minimum given the type and scope of the application.
- There should be a service agreement and a list of key performance criteria to ensure the efficiency of the migration procedure, unless there are indications that such is unnecessary or is not cost-effective.

3108. The Ljósleiðarinn strong position on the wholesale market for central access to fixed line networks in Sveitarfélagið Ölfus results in certain entry barriers to the relevant market in this area. In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in those areas where the bitstream operator has been deemed to have a dominant market position, unless an access obligation is imposed on the bitstream system of such a party with respect to access to such a system. ECOI considers that consumer interests will be improved with increased access, as that would give more companies the option of providing Internet service and other related retail service.

3109. ECOI plans to impose an obligation on Ljósleiðarinn to accede to all normal and reasonable requests from other electronic communications companies for central access. The access in question is access to bitstream through fibre local loops for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, including Internet service, VoIP telephony service and IPTV television distribution.

3110. In addition to traditional Internet service one can in this respect mention IPTV service which among other things uses IGMPv2 communication protocols for transmission of TV programmes and RTSP for viewing video on demand (VoD). Ljósleiðarinn shall also accede to requests for access to bitstream service that fulfils normal and reasonable requirements for another kind of communication protocol, quality control and performance guarantee, should a request for such access be made that fulfils those conditions.

3111. Ljósleiðarinn shall addition to this provide the same bitstream service as the company has provided up to this point in time subsequent to transfer to a central connection point of another electronic communications company on the latter network. This access option can be assessed as very analogous or of the same type as Access Option 3 as it is defined.

3112. With elaboration of this access option, ECOI considers it normal that account is taken of efficiency considerations and that Ljósleiðarinn will not be required to change its business model and its products offer.

3113. The obligation is imposed on Ljósleiðarinn to process applications for bitstream access and related facilities shall be expedited by Ljósleiðarinn to the extent possible, where they are sent electronically. Ljósleiðarinn is unauthorised to give a company or companies, priority in handling at the cost of other electronic communications companies. Denial of access shall be sent electronically and shall contain grounds for the decision.

3114. Those obligations that rest on Ljósleiðarinn for access to the company's bitstream systems in the relevant area shall not cease to apply even if Ljósleiðarinn changes the structure of its systems, except when agreement has been reached on the migration process and the party leasing the access is thus prepared to receive a new kind of access instead of the older one when the migration has taken place. Should such an agreement not be reached then Ljósleiðarinn shall inform parties to the market of all changes to the arrangements of bitstream access that are likely to alter companies' competitiveness on the market with 2 years' notice. Exceptions may be made from the above period of notice on receipt of advance endorsement by ECOI.

12.3.3 Obligation for non-discrimination

3115. With respect to the obligation for non-discrimination and the need for imposing this obligation in those areas where Ljósleiðarinn is deemed to have significant market power, reference is made to section 8.2.3.1 on the non-discrimination obligation, which is imposed on Mila for market 3a, and the same considerations apply also to Ljósleiðarinn on market 3b.

3116. With respect to access, the obligation rests on Ljósleiðarinn to provide bitstream access to a central connection point in the Capital City Area.

3117. Even though companies have been assured bitstream access at the same terms, companies with significant market power can try to discriminate on other grounds and in this way increase their costs or part of them in order to cause them problems and even push some of them of out of the market, and thus for example favour priority purchasers. Such practices could for example be in the form of varying quality of service, differing service offers, varying processing of applications, inadequate information (among other things on new service and/or planned distribution networks), unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

3118. ECOI believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions. As an example of varying quality, one could mention discrimination between electronic communications companies with respect to connection time of local loops, for example with an advantage for priority purchasers. Discrimination can also manifest itself in varying prices and/or conditions for access to information systems and in parties being provided access to systems of varying ages and capacity.

3119. The information gained by Ljósleiðarinn from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see among other things Article 42 of the Electronic Communications Act.

3120. ECOI imposes the obligation on Ljósleiðarinn to respect non-discrimination against all electronic communications companies that purchase bitstream access on a fixed line network, regardless of whether it is copper or fibre in those areas where the company is deemed to have significant market power. All purchasers of such service shall, having taken circumstances into account, enjoy the same terms.

3121. ECOI makes the requirements that quality of access provided to unrelated parties be no less than that of services provided by Ljósleiðarinn to priority purchasers or parties that have strong commercial ties with the company. ECOI therefore imposes the Equivalence of Input (EoI) obligation on Ljósleiðarinn. ECOI considers that this obligation is more effective for ensuring complete non-discrimination than what is called an Equivalence of Output obligation. Ljósleiðarinn has never practised any kind of internal procedures for retail arm, but has only dealt with wholesale, so it should not be unnecessarily burdensome to operate in accordance with the non-discrimination obligation.

3122. Equivalence of Input means that Ljósleiðarinn is obliged to use the same price, the same service procedures/service systems, the same time limits and to publish the same information about the service (among other things development and distribution information) to all customers. In this way all customers receive access to the same information, the same delivery and ordering service and receive the same treatment within the same time limits. The same applies to notification of faults and their solutions as to other access for the staff of customers to Ljósleiðarinn's information systems which are used for service to end users.

3123. Information on bitstream access and access related service shall be accessible for all electronic communications companies in the same manner. ECOI considers it particularly important that Ljósleiðarinn does not have the opportunity to discriminate in an irregular manner between customers with respect to innovations on the market. As related retail markets are in continuous development, all parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new, improved and less expensive retail service (for example more capacity in Internet access) at the same time as priority purchasers or parties that have strong commercial connections with Ljósleiðarinn. ECOI imposes the obligation on Ljósleiðarinn that all parties be informed about distribution, enlargement or other developments of networks and Mila central access services (and related service and other innovations) with the same notice. This notice shall under no circumstances be shorter than 3 months.

3124. Information shall among other things contain planned terms, technical specifications, scheduled distribution plans, updated position on distribution and planned connection points. Such information is particularly important with respect to technical development and upgrading of bitstream systems and with respect to distribution of bitstream through fibre local loops. Ljósleiðarinn shall give all parties the opportunity to influence development of new wholesale products and planned interfaces. Ljósleiðarinn may not refuse to develop new service at the request of a party simply because a priority purchaser or a party with strong commercial connections with the company has not requested such service. Such a request by a party shall however be reasonable and normal.

3125. Ljósleiðarinn shall take care that applications from all electronic communications companies for bitstream access or related service be processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Ljósleiðarinn is not authorised to make unreasonable demands on applicants as a condition for processing an application.

3126. The non-discrimination obligations is not as detailed on Ljósleiðarinn on this market, and nor does ECOI, as previously stated, impose obligations on Ljósleiðarinn for SLAs, SMGs and KPIs as is the case with Mila, on the grounds presented in section 10.2 here above.

12.3.4 Obligation for fair and reasonable pricing

3127. It has been stated in the ECOI analysis than in Sveitarfélagið Ölfus where Ljósleiðarinn is deemed to have significant market power, Ljósleiðarinn market share is very substantial and has been on steady increase. Conditions there are also such that parallel coverage of fixed line networks and of two fibre networks is limited. Ljósleiðarinn fibre deployment is significantly greater than that of Mila in the municipality and the most significant factor is that Ljósleiðarinn deployment reaches the rural area where it is very unlikely that parallel networks will be developed. Although this is a wholesale company, there still exists an incentive for the company in such a strong position to maintain excessively high prices. For this reason, ECOI has decided to impose an obligation on Ljósleiðarinn for fair and reasonable pricing on those products that belong to market 3b in accordance with obligations on Ljósleiðarinn to provide access.

3128. There is no further elaboration specified in electronic communications legislation or in the memorandum to the law as to how an NRA shall decide whether a tariff is deemed fair and reasonable. Nor can one find further elaboration of this obligation in the Code. ECOI makes reference to further discussion on this issue in section 8.3.4.3 here above.

3129. In the opinion of ECOI, the obligation for fair and reasonable pricing does not mean that ECOI needs to endorse the Ljósleiðarinn tariff before it comes into force.

3130. Ljósleiðarinn will therefore be authorised to decide the wholesale prices that the company collects on this market with the reservation that the pricing is fair and reasonable. Then ECOI will not intervene in Ljósleiðarinn pricing except in the event of a reasoned complaint from a party to the market or at its own initiative if special circumstances are deemed to justify this. If ECOI comes to the conclusion that the pricing could not be considered fair and reasonable, ECOI will decide price for the service in question which will then apply with respect to the product in question.

3131. In the decision on whether Ljósleiðarinn price is fair and reasonable, ECOI will take into account the specified considerations in electronic communications legislation and also the main principles of competition law. ECOI can among other things take a number of elements into account when deciding whether price is considered fair and reasonable.

1. Whether price for the service has changed abnormally with respect to general price development and that non-discrimination is respected.

2. Whether the price is in accordance with benchmarking with comparative market areas in this country where greater competitive pressure prevails. Average monthly prices for access to local loops will be taken into consideration, in those areas that are considered comparable, and the Authority is also authorised to take into account set-up charges if they vary.

3. Whether prices in accordance with cost of providing the service on the relevant geographic market in an efficient manner, with the addition of reasonable profitability from investment having taken risk into account.

3132. On the other hand, ECOI will assess each complaint individually and the circumstances that prevail on the relevant market. ECOI considers it normal to first take into account points 1 and 2 before it is decided to embark on detailed and time-consuming analysis of costs of the relevant service. ECOI can decide that a maximum price shall be in accordance with benchmarking or limited to an increase in index while such cost analysis is conducted.

3133. As stated here above, it is specified in electronic communications legislation that the burden of proof for charges being based on real costs, rests on the company in question. ECOI can furthermore require an electronic communications company to prepare a cost model for calculation of prices. ECOI considers it normal that if Ljósleiðarinn asserts that price which is based on benchmarking or is decided on the basis of a rise in index, is lower than the cost to the company on the relevant market, then it is in Ljósleiðarinn's hands to prove that this is the case, based on data from the company's bookkeeping. Ljósleiðarinn shall then submit cost analysis in accordance with ECOI requirements. ECOI can require that information from Ljósleiðarinn bookkeeping is broken down for Sveitarfélagið Ölfus, which means that the company is required to use such bookkeeping for the municipality.

3134. In order that ECOI can monitor compliance of the obligation for fair and reasonable tariff, Ljósleiðarinn shall notify ECOI about all tariff changes covered by the obligation.

13 Imposition of obligations on Austurljós on market 3b

13.1 In general, on designating electronic communications companies with significant market power on specific geographic markets

3135. In the following municipality, ECOI considers that Austurljós has significant market power:

- Fljótsdalshreppur

3136. In the above specified municipality obligations have been in force on Míla on the relevant market in prior analyses. The obligations that have been in force on Míla are now withdrawn, and the withdrawal shall come into force 15 days after the date of this decision.

13.2 Assessment of necessity and grounds for imposition of obligations on Austurljós on market 3b

3137. As stated in the paragraph 2 of Article 1 of regulation no. 556/2023 on market analysis in the field of electronic communications, the purpose of market analysis is to show whether effective competition prevails on electronic communications markets and to decide on applying measures if competition is not effective, for the purpose of enhancing consumer interests. When elaborating obligations, one must furthermore take into consideration, where effective competition is not in place, whether deployment of high-capacity networks on commercial terms is inadequate. In paragraph 4 of the provision, it states that competition shall be strengthened in electronic communications with economic investments in new and existing electronic communications infrastructure and as appropriate by imposing obligations where they are needed, particularly at wholesale level, for the purpose of achieving effective competition on retail electronic communications markets.

3138. When one has defined the relevant product or service market, geographic markets, evaluation of competitive conditions shall be conducted on relevant markets and as appropriate having designated an electronic communications company as having significant market power on the market, the next step is to describe competitive problems on the relevant market. One must then identify whether the relevant electronic communications company that has been designated as having significant market power, fulfils legal conditions to be deemed a wholesale-only company pursuant to Article 59 of the Electronic Communications Act. All this has been assessed here above and the conclusion of the latter element was that Austurljós does not fulfil the above specified legal conditions. For this reason, ECOI has more measures at its disposal to tackle identified competition problems in the case of Austurljós than is the case of wholesale-only companies.

3139. Having completed all of the above, ECOI must elaborate obligations on the relevant company for the purpose of facilitating competition on the related retail market, for the benefit of consumers. In paragraph 1 of Article 4 of the regulation it states that the purpose of obligations is to create an advantage for consumers with respect to price, quality, choice and access to high-capacity networks, by supporting active and sustainable competition on retail electronic communications markets and the deployment of high-capacity networks on

commercial grounds where possible. ECOI is required to assess whether it is justifiable to impose obligations on the relevant market under specific conditions. In paragraph 2 it states that when elaborating obligations on the basis of market analysis, one shall take care to avoid that they do not thwart investment incentives or that new electronic communications networks and service inhibit competition. One must support sustainable investments in high-capacity networks, while at the same time protecting competition - as bottlenecks and access barriers have in many instances existed at the infrastructure level. In accordance with the above, obligations must support foreseeability and accordance in investments in high-capacity networks.

3140. In the above specified documents from the EU Commission and BEREC on obligations, that were taken into account in the new electronic communications legislation in this country from 2022, emphasis is among other things placed on increased competition with the development of electronic communications infrastructure and networks where this is considered feasible. In such instances the imposed obligations should support such development. Where competition in the form of electronic communications networks is not considered feasible, because of non-transitory economies of scale and scope of the incumbent in a specific area, or because of other access barriers, adequate access to electronic communications networks and equipment at wholesale level must be assured in order to encourage service competition on existing networks, while at the same time guaranteeing adequate recompense for access to the above specified electronic communications networks, thus encouraging further investment, renewal and maintenance of these networks. For the long-term, service-based competition that has its foundation in steered access to a cost-analysed price can be a tool for generating competition in the regeneration of electronic communications networks. This refers to what is called the investment ladder where the objective is to create conditions that make it possible for new or smaller operators to develop their electronic communications networks in incremental steps. Such views are reflected in paragraph 5 of Article 30 of the above specified regulation on market analysis.

3141. In selecting the obligations that are best fitted to promote competition in a given market, or on a specific geographic part of the market, it is often beneficial to assess the position that would exist if obligations were not imposed on companies with significant market power, and whether it would be sufficient to use competition legislation alone to guarantee competition.

3142. In accordance with paragraph 4 of Article 30 of the regulation no. 556/2023 on market analysis in the field of electronic communications, which contains further elaboration of the provisions of paragraph 4 of Article 46 of the Electronic Communications Act no. 70/2022, imposed obligations on electronic communications companies shall be:

a) In accordance with the nature of the problem specified in market analysis and be designed to resolve it;

b) Transparent, justifiable and reasoned;

c) In accordance with the objectives they are intended to achieve, i.e. to strengthen competition, support development of new high-capacity networks, protect consumer interests and encourage the development of the internal market in the EEA;

d) Justifiable in the light of the objectives of the Electronic Communications Act, i.e. to ensure accessible, efficient, economic, effective and secure electronic communications in this country, and also to increase protection and range of choice for consumers, to support effective competition, effective investments and innovation on the electronic communications market:

e) Proportional and take into account, where possible, costs and advantages, and they may not go further than necessary to achieve intended results.

3143. In Article 29 of the regulation, it is among other things stated that obligations need to be necessary for the purpose of solving specific competition problems. ECOI needs among other things to assess effectiveness and as appropriate to conduct cost and benefit analysis, having in mind the capability of a specific obligation to react to an identified competition problem. Furthermore, whether one should provide specific incentives with the obligations in question.

3144. There are thus many considerations to keep in mind when forming and elaborating obligations. Obligations need to be at once necessary, justifiable, transparent, supported by arguments, in accordance with the nature of the defined competition problem, also to be designed to resolve this in accordance with those objectives that they are intended to achieve (i.e. to strengthen competition, support deployment of high-capacity networks, and create benefits for consumers), support Investments in high-capacity networks and to be in accordance with proportionality. When assessing proportionality, it may be necessary to evaluate the effectiveness of the obligations in question on the basis of cost and gain. In all of these evaluations it is appropriate to endeavour to assess what is likely to happen if the obligation in question (or all of them) are not imposed.

3145. In accordance with the principle of proportionality it is normal to impose those obligations on Austurljós that are elaborated in section 13.3 here below. As previously stated, ECOI must choose the method that causes least disruption, for the purpose of dealing with the identified problem, see paragraph 2 of Article 46 of the Electronic Communications Act. In the opinion of ECOI, the obligations imposed on Austurljós are conducive to achieving the objectives of the Electronic Communications Act no. 70/2022 for effective competition and economic electronic communications and furthermore to support further deployment of electronic communications networks in this country, and to create advantages for consumers. In section 7.5.2 and 7.5.3 here above, a large number of potential and existing competition problems on markets 3a and 3b have been described. In order to tackle the problems identified there, ECOI shall impose obligations on companies with significant market power pursuant to Articles 47-52, 55 and 59 of the Electronic Communications Act, where appropriate.

3146. The provisions of Article 47 prescribe on access to civil engineering, Article 48 on access to networks and service, Article 49 on transparency, Article 50 on non-discrimination, Article 51 on separation of accountancy, Article 52 on price control, Article 55 on new high-

performance high-speed networks and Article 59 on wholesale-only companies. In paragraph 2 of Article 59 it states that if ECOI comes the conclusion that the provisions of paragraph 1 of Article 59 are fulfilled, the Authority can only impose on such a company an access obligation pursuant to Article 48 of the act and a non-discrimination obligation pursuant to Article 50 of the act and on fair and reasonable pricing, if this is considered justifiable on the basis of market analysis.

3147. In this chapter it will be argued why ECOI considers it necessary to impose those obligations on Austurljós in the municipality in question that ECOI considers necessary and that they are in accordance with the views expressed in the above specified paragraph 4 of Article 30 of the regulation. Further grounds and discussion can be found in the relevant subsections to section 13.3.

3148. In the ECOI examination of the relevant market the Authority has come to the conclusion that no other measures can be found that could be as effective in solving the competition problems that exist on the market and that relate to Austurljós in the municipality where the company is considered to have significant market power on the relevant market. ECOI furthermore considers that the obligations are in accordance with proportionality.

3149. In the light of those potential and real competition problems that can arise and of the strong Austurljós position on the relevant market in the municipality where the company is deemed to enjoy significant market power, ECOI considers it necessary to impose an access obligation and non-discrimination obligation on the company, but ECOI will on the other hand not impose an obligation on the company for a reasonable and justifiable pricing, among other things in the light of the fact that this is a case of many small companies, and as the area in question is very rural and sparsely populated. In addition to this, Austurljós is dependent on the municipality for access to the municipality's fibre network which was built as a community project with state support.

3150. With respect to the access obligation, ECOI imposes an obligation on Austurljós to accede to all normal and fair requests from other electronic communications companies for central access. The access in question here is to the company's bitstream over fibre local loops owned by Fljótsdalshreppur, for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, particularly Internet service.

3151. In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in this area, where Austurljós has been deemed to have a dominant market position, unless an access obligation is imposed on Austurljós bitstream systems, with respect to access in this instance, for the benefit of consumers.

3152. It is not possible to solve the competition problems described here above in any other way than by imposing the obligation for access. Access barriers make it difficult for Austurljós competitors and customers to develop extensive local networks in the relevant area and it is thus a prerequisite for effective competition on downstream markets that they can receive access to the Austurljós bitstream systems in this area.

3153. ECOI considers the obligation for access to be an insignificant burden on Austurljós, but it is an essential condition for effective competition on related retail markets. It is in fact necessary for electronic communications companies to gain access to the Austurljós bitstream systems in order to be able to offer their customers adequate services in the area in question. The obligation should first and foremost ensure that Austurljós does not discriminate in making bitstream agreements and delay the entry of new companies by delaying contract negotiations. It cannot be considered burdensome to deal with all counterparties for bitstream access in a satisfactory manner. With a connection with the Austurljós bitstream systems the companies gain better use of the electronic communications equipment in which they have invested.

3154. ECOI believes that the obligation for bitstream access to Austurljós in the area in question to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve those problems and in accordance with those objectives that the obligation is intended to achieve and to be not in excess of proportionality. In the opinion of ECOI it is clear that gains from this obligation are much greater than its cost or inconvenience for Austurljós.

3155. With respect to the non-discrimination obligation, ECOI considers it necessary to impose this obligation on Austurljós in the area in question. This is an obligation for equal access to the company's bitstream system, related facilities, to information etc. ECOI furthermore considers the non-discrimination obligation to be justifiable, transparent, reasoned, in accordance with the nature of identified competition problems, designed to resolve them, in accordance with the objectives that the obligation is intended to achieve, support investment and competition in high-capacity networks and to be not in excess of proportionality, as is further argued here below in section 13.3.3.

3156. The obligation for non-discrimination with respect to access to Austurljós bitstream systems in wholesale, and to related facilities, is necessary for companies, whether on the relevant market or related markets, to be able to compete on a level playing field between themselves and with Austurljós, and also at retail level. The obligation should mean that all electronic communications companies that purchase access to Austurljós network systems receive comparable services and prices and, in this way, resolve competition problems related to possible discrimination.

3157. ECOI considers that the obligation for non-discrimination is not particularly burdensome and that it should lead to a situation where all companies that lease access to the Austurljós systems receive comparable service, and will thus be conducive to resolving those competition problems described in section 7.5.3 that relate to issues such as speed of delivery, price, quality, etc., which could give Austurljós an advantage in competition on the relevant market, or on related retail market. ECOI considers that if this non-discrimination obligation were not in place, then a negative competition situation in the relevant area could become even worse on the relevant wholesale market and/or related retail market.

13.3 Imposition of obligations on Austurljós on market 3b

13.3.1 General

3158. In all main respects, comparable obligations will be imposed on Austurljós ours on the other electronic communications companies that have been designated as having significant market power. It is however taking into account that these are very small companies that do not have the same service systems and financial strength as the other companies. Requirement will then not be made for access to information systems, and in addition the access obligation and the non-discrimination obligation will be elaborated in a somewhat simpler manner than with the other companies, particularly in the case of Mila. Nor is there discussion on access to quality controlled virtual networks for VoIP your IPTV, as Austurljós does not offer such service. There will finally be no obligation imposed for price control, as Austurljós is dependent on the municipality for its bitstream sale.

13.3.2 Obligation to provide access

3159. The Austurljós strong position on the wholesale market for central access to fixed line networks in Fljótsdalshreppur, though it is a sparsely populated and rural area, results in certain entry barriers to the relevant market in this area. Development of a new bitstream system in the relevant area constitutes significant investment costs, as economy of scale is not in place, and it is the ECOI opinion that it will not be easy to embark on installation of such systems in competition with the Austurljós bitstream systems. In the opinion of ECOI, access barriers will continue to characterise market conditions on the market for bitstream access in wholesale and on downstream markets in this area, where the bitstream provider has been deemed to have a dominant market position, unless an access obligation is imposed on bitstream systems of such a party, with respect to access at that location. ECOI considers that consumer interests will be improved with increased access, as that would give more companies the option of providing Internet service and other related retail service. It should be noted that Austurljós is a vertically integrated company that also has a growing market share on the relevant retail market.

3160. ECOI has assessed whether the access requirement is technologically and financially realistic and whether it would be realistic for a competitor to set up his own infrastructure in competition, considering market developments and the nature of the access in question. In the light of experience, ECOI considers it quite feasible for Austurljós to grant the access that is proposed and furthermore it considers it justifiable with respect to the initial investment by Míla. Austurljós is already providing bitstream access in the municipality. ECOI considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in service offers.

3161. ECOI imposes an obligation on Austurljós to accede to all normal and reasonable requests from other electronic communications companies for central access, see definition of service market 3b. The access in question here is bitstream access over fibre local loops owned by Fljótsdalshreppur, for the purpose of enabling other electronic communications companies to provide their users with access to various kinds of broadband service, particularly Internet service.

3162. Access shall be on offer for bitstream access that uses significant bandwidth but without any quality definition (best effort) for general Internet service. If Austurljós were to start to offer bitstream with another kind of quality definition, such as for carrying VOIP voice telephony service or IPTV television distribution, then the obligations that rest on Austurljós for bitstream service will also apply to such an additional offer in Fljótsdalshreppur.

3163. Applications sent electronically for bitstream shall be processed by Austurljós as quickly as possible. Austurljós is unauthorised to give its departments and related companies priority in handling at the cost of other electronic communications companies. Denial of access shall be sent electronically and shall contain grounds for the decision. The grounds must contain all information required to enable assessment of the justification of the denial. Applications for access shall have access equal to information from Austurljós for the purpose of tracking their applications and also for information on maintenance and repair of local loops and on invoicing.

3164. Those obligations that now rest on Austurljós for access to the company's bitstream systems shall not cease to apply even though the company changes the structure of its systems except when agreement has been reached on the migration process and the party leasing the access is thus prepared to receive a new kind of access instead of the older one when the migration has taken place. Should such an agreement not be reached then Austurljós shall inform parties to the market of all changes to the arrangements of bitstream access that are likely to alter companies' competitiveness on the market with 2 years' notice. Exceptions may be made from the above period of notice on receipt of advance endorsement by ECOI. If Austurljós request for such an exemption is considered normal and reasonable, ECOI will open consultation with stakeholders. If no objections are raised and stakeholders have access to substitute products, and do not suffer any unnecessary damage when migrating between systems, ECOI will endorse such an exemption.

3165. Should Austurljós make changes to its systems it is important that:

- System downtime should be at a minimum for those wholesale customers operating on the relevant market segment.
- Costs resulting from the migration should not be so great as to act as an entry barrier to what results from the migration.
- An integrated process for migrating all parties should be in place with care taken to ensure non-discrimination between all parties on the market.
- The time taken for migration should be at a minimum given the type and scope of the project.

13.3.3 Obligation for non-discrimination

3166. Even though companies have been assured bitstream access at the same terms, those with significant market power can try to discriminate on other grounds and in this way increase the companies' costs or part of them in order to cause them problems and even push some of them of out of the market, and thus for example favour their own retail operations. Such practices could for example be in the form of varying quality of service, differing service

offers, varying processing of applications, inadequate information (among other things on new service and/or planned distribution networks), unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

3167. ECOI believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price and access conditions. As an example of varying quality, one could mention discrimination between electronic communications companies with respect to connection time of local loops, for example between its own company and unrelated parties. Discrimination can also manifest itself in varying prices and/or conditions for access to information systems and in parties being provided access to systems of varying ages and capacity.

3168. The information gained by Austurljós from other companies when making agreements for access, or completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information to related or unrelated parties, see among other things Article 42 of the Electronic Communications Act.

3169. ECOI emphasises that the obligation on Austurljós to respect non-discrimination against all electronic communications companies and its own retail operations that purchases fixed line bitstream access in the area in question All purchasers of such service shall, having taken circumstances into account, enjoy the same terms.

3170. ECOI makes the requirements that quality of access provided to unrelated parties be no less than that which applies to services provided by Austurljós to itself and to parties with whom the company has strong commercial connections.

3171. Information on bitstream access and access related service shall be accessible for all electronic communications companies in the same manner. ECOI considers it particularly important that Austurljós does not have the opportunity to discriminate in an irregular manner between customers of other electronic communications companies and its own retail operations with respect to innovations on the market. As related retail markets are in continuous development, all parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new, improved and less expensive retail service (for example more capacity in Internet access) at the same time as Austurljós own retail operations or the parties that have strong commercial connections with Austurljós. ECOI therefore imposes the obligation on Austurljós that all parties be informed about deployment, enlargement or other development of networks and central access to Austurljós (and related service and other significant innovations) with the same notice. This notice shall under no circumstances be shorter than 3 months.

3172. Information shall among other things contain planned terms, technical specifications, scheduled distribution plans, updated position on distribution and planned connection points. Such information is particularly important with respect to technical development or updating of bitstream systems and also with respect to distribution of bitstream through fibre local loops.

3173. Austurljós shall take care that applications from all electronic communications companies, including its own bitstream operations, for bitstream access or related service be

processed in an equally timely manner. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons shall be provided for the delay. Austurljós is not authorised to make unreasonable demands on applicants as a condition for processing an application.

14 Coming into force and withdrawal of obligations

3174. The obligations imposed on a company that has been designated as having significant market power come into force 15 days after the date of a final decision in the case, with the exception that an obligation for notification of civil works on Ljósleiðarinn and Tengir comes into force six months after the publication of this decision. Obligations imposed are not such that they require the companies to introduce new work practices, procedures or such changes in their operations that time is required for preparation or adaptation.

3175. In those municipalities where ECOI assesses that effective competition prevails, or where parties other than Mila now have significant market power, obligations have applied to Mila up to this point in time. These obligations are now withdrawn in the relevant municipalities, and they shall no longer apply 15 days after the date of the final decision in this case. In Article 47 of regulation no. 556/2023, it states that if ECOI makes a decision to withdraw obligations that have been in force, the Authority shall prescribe a reasonable glidepath for access seekers before they are withdrawn. In Europe, this period of notice has often been 6 months. As ECOI notified in its provisional decision from 15 September 2023 that the reasonable glidepath would then immediately commence, it is clear that the market was then informed that the intention was to withdraw obligations from Mila in specific areas on the relevant wholesale markets. In the light of the above there is no need for a longer glidepath than specified above.