Appendix A

PÓST- OG FJARSKIPTASTOFNUN

Analysis of the wholesale market for trunk segments of leased lines

(Previously Market 14)

1 July 2015

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Summary and Conclusions

This document contains a draft by the Post and Telecom Administration (PTA) of an analysis of the wholesale market for trunk segments of leased lines, which is Market 14 in the ESA Recommendation from 2004 which is no longer in force. The market analysis is the basis for decisions on whether to impose, maintain, amend or withdraw specific regulatory obligations on electronic communications undertakings that have been designated as having significant market power.

An analysis of this market was previously made in the year 2007. The conclusion of that analysis was that there were two geographical markets, i.e. on the one hand the capital city area and on the other hand the countryside. Siminn and Mila, who both belong to the Siminn Group, were both designated as having significant market power in both market areas and obligations were imposed on those companies for:

- Access
- Non-discrimination
- Transparency
- Accounting separation
- Price control (based on historical costs)

The PTA has now made a new analysis of this market. The PTA reviewed the definition of geographical market and considered there to be no reason to retain the division between the capital city area and the countryside. This means that the market is now considered to embrace the whole country.

As this market is no longer listed in the ESA Recommendation on relevant markets it is necessary to evaluate whether it still fulfils the conditions to be susceptible for ex-ante obligations (the Three Criteria Test). It is the planned PTA conclusion that the market still fulfils these conditions, i.e. that high and non-transitory barriers still exist to entry to the market, that the market is not tending towards active competition and that the general rules of Competition Law will not suffice on their own to address failures in the market. In this country, circumstances pertain where on many transit routes there is only one service provider and the EU Commission has considered that such circumstances can justify continued intervention in the market with the imposition of appropriate obligations.

The planned conclusion of the analysis in this instance was that circumstances on the market have not changed significantly from the circumstances that pertained in 2007. All wholesale of leased lines within the Siminn Group have been transferred to Mila which means that Siminn therefore no longer operates on this market. The number of companies on the market is more or less the same as in 2007. The PTA considers that high and non-transitory entry barriers exist to the market and that active competition cannot be expected within the next two to three years. Mila still has an overwhelmingly dominant market share, whether measured by revenue from leased lines or by number of active connections.

The PTA therefore intends to designate Mila again as having significant market power on the market for trunk segments of leased lines. The designation of Siminn as an undertaking with significant market power on this market is on the other hand withdrawn as are also the obligations that were imposed on Siminn.

The obligations that the PTA intends to impose on Mila on the relevant market are the following:

- Access
- Non-discrimination
- Transparency
- Accounting separation
- Price control (based on historical costs)
- Cost accounting

1.0 Introduction

1.1 General

1. This document contains the Post and Telecom Administration (PTA) draft analysis of the wholesale market for trunk segments of leased lines (previously Market 14). The PTA published an analysis of this market, along with its Decision on obligations on undertakings with significant market power, on 14 September 2007. It is assumed that market analyses will be repeated at regular intervals in order to monitor whether circumstances have changed on the market. This analysis has suffered significant delays for a number of reasons. On completion of this analysis there is no PTA market analysis in force that is more than 3 years old.

2. The analysis is divided into three main parts. First, there is a definition of the relevant service market and its geographical demarcation. Then an assessment is made of whether the market fulfils the criteria to be susceptible to ex-ante obligations being imposed on companies on the market (the Three Criteria Test). The next step is that the market that has been geographically defined is analysed and it is determined whether competition is active or whether one or more undertakings on the market have significant market power. It is finally evaluated whether it is appropriate to impose, maintain, amend or withdraw obligations on undertakings on the market.

3. This document is based on draft conclusions and on the PTA Decision on the relevant market. The PTA submitted a draft for national consultation on 23 December 2014 where electronic communication companies, the Competition Authority and other stakeholders were invited to comment on the market analysis and its conclusions, see Article 6 of Act no. 69/2003 on the Post and Telecom Administration. The consultation was completed on 24 2015. Comments from stakeholders and the PTA position on these comments is presented in a separate document (Appendix B). The market analysis was revised in accordance with comments that were taken into account. The market analysis and the Draft Decision on obligations on the relevant market is now sent to the EFTA Surveillance Authority (ESA) for consultation pursuant to Paragraph 1 of Article 7 of the above specified Act no. 69/2003. Should ESA raises no significant objections to the analysis and PTA conclusions, the Decision based on the draft will be notified to the companies in question.

4. Markets are in a state of continuous development and must therefore be examined again within a reasonable period of time. In making market analysis, attention is paid to projected development in the near future, to the extent that this is possible. The period that a market analysis is intended to cover depends to a certain extent on the characteristics of the relevant market, but as a rule of thumb one could expect conclusions of an analysis to apply for two to three years.

1.2 Electronic communications legislation

5. The Electronic Communications Act no. 81/2003 implements the European Union Directives on Electronic Communications.[1] EU electronic communications legislation is

[1] Directive of the European Parliament and Council no. 2002/19/EEC from 7 March 2002 on access to and interconnection of, electronic communications networks and associated facilities (Access and Interconnection Directive)

intended to create a homogenous working environment for electronic communications undertakings in Europe, to limit barriers and create conditions for sustainable competition for the benefit of consumers.

6. The Electronic Communications Act obliges the PTA to define certain electronic communications markets, both in terms of service and product types and in terms of geographical dimension in accordance with the fundamental principles of Competition Law and the obligations pursuant to the European Economic Area (EEA) Agreement. Furthermore, the PTA is required to analyse the defined markets and determine whether they are characterised by active competition. If the PTA comes to the conclusion that there is active competition in the relevant market – that is that no operator has significant market power – it is prohibited from imposing obligations on the operators in that market. If the Administration has previously imposed obligations on undertakings in the relevant market, these shall be withdrawn and no new obligations imposed. Should on the other hand the PTA come to the conclusion that competition is not active on the relevant market because one or more undertakings has significant market power, then the Administration is obliged to designate it as having significant market power and to impose appropriate obligations.

7. The European Commission has published Explanatory Notes and Recommendations on market analysis. On the one hand there is the Explanatory Note on market analysis and assessment of significant market power[2] and on the other hand there are Recommendations on the relevant markets.[3] The EFTA Surveillance Authority (ESA) has published analogous Guidelines[4] (hereafter called "Guidelines"). The ESA Recommendation[5] on the relevant market (hereafter called "Recommendation") is however still analogous to the prior Recommendation from the EU Commission from 2009. The PTA will take into account both the Recommendation from ESA and its guidelines when making the market analysis here in question. In addition, the Administration will consider the report by the European Regulatory Group of National

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Directive of the European Parliament and Council no. 2002/20/EEC from 7 March 2002 on the provision of authorisation for electronic communications networks and service (Authorisation Directive).

Directive of the European Parliament and Council no. 2002/21/EC 2002/21/EC, of 7 March 2002, on a common regulatory framework for electronic communications networks and services (Framework Directive).

Directive of the European Parliament and Council no. 2002/22/EC from 7 March 2002 on universal services and user rights 2002/22/EC, of 7 March 2002, on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive).

Directive of the European Parliament and Council no. 2002/58/EC, of 12 July 2002, concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

[2] Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic networks and services, 2002/C 165/3.

3 Existing regulations are: 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 (notified under document number C(2014) 7174).

[4] EFTA Surveillance Authority Guidelines of 14 July 2004 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.

[5] Existing regulations are: EFTA Surveillance Authority Recommendation of 5 November 2008 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with the Act referred to at point 5cl of Annex XI to the EEA Agreement (Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services),as adapted by Protocol I thereto and by the sectoral adaptations contained in Annex XI to that Agreement.

Regulatory Authorities (ERG[6]) concerning obligations that may be imposed on electronic communications undertakings with significant market power in order to promote competition[7], along with other reports from BEREC which is the institution that took over from ERG in 2010.

8. In the existing ESA Recommendation on the relevant markets, seven electronic communications markets have been predefined that the PTA is obliged to analyse in accordance with the electronic communications legislation currently in force and with Iceland's obligations according to the EEA Agreement. Furthermore the electronic communications legislation prescribes that the PTA define these markets in accordance with circumstances that pertain in Iceland. In this connection it could be the case that the PTA market definition would vary from that prescribed in the Recommendation. The PTA is also authorised to investigate all relevant electronic communications markets in connection with market analysis, regardless of whether or not they are listed in the Recommendation. In a prior ESA Recommendation from 2004, eighteen markets were defined including the wholesale market for trunk segments of leased lines. This market is not to be found in the current Recommendation which means that it has to be particularly examined in the light of circumstances pertaining in this country, as to whether it still meets the criteria to be susceptible to ex-ante obligations according to Chapter 7 of the Electronic Communications Act.

9. The Regulation on Market Analysis in the field of Electronic Communications no. 741/2009 was set pursuant to the authority of Articles 18 and 75 of the Electronic Communications Act. 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 according to the Electronic Communications Act no. 81/2003. The Regulation is based on the above specified EU instruments, Recommendations and Guidelines.

1.3 The PTA implementation of market analysis

10. The implementation of market analysis is generally divided into three phases:[8]

1) Define the relevant service markets and geographical markets.

2) Analyse each of the defined markets, assess whether competition is active on the markets and decide whether one undertakings or more undertakings has significant market power.

3) Make a decision on whether obligations shall be imposed, amended or withdrawn on undertakings with significant market power.

11. With respect to markets no longer in the ESA Recommendation, it further needs to be evaluated whether the market still fulfils the conditions to be susceptible to the imposition of ex ante obligations (the Three Criteria Test) on companies on the market. The criteria in

[6] Abbreviation for “European Regulatory Group of National Regulatory Authorities”.

[7] Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework. Final Version May 2006. ERG (06) 33. The document can be seen here: http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

[8] See further: The PTA information brochure on market analysis. Last updated in August 2009. http://www.pfs.is/upload/files/Kynningarrit_um_markaðsgreiningu_ágúst_2009(1).pdf

question are as follows:

1) That there exist high and non-transitory barriers to entry;

2) That active competition cannot be foreseen during the reference period;

3) That the application of existing Competition Law would not on its own suffice to provide remedies where the market has failed.

12. This market analysis is based inter alia on replies from parties to the market to questionnaires that were distributed 18 June 2012 and 13 June 2013. The statistics on which the analysis is based are thus from the end of 2014. The Administration has collected information including regular statistical data and has requested specialised statistical data on the relevant market and has had informal communications with parties to the market. Statistics on the electronic communications market are collected from all parties to the market at six monthly intervals. In addition to this, the PTA collects and registers information on all changes to tariffs as they take place.

13. A preliminary draft of this market analysis was presented to the Competition Authority and to stakeholders on 23 December 2014 and they were asked to make observations. The PTA then processed the received comments and reports on them in a separate document (Appendix B). The market analysis was updated in accordance with the comments that were taken into account. The market analysis and Draft Decision with respect to obligations on the relevant markets are now sent to the EFTA Surveillance Authority (ESA) for consultation, see Paragraph 1 Article 7 of Act no. 69/2003 on the Post and Telecom Administration. Should ESA make no observations on the market analysis and on the draft PTA Decision then the Decision will be notified to the companies in question.

1.4 On market analysis

14. According to Article 16 of the Electronic Communications Act no. 81/2003 as amended, the PTA shall define service or product and geographical markets in accordance with the main principles of Competition Law and with obligations pursuant to the EEA Agreement. It must be assessed whether markets as defined in the ESA Recommendations harmonise with Icelandic circumstances.

15. In 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 products and services are defined as products or services that can, wholly or to a significant extent, take the place of other products or services not only on the basis of the objective characteristics of the product in question, the purchaser's intended use of them and their price, but also with respect to competition requirements and/or conditions relating to supply and demand. Products that can compete with one another are therefore called substitute products and each market consists of products that are mutually substitutable. Products that can be substituted for one another only to a limited extent are not considered to belong to the same market.

16. Substitutability is assessed from two points of view. 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).[9] Demand-side substitutability is considered fundamental to market definition, while supply-side substitutability is less meaningful and is often rather related to an assessment of potential competition.

17. When a service market has been defined, its geographical dimension must be defined. The main rule is that it is based on the scope of the electronic communications network and the legislative jurisdiction of the regulatory framework that applies to it. Geographical demarcation is also based on an assessment of substitutability of the product or service in question, on the supply side and on the demand side. The geographic market is the area where products or services are offered on sufficiently homogeneous competitive terms. In assessing demand-side substitutability, it is appropriate to consider customers' tastes and geographical purchasing patterns. Furthermore, pricing of service provides an indication of geographical definition of a market. On the basis of this, it is possible to define markets as local, regional, national, or transnational; i.e. extending to more than one country. The PTA does not however have the authority to define transnational markets on its own initiative. If a market is considered to extend to more than one country, European regulatory authorities collaborate on the market definition together with the European Commission and ESA if appropriate.[10]

2.0 Definition of the service markets for trunk segments of leased lines

2.1 Definition in the ESA Recommendation

18. The service market being examined here is equivalent to Market 14 in the older ESA Recommendation from 2004 and is called "the wholesale market for trunk segments of leased lines".

19. In the EU Commission Explanatory Note from 2003 on the relevant market, which is analogous to the ESA Recommendation from 2004, there was no detailed description of this market. According to the explanations, leased lines have dedicated connections and transmission capacity. It is stated that at wholesale level it is possible to distinguish between terminating segments and trunk segments. The boundaries between these two wholesale markets depend on the network topology in question and will be specifically decided by each individual State.

20. When the Commission reviewed its Recommendation in 2007 it came to the conclusion that development of new networks on the main transit routes in member states indicated minor access barriers and that the market tended towards active competition in a majority of EU states. For this reason, it was decided to remove it from the Recommendation. In the EU Explanatory Note it was however noted that on thin transit routes there could be a lack of competition which could lead to the existence of conditions for imposition of obligations. The ESA issued an analogous Recommendation in 2008 where this market was no longer considered to be among the relevant markets.

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[9] See further Paragraph 39 in the Guidelines and the Explanatory Memorandum the EU Commission Recommendation, Chapter 3.1.

[10] Definition of the geographical dimension of markets is discussed in Chapter 2.2.2 of the ESA Guidelines and also in the COMMISSION NOTICE on the definition of the relevant market for the purposes of Community competition law. (OJ C372 9/12/1997) and BEREC Common Position on Geographic Aspects of Market Analysis (definition and remedies) – BoR (14) from 5 June 2014.

21. Despite the fact that this market is no longer part of the ESA Recommendation it is necessary to re-examine the market as there are currently obligations in force on this market that were imposed by the PTA with its Decision dated 14 September 2007. It has to be established whether the circumstances are currently such in this country that it is justifiable to intervene in this market and a decision has to be made on whether the obligations should remain in force, amended, or withdrawn. As in the previous analysis of this market the PTA bases its work on the definition of the market as presented in the ESA Recommendation from 2004.

2.2 The PTA definition of the relevant service markets

22. In its analysis of Market 14 which was published in its final edition on 14 September 2007, the PTA defined the wholesale market for trunk segments of leased lines. This definition is based on the definition in the ESA Recommendation from 2004, taking into consideration the Explanatory Note to the EU Commission Recommendation then in force.

23. In the analysis it was stated that in the trunk segments of leased lines, data transfer capacity was sold to electronic communications undertakings for the purpose of interconnection of their networks and distribution locations. The market was considered to cover digital lines with all possible technologies and data transfer media. It was stated that there were normally telephone exchanges between user lines and trunk lines in Iceland which created a physical distinction between these two types of lines. Furthermore, trunk lines were now in most instances fibre-optic, whereas traditional telephone lines had been used in the past. In addition to this, trunk lines were sometimes wireless connections, for example longwave or microwave connections.

24. The PTA considers that the former definition of the market still applies. Discussion on the definition and demarcation of the market in the following text is thus mostly analogous to that in the previous analysis. The PTA however considers that it is necessary to investigate whether there have been changes in the circumstances on the market in this country, including changes with respect to the service offer that could call for changes to the definition or whether new services have emerged based on new technology that fall within the scope of the market.

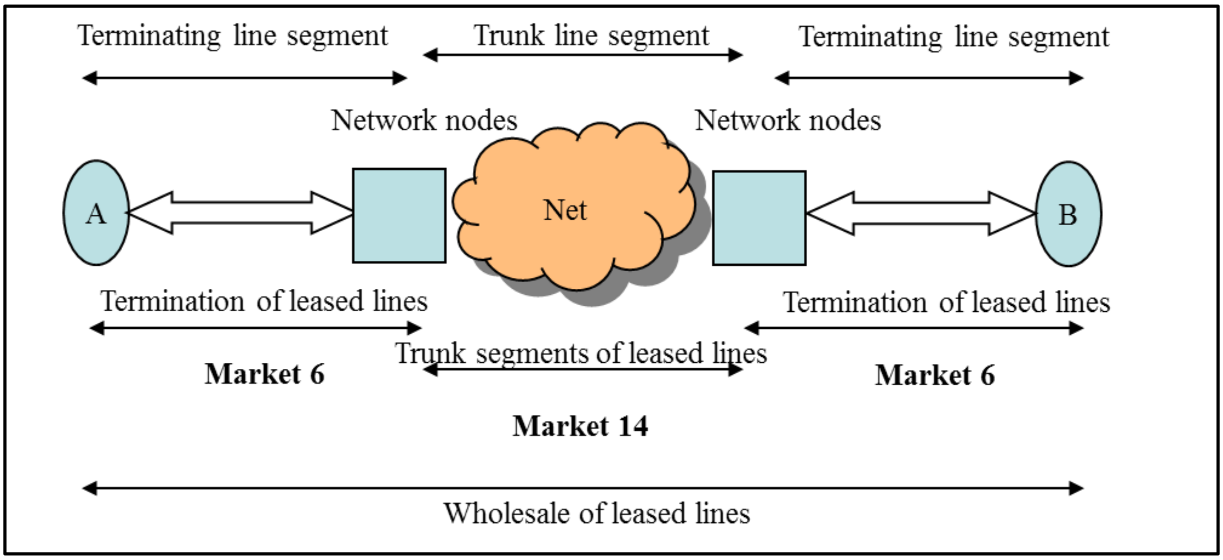
2.3 The boundaries between markets for trunk segments of leased lines and terminating segments (M6)

25. Wholesale of trunk segments that belonged to the old Market 14, cover transit routes between telephone exchanges and distribution locations. The function of a trunk line is to make connections between a network operator’s network and distribution locations. In general trunk lines have greater capacity and can be much longer, for example reaching between parts of the country and regions.

26. Wholesale of terminating segments of leased lines, which is covered by Market 6, incorporates on the other hand connection routes in the access network between node points/telephone exchanges and users where such connections are used by companies to offer a variety of services to end users. These services are for example data transmission and fixed line voice telephony.

27. Leased lines that are considered on the one hand to belong to trunk segments and on the other hand to terminating segments can be seen in figure 2.1

Figure 2.1 Terminating and trunk segments of leased lines



Source: Post and Telecom Administration

28. User lines and connections are usually on copper or fibre-optic lines. Lines lie between the user and the node point/telephone exchange and connect users to one point where the trunk line system takes over. In the trunk line system, data from many users is transmitted between node points/telephone exchanges where the trunk lines can normally carry a greater volume of information and more connections than user lines. Trunk lines are usually fibre-optic or radio connections while the terminating segment may also be copper, as usually the same electronic communications network is used as that which forms local loops to the public.

29. Despite this difference between the markets in question, the fact of the matter is that they are closely related. The trunk line network requires the terminating segment to be able to connect to end users and the terminating segment needs the trunk segment to connect end users if they are not connected through the same node point, i.e. in the same telephone exchange locality. It is also the case in some instances of dedicated connections that it can be difficult to distinguish between where the trunk line ends and the termination begins and vice versa.

2.4 Varying forms of leased line

2.4.1 Transmission media

30. Leased lines are electronic communications infrastructure which provide for transparent transmission capacity between network termination points and which do not include on-demand switching. Leased lines are in most instances symmetric lines. In the EU Recommendation, reference is made to dedicated transit capacity and connections which is a definition of the traditional leased lines. Capacity between points that is not specifically dedicated to one user can be managed in in such a manner that it is comparable to what is provided with traditional leased lines. Transmission media for leased lines can variously be copper, fibre-optic, radio connections or channels in multichannel systems in trunk lines. Leased lines can either be analogue or digital.

31. A leased line on copper generally has two copper pairs often called 4-wire lines. Today such lines are almost exclusively used in the terminating segments of leased lines.

32. Fibre-optic connections have increased rapidly in recent years. The lease of fibre-optic connection can variously be through endpoint devices or without endpoint devices (dark fibre).

33. Radio connections connect to locations with antenna that are directed at each other. The connection is defined in such a manner that only these two locations can achieve contact with each other. Radio connections are now used mostly in sparsely populated areas where there is no option of other connections or whether they are not financially feasible because of distance or other reasons. Such connections can however be found in urban areas because such solutions can often be more economic than leased lines in the ground. The capacity can be from tens of Kb/s to hundreds of Mb/s.

2.4.2 Types of service and communication protocols

34. The conclusion of the previous analysis was that many communications protocols and regulated services were on the same market as traditional leased lines. The PTA considered there to be no reason to divide the market by capacity of connections or by the technology used. In this connection one can inter alia note the main principle of the European regulatory framework of technical neutrality.

35. In the prior analysis of the leased line market from 2007 the PTA discussed the transmission options available at that time. The same transmission options are still available on the market today but the weighting of specific methodologies has however changed significantly. The main transmission possibilities are the following and they will be explained here below:

a) Asynchronous transfer mode (ATM)[11]
b) Pre-specified quality transmission with Internet protocol (for example IP-MPLS) [12]
c) Frame Relay
d) Ethernet and Ethernet VLAN[13]
e) Symmetrical digital subscription lines (e.g. G.SHDSL) [14]
f) Asymmetric digital subscriber lines (ADSL/VDSL)[15]
g) Wavelength division multiplexing (WDM)[16]
h) SDH/PDH
i) MPLS-TP

(a) Asynchronous transfer mode (ATM)

36. ATM is a communications protocol which is suitable when varying bandwidth is required. ATM gives the possibility of competing on access to the service according to those solutions specified by network variables or by priority of data and can provide the same level of service as dedicated transmission capacity. In recent years connections using the ATM standard have decreased significantly as many companies have migrated to the IP-MPLS standard. There are however many old connections still active and asynchronous transfer mode is still common.

[11] Asynchronous Transfer Mode.
[12] Internet Protocol. – Multiprotocol Label Switching.
[13] Virtual Local Area Networks.
[14] Symmetric Digital Subscriber Line.
[15] Asymmetric Digital Subscriber Line.
[16] Dense Wavelength Division Multiplexing.

37. ATM provides service which from the user's point of view is the equivalent to a traditional leased line. This transit option is first and foremost used for trunk segments of leased lines.

(b) Pre-specified quality transmission with Internet protocol (IP-MPLS)

38. In IP networks the destination of a package is normally not defined at the point of origin or when allocating capacity when it reaches the access connection points but rather the destination is decided by the IP address put on the package by the user. IP networks can be used for packages to one user or many. There are various types of IP networks of which IP-MPLS is one[17].

39. IP networks can be set up with MPLS in such a way that a kind of tunnel is formed through the network which offers the possibility of a permanent virtual route between two network connection points. The virtual route is a simulation of capacity between network connection points. In this instance one can consider that IP-MPLS provides a service equivalent to a traditional leased line and one can conclude that IP-MPLS can be the functional equivalent of a leased line where other conditions are fulfilled such as that the user has access to specified bandwidth. Where this is the case it is immaterial if the service is provided over an IP network.

40. IP solutions that allow the user to send data and to have the option of sending data to various destinations with a command to that effect, for example in the form of transmission capacity from one location to another, do not have functional characteristics equivalent to those of traditional leased lines. One can assume that IP provides additional flexibility in that customers do not need to specify, when installing, that connection possibilities should only be between two points and in that they can easily and with great flexibility change the setup to reach many locations.

41. Should the arrangement be removed in IP networks for line switching which facilitates the setup of transmission capacity to many network connection points, possibilities for use of the line will simply be limited to transmission capacity between network connection points. This could thus be either a private channel between operational bases or between an operational base and the access point of the service provider, for example for access to the Internet.

42. The PTA considers that an IP service that allows line switching controlled by user commands which can enable connections to many destinations, is not the equivalent of a traditional leased line. However when an Internet protocol connection, for example MPLS, is solely used to enable connections between two network connection points then this is seen as the equivalent of a traditional leased line.

(c) Virtual network using Frame Relay standard

43. Frame Relay is packet switching technology that uses bridges, routers or Frame Relay

[17] According to the decision of the Competition Authority (CA) no. 6/2013 dated 26 March 2013, the Settlement between CA and the Siminn Group was confirmed. With this Settlement, a number of tasks previously handled by Siminn were transferred to Mila, such as tasks related to leased lines and bitstream access. However, the Siminn IP-MPLS system was exempted from this transfer and thus remained with Siminn. It was however prescribed that it must be ensured that Mila had the access to the Siminn IP-MPLS system necessary for serving Mila bitstream systems until that point in time when Mila had developed its own such system for the purpose of offering wholesale bitstream service. Mila was given one year to develop its own system which would enable Mila to offer bitstream access. According to this, Mila does not operate an IP-MPLS system but has been developing a MPLS-TP system among other things for the above purpose and this system will be described in Item i here below.

Access Device (FRAD). Such equipment collects data which it converts to Frame Relay packets which are sent at varying bit speeds. A common use of Frame Relay is for transmission of small amounts of data between network connection points as is the case with ATM.

44. Frame Relay is similar to ATM in that it provides an analogous service and dedicated capacity. Frame Relay is normally used to offer shared capacity which provides end-users with the option of receiving information as it was sent without suffering data loss or corruption. For this reason Frame Relay is considered to have analogous characteristics to those of traditional leased lines. There is diminishing use of Frame Relay technology and a steady reduction in users. The PTA considers that Frame Relay is not used in the trunk segments of leased lines today.

(d) Ethernet and Ethernet VLAN

45. Varying types of connections are offered in Iceland. Some types are very similar to leased lines but there are also Ethernet connections that differ from leased lines. Lines with Ethernet connection interfaces (i.e. bandwidth that is dedicated and not shared with other traffic) clearly fit the definition of leased lines. Ethernet VLAN service is operated on a shared network. Although VLAN connections are shared, this service can provide comparable characteristics to those of lines with Ethernet connection interfaces.

46. In general Ethernet is not used for voice services (although Ethernet connections can support VoIP), ISDN, VPN or data on other communication protocols. Abroad there is growing use of Ethernet connections, particularly on shorter routes, and connections through Ethernet have also become established in this country during the past years.

47. In order to provide an Ethernet connection the user needs to have special connection equipment at the endpoint. The same kind of equipment is required at the other end of a leased line, which usually means a telephone exchange or a node point. Ethernet can be provided both over copper and fibre-optic. Ethernet VLAN or lines with Ethernet ports provide a service equivalent to traditional leased lines. Ethernet connection equipment, network switches and routers, are a common product and readily available which is one of the reasons for the popularity of Ethernet solutions in recent years.

(e) Symmetric digital subscriber lines (G.SHDSL)

48. G.SHDSL is digital subscriber line technology used on copper local loops which establishes a digital connection. DSLAM set up in exchanges passes on high-speed DSL data traffic. G.SHDSL technology offers symmetric transmission capacity because it allows sending with the same bit speed in both directions.

49. G.SHDSL is analogous with other technology used to offer leased lines with relatively limited bandwidth. G.SHDSL creates symmetric transmission capacity between network connection points. The characteristics of G.SHDSL mean that G.SHDSL could possibly be substituted for the use of a leased line which is carried in a transmission system operating according to SDH/PDH standards, because G.SHDSL offers symmetric transmission capacity which can be used for a variety of purposes and is flexible with respect to the service being transmitted.

50. From the user point of view, G.SHDSL has similar characteristics to those of traditional leased lines but it is only used in termination segments of leased lines and as such does not belong to the market for trunk line connections.

(f) Internet access through Asymmetric digital subscriber lines (ADSL & VDSL)

51. Asymmetric digital subscriber lines such as ADSL and VDSL can be used for broadband data transfer, for example in the Internet or in company computer networks. Such service enables users to have a continuous connection for a fixed fee. ADSL was for many years the most common broadband service for copper lines in this country but VDSL is rapidly gaining ground because of Mila's development of the system in the capital city area and elsewhere. There are now more VDSL connections than ADSL and this development will doubtless continue in the near future.

52. Leased lines can be used to connect to the Internet. In this connection the question arises as to whether ADSL/VDSL gives the option of being used as an equivalent to a traditional leased line. Symmetric transmission capacity of leased lines refers to the ability to send and receive data at the same bit speed. In ADSL/VDSL the user cannot on the other hand send data with the same bit speed as he can receive services, so the service is not symmetric.

53. ADSL/VDSL thus differs from traditional leased lines in that it does not have symmetric data transfer speeds so this service cannot be a substitute for leased lines and in addition to this, xDSL technology is solely used in access networks and thus does not belong to the market for trunk line connections.

(g) Wavelength division multiplexing in fibre-optic (WDM)

54. Wavelength division multiplexing (both CWDM and DWDM[18]) is a technology which multiplexes a number of optical carrier signals, each with its own wavelength onto a single optical fibre where the number of optical fibres would be normally 4-40 or even more. Each pair of optical fibres is carried with bidirectional communication and one can use two fibres in one thread, as is required for a leased line according to its definition. The transmission capacity of each optical fibre is from 2.5 GB/s to 40 GB/s which can increase as the transmission capacity of each optical fibre increases as technology develops. The capacity of each optical fibre is symmetric.

55. WDM is usually sold and used as a carrier layer to network operators who then divide it into smaller units for selling on. When WDM has been divided into smaller units then it is often used as a backbone network for general network connections and is located between network operator telephone exchanges. WDM is a high-speed network protocol that electronic communications companies employ to make better use of fibre-optic ground cables by making many parallel connections on one optical fibre. WDM is a technical solution which gives the option of symmetric transmission capacity comparable with SDH, IP and ATM.

56. DWDM has a very high capacity but at the same time it is rather expensive. WDM is thus mostly used in trunk connections and is not uncommon in the terminating segments of leased lines.

(h) SDH/PDH

57. SDH/PDH are methods to interlace many channels with little bandwidth in fewer channels with higher bandwidth and vice versa. SDH stands for Synchronous Digital Hierarchy and PDH for Plesiochronous Digital Hierarchy. PDH is the original technology for interlacing which is used in 2 Mb/s and 34 Mb/s systems and SDH is the technology for data transfer in synchronous fibre-optic networks with bandwidth in excess of 34 Mb/s. SDH uses the following

[18] Coarse Wavelength Division Multiplexing & Dense Wavelength Division Multiplexing.

units (Synchronous Transport Modules STM) and capacity: STM-1 (155 Mb/s), STM-4 (622 Mb/s), STM-16 (2.5 Gb/s), STM-64 (10 Gb/s), STM-256 (40 Gb/s)).

(i) MPLS-TP

58. MPLS-TP is a new service based on Ethernet technology and is a kind of development of older SDH technology leased lines. MPLS-TP has inter alia the advantage over SDH that it is possible to define varying priority for data packages. Each connection can have reserved guaranteed bandwidth and joint use of bandwidth is possible or extra bandwidth can be supplied for a limited period of time (bursting) and in addition to this there is separation with virtual networks (V-LAN). As previously stated, Mila is developing a substantial MPLS-TP network among other things to replace the IP-MPLS network to which the company initially had access through Siminn subsequent to the above specified Settlement between CA and Skipti in 2013. The Mila MPLS-TP system is also intended to replace the company's older SDH/PDH system and to thus become the kernel in a company's trunk line service.

2.4.3 The capacity of leased lines

59. The capacity of leased lines depends very much on the protocols being used on them and the kind of carrier technology being used. Table 2.1 shows the main capacity on offer for each type of protocol.

***Table 2.1. The most common data transfer capacity of leased lines*[19]**

Protocols	Most common transmission capacity
IP-MPLS	256 Kb/s, 512 Kb/s, 2 Mb/s, 4 Mb/s, 6Mb/s, 10 Mb/s and 100Mb/s
ATM	2 Mb/s up to 155 Mb/s
Ethernet	2 Mb/s, 4 Mb/s, 6 Mb/s, 8 Mb/s, 10 Mb/s, 20 Mb/s, 48 Mb/s, 100 Mb/s and 400 Mb/s
Gigabit connections (Ethernet)	From 512 Mb/s to 10 Gb/s
SDH/PDH	64 Kb/s, 128 Kb/s, 256 Kb/s, 512 Kb/s, 2 Mb/s, 45 Mb/s, 155 Mb/s and 622 Mb/s
MPLS-TP	10 Mb/s, 100 Mb/s, 200 Mb/s, 300 Mb/s, 400 Mb/s, 1 Gb/s, 3Gb/s, 10 Gb/s
Wavelength division multiplexing (WDM, CWDM, DWDM)	Undefined
Dark fibre	Undefined

Capacity (data transfer speed) specified in the above specified table is for the purposes of example. Other data transfer speeds offered in trunk line connections belong to the market even where not specifically mentioned here above.

[19] This is not an exhaustive list of communication protocols and transmission capacity.

2.4.4 Predefined connection points

60. Line switching is not included in the definition of leased line which means that the user cannot direct the transmission of signals to other network connection points than those that were specified when the leased line was ordered. The arrangement where the user can send data which should be directed at a destination that was not defined when the line was ordered, as can be the case with IP VPN service, is not included in leased lines. Leased line thus corresponds to capacity between fixed locations that are decided when the line is ordered, either the subscriber's operational locations or between a subscriber and a service provider. In both instances the line is dedicated to the subscriber in question.

61. It is possible to set up leased lines in multiple equipment on trunk line networks and such equipment is also possible to use in access networks if this is required. The PTA considers that when leased lines are connected from one network termination point to many they can be considered to be in accordance with the definition as long as the user cannot switch destination for each individual line. Capacity on ATM virtual channels is also considered to be within the definition of leased lines if the virtual channels are decided when the leased lines are set up. It is somewhat different with IP networks as the destination is decided in each instance by an IP address selected by the user. Such use is not compatible with the definition of leased line. An exception to this is a connection on a line according to IP standard when two network termination points are connected together as is done with traditional leased lines.

2.5 The PTA conclusion with respect to definition of the relevant service markets

62. The PTA considers that the definition of the market for trunk segments of leased lines should basically be the same today as it was in 2007. This is a market for transmission capacity which is sold to electronic communications undertakings for the purpose of interconnection of their networks and distribution locations. The market covers lines with all possible technologies and data transfer media. Trunk lines are often based on digital technology but in some instances the base lines are leased without endpoint devices. There are normally telephone exchanges between user lines and trunk lines in Iceland which creates a physical distinction between these two types of lines. Trunk lines are normally fibre-optic cables but traditional telephone lines and wireless connections can also belong to the market where they are used as trunk lines.

63. Leased line markets do not cover switching of lines, i.e. service which allows the user to decide varying destinations for the transmission of signals in each instance that they are sent. A service which connects one network connection point with many could on the other hand be considered a leased line if all points were predefined when the service was set up.

64. Some changes have taken place on the market since the previous analysis with respect to use of specific communication protocols and transmission media. Some technical solutions are currently used less than in 2007 while the use of others has increased. The same transmission media and communications protocols do however exist on the market today as in 2007. With respect to communications protocols, the development has tended towards an increasing use of IP-MPLS solutions. Mila has also recently taken a MPLS-TP system into use which is directly aimed at trunk line connections. The technology offers many options that customers have been looking for in IP-MPLS solutions but it is in some ways easier in operation and more specialised as a backbone network for other electronic communications services. MPLS-TP can also be used to simulate or duplicate various quality definitions in Ethernet connections for the purpose of controlling or prioritising traffic in a similar manner as is done with Ethernet and for this reason it is well-suited to carry IP traffic in a similar manner to Ethernet. MPLS-TP attributes

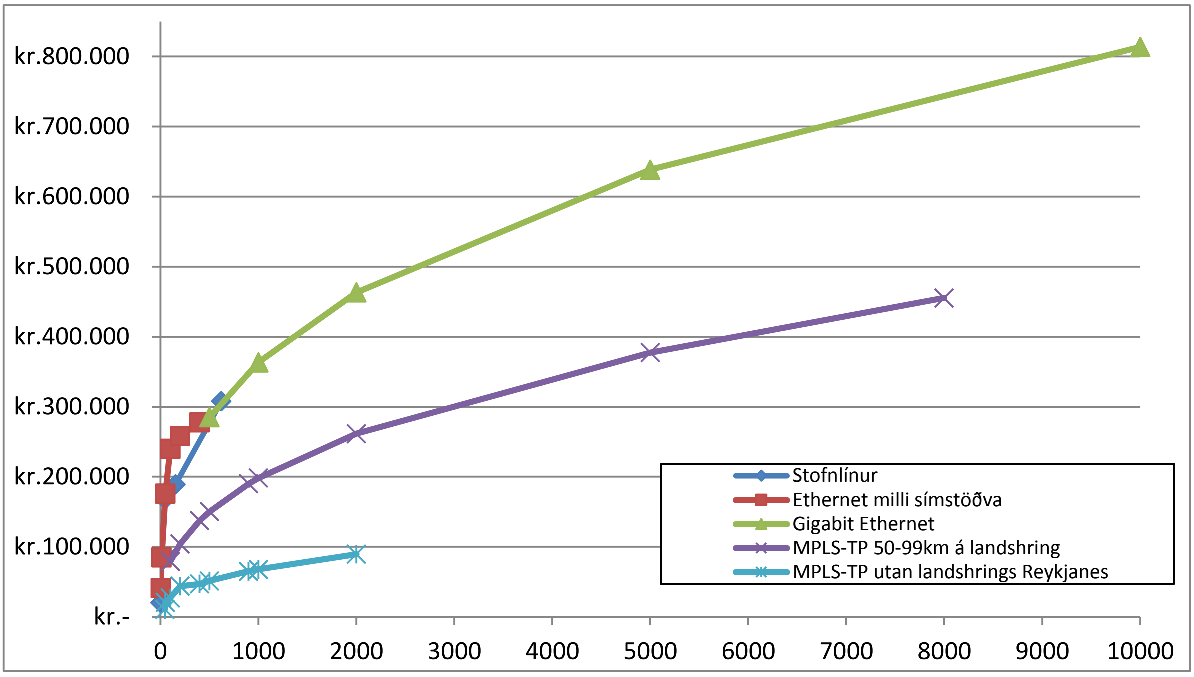
are however to some extent unsuitable in access networks but more suitable in trunk connections while Ethernet is suitable both in trunk networks and for access connections.

65. The traditional definition of a leased line is a permanent connection for sole use of the leasing party with symmetric capacity. This definition of a leased line originates in the traditional telephone system and the concept has been used for decades for such lines, though their flexibility has increased with the development of electronic communications technology and with the advent of fibre-optic and new communications protocols which enable increased capacity in data transmission.

66. For a service to be considered a leased line it must fulfil certain conditions, i.e. it must be a permanent connection between two or more connection points on fixed locations where all connection points are defined prior to setup of the lines and which must be for the sole use of the party leasing the lines and must provide symmetric transmission capacity. Though capacity can vary significantly on such lines one must consider them to belong to the same market as the difference is a matter of degree and not of nature, and communication protocols which provide similar transmission capacity are thus substitutes for each other. One must however keep in mind that substitutability is likely to be in one direction when a connection with less capacity is replaced by a connection with greater capacity and also when copper connections are replaced by fibre-optic connections. When substitutability is examined on the basis of comparison between leased lines with SDH communication protocol (traditional trunk line) as the main product on the market, with newer solutions such as Ethernet communication protocols one can see that the price is virtually the same for comparable capacity as is shown in figure 2.2. The new product on the market, MPLS-TP, is priced lower than described by Mila because of significantly more economic investments in equipment and because of greater automation in operation of the system by using the newest information technology in remote control and monitoring. When substitutability is from a primary product to an alternative product, both products are considered to belong to the same market though substitutability may possibly not be the same in the other direction.[20] In the same way, a company which has increased needs can upgrade its leased line a number of times which can lead to a kind of chain of substitution[21].

[20] BoR (12) 52, BEREC report on fixed-mobile substitution in market definition, May 2012.
[21] BoR (10) 46, BEREC report on relevant market definition for business services, February 2011.

Figure 2.2 Mila tariff for 50 km trunk lines



Source: Mila website September 2014.

67. Though a chain of substitutability is normally driven by retail and although wholesale of trunk lines is mostly used by purchasers for the development of their own electronic communications networks and although connections are rarely resold in direct resale to end users, the PTA considers the above chain of substitutability to apply when an electronic communications company considers expanding connections which it purchases in wholesale because of increased needs in its network operations. Such a chain of substitutability will thus mean that newer communications protocols and transmission media are on the same market as older ones. This is particularly the case where there is not always a significant difference in capacity of connections on trunk lines but rather increased flexibility and a more economic operational environment of the newer communications protocols.

68. After discussion on the possible options for providing leased line services it is the conclusion of the PTA that the communications protocols and transmission media in use today and that belong to the relevant market, are the following:

Protocols

- Asynchronous transfer mode (ATM)
- Pre-specified quality transmission with Internet protocol (for example IP-MPLS)
- MPLS-TP
- Ethernet and Ethernet VLAN
- SDH/PDH
- Wavelength division multiplexing (WDM, CWDM and DWDM)

Transmission media

- Dark fibre (without endpoint devices)
- Copper (or other metal threads)
- Wireless connection

3.0 In general on development and status of the market

3.1 Market analysis 2007

69. In 2007 when the prior market analysis was published there were four companies or company groups operating on the wholesale market for trunk segments of leased lines. They were Siminn/Mila, Gagnaveita Reykjavíkur (GR), Fjarski and Tengir. Vodafone had invested in trunk lines in the capital city area but had at this point in time sold them to OR. According to the statistical information used in the analysis Siminn/Mila had the largest share [85-90%][22] of total revenues on the market.

70. Shortly before publication of the PTA Decision on measures to be taken on the market, organisational changes were made at Siminn to the effect that the parent company, Skipti hf., and Siminn electronic communications operations were divided into two subsidiaries, i.e. that Siminn became mostly responsible for retail operations while Mila handled network operations. The boundaries between areas of operation of the subsidiaries were however not entirely clear and inter alia part of the leased line service remained with Siminn.

71. The PTA considered that competition on the market in question was severely limited by entry barriers. The main factors mentioned in this respect were infrastructure that was difficult to duplicate and the risk of sunk costs for new companies. The PTA also considered that economies of scale and scope could deter other companies from launching operations as could the vertical integration in the operations of the Skipti Group. The PTA furthermore considered that barriers to growth on the market could constitute an entry barrier.

72. The PTA considered that purchasers on the market had a limited choice of service providers and that the purchase operations were not of sufficient magnitude to provide them with countervailing buying power against the sellers. In addition to this the PTA considered there to be little likelihood that purchasers would install their own trunk lines at a national level in the near future.

73. Subsequent to the analysis, Siminn and Mila were designated as having significant market power and obligations were imposed on them for the purpose of achieving the objectives of electronic communications legislation for competition on the relevant market. The obligations were as follows:

- Obligation to provide access to trunk segments of leased lines
- Obligation for non-discrimination
- Obligation for transparency
- Obligation for accounting separation
- Obligation for price control

3.2 Current situation on the market

74. A number of changes have taken place on the market since the market analysis was made in 2007. No new companies have entered the market in recent years. Vodafone, which was on the point of leaving the market in 2007, has now developed its own trunk line service.

[22] Margins for confidentiality.

Wholesale of leased lines in the Siminn Group is now exclusively handled by Mila. The main companies now operating on the market are Mila, Gagnaveita Reykjavíkur (GR), Vodafone, Orkufjarskipti (previously Fjarski), Tengir and Gagnaveita Skagafjarðar (GS)[23].

75. The distribution of trunk line networks of the above specified companies has not increased significantly in recent years with the exception of Vodafone and Tengir networks. In 2010 Vodafone leased a fibre-optic thread in the NATO cable, which circles the whole country, and thus significantly expanded its trunk line network. One however must keep in mind that the Vodafone circular fibre-optic path is a thread in the same cable that was installed by Siminn three decades ago. This means that this is not an instance of roll-out of a new trunk line network but rather a case where there is a new party operating connections where connections had previously been offered. Vodafone has thus not developed its own transit routes outside the fibre-optic circular route. Apart from the fibre-optic circular route, Mila is the only company which operates a trunk line network in large geographical areas. It is therefore necessary for other electronic communications undertakings to have access to Mila systems for them to reach end users.

Mila

76. Mila is by far the largest company on the trunk line market as it operates the network with the greatest distribution and largest market share. Mila is part of the Siminn Group and is a sister company of Siminn since 2007 and prior to that it was part of Siminn and before that part of the Post and Telephone Administration while that institution existed and had a monopoly on telecommunications. In 2007 Mila was separated from other Siminn operations. Since the division of the companies both companies have been operated as subsidiaries of Skipti hf. but reorganisation is pending which will merge Skipti with Siminn which in turn will mean that Mila will be a subsidiary of Siminn, its main customer[24]. Mila handles the operation of the network system and sells wholesale access to the system while other services to individuals and to companies are handled by Siminn. Siminn also however handles the operation of fixed line telephone and mobile telephone systems and TV distribution through the IP network (IPTV). The PTA has considered that these companies, Mila and Siminn, should be considered one economic entity in the understanding of Competition Law where the strong position of one of them on the market is transferred to the other.

77. Since the founding of Mila, the boundaries between the leased line services of Mila and Siminn have been rather unclear. When an analysis was made of leased line markets in 2007,

[23] Mila purchased GS in 2013 and still operates it as an independent company.

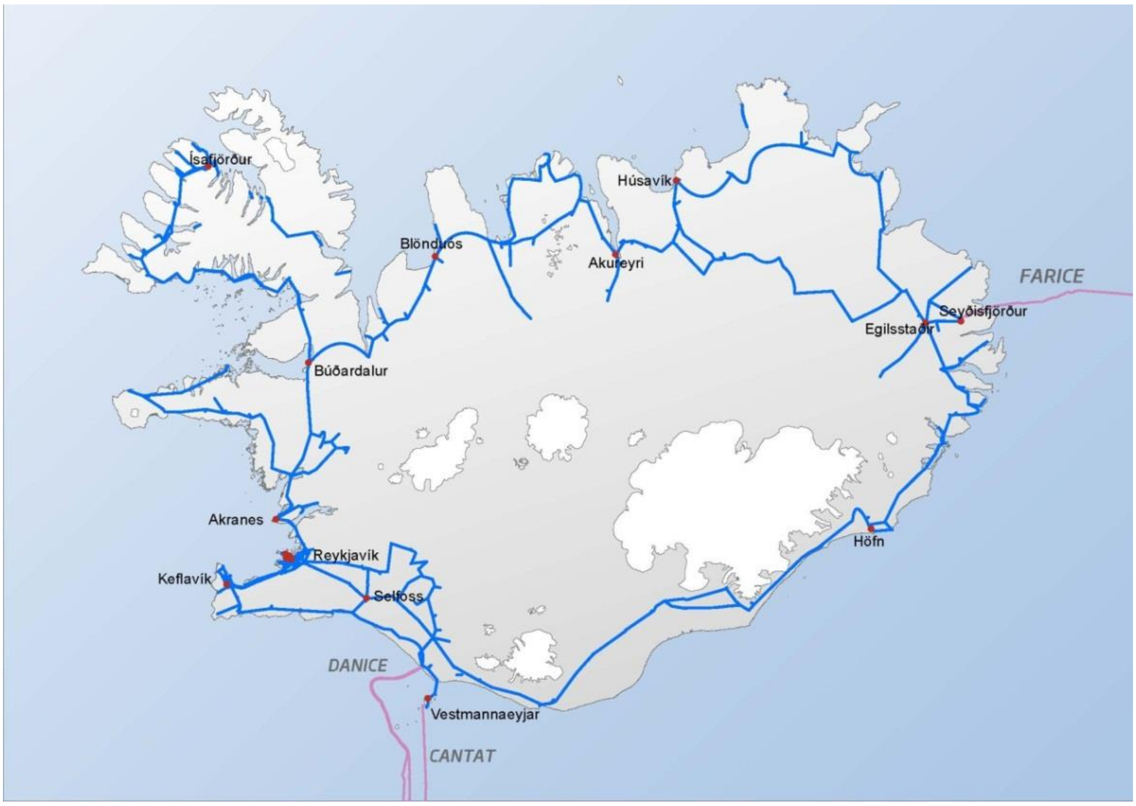
[24] According to information from the Competition Authority there is an amendment to the Settlement between the CA and the Siminn Group from 2013 where such an organisational amendment will be endorsed with further specified conditions during the completion of the procedure. It was announced on the CA website last 16 April that the Authority had endorsed the merging of Siminn and Skjárinn (the Group's media company). This was a renewal of a prior agreement between the parties no. 10/2005. Skjárinn shall however be operated as a separate unit within Siminn with independent balance sheet and profit and loss accounts. In addition to this, Siminn is unauthorised to make it a condition for purchasers of electronic communications services offered by the company that Skjárinn services are part of the package. Furthermore, Siminn is 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. Finally, service items from Skjárinn shall be adequately separated in operation from other Siminn services with respect to cost calculation, promotion, sales, prices and terms and conditions. The surveillance committee on equal access for electronic communications companies to systems, technical solutions of Siminn and Mila wholesale services, see Decision no. 6/2013 (the Agreement) is responsible for ensuring that the conditions of the Agreement are respected.

Mila had recently been founded and its role was to manage network operations and wholesale service but despite this fact, part of the Group´s trunk line service remained with Siminn, including the IP-MPLS system. In 2012 a large part of the trunk line service was transferred to Siminn but subsequent to the above specified Settlement between the Skipti Group and the Competition Authority in 2013, all wholesale of leased lines was transferred to Mila.[25]

78. The trunk line network with the largest distribution in the country is controlled by Mila. The network reaches inter alia all inhabited areas in the country. The network among other things circles the whole country with many transit routes branching from the circular connection to larger and smaller inhabited regions. The network has a very substantial data transfer capacity and there are reserved lines at most locations. The company offers varied services which range from the oldest types of electronic communications, i.e. fixed line voice telephony and analogue leased lines, to the newest digital technology in fibre-optic connections.

79. Mila has a network system, both local loops and trunk lines, that reaches virtually the whole country and that was initially developed for fixed line telephone. Both Mila and Siminn can jointly offer comprehensive services throughout the whole country almost independent of the user's geographical location. Mila enjoys the unique position where it is virtually impossible for a competitor of the Group to avoid being a Mila customer when such a competitor wishes to reach consumers and companies, particularly at a national level.

Figure 3.1 Mila trunk line network



Source: Mila

80. Figure 3.1 gives a broad picture of the distribution of the Mila fibre-optic trunk line network. Mila´s trunk network is mostly based on fibre-optic. The fibre-optic circle around the country was initially installed in cooperation with NATO which used three threads in the cable

[25] See Decision of the Competition Authority no. 6/2013.

to connect its radar stations at various locations around the country. There are eight threads in the cable of which Mila has five[26].

Gagnaveita Reykjavíkur

81. Gagnaveita Reykjavíkur (GR), which is fully owned by the utility company Orkuveita Reykjavíkur (OR)[27], has developed a fibre-optic network in recent years in OR market territory. The GR network is still being developed. The GR development plans currently only apply to a very limited degree various large municipalities in the capital city area, such as Hafnarfjörður, Garðabær, Kópavogur and Mosfellsbær. Should GR embark on construction projects in those municipalities, it is clear that they will take a number of years. There are no plans for the development of the network outside South West Iceland. The following image shows the distribution of the GR trunk line network. GR does not have a specific wholesale tariff for its connections but makes offers in each instance according to customer requirements. Purchasers of connections can therefore equally be companies that use connections for their own purposes and electronic communications companies that build their network systems on the connections in question and use them to provide services to their end users.

Figure 3.2 GR trunk line network

Source: Gagnaveita Reykjavíkur

Orkufjarskipti

82. Orkufjarskipti is a company jointly and equally owned by the public companies

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[26] Mila and its predecessors have always managed operation and maintenance of all threads of the cable. An agreement between Mila and the Ministry of Foreign Affairs in 2013 formally prescribed ownership of the eight threads in question and their related rights and obligations. Mila owns five of these threads while the Ministry of Foreign Affairs is responsible for three of the threads on behalf of NATO. It was stated that Mila would manage the three threads in question that are under the stewardship of the State. The agreement included general maintenance and servicing of the threads and operation of equipment which serves Iceland's air defence system. This was a renewal of a prior agreement between the parties.

[27] In October 2012 Reykjavik City Council agreed to authorise the OR Board to prepare the sale of shares in GR to a total of up to 49%.

Landsvirkjun, which handles processing of electricity, and Landsnet, which is responsible for operating the electricity distribution system. The company was founded on 12 December 2011 but prior to that time a company called Fjarski handled operations. The role of Orkufjarskipti is to operate an electronic communications system for electricity systems in the country with an emphasis on security issues. The company operates as a service provider on the relevant market but leases dark fibre to electronic communications companies that it does not use in its own operations for electricity systems. The possibilities for electronic communications companies to use Orkufjarskipti network systems are thus limited by the network's specialised distribution. The company's market share in 2013 was just [0-5%][28] which means that its operations were insignificant on the relevant market. As can be seen in figure 3.3, the Orkufjarskipti network is mainly developed for interconnections between Landsvirkjun power stations and the Landsnet distribution system and is mostly trunk lines. The network is therefore mostly off the beaten path and in the highlands.

Figure 3.3 Orkufjarskipti network systems

Source: Orkufjarskipti

Tengir

83. Tengir is a company that was founded in Akureyri in 2002 by Norðurorka hf., Línu-net hf., Fjarski and Íslandssími hf. The purpose of the company is to handle electronic communications in the Eyjafjörður area. The largest Tengir project has been to connect all homes in Akureyri with fibre-optic. Landsvirkjun has also installed fibre-optic between municipalities in the vicinity of Akureyri, and the Tengir network reaches Dalvík, Ólafsfjörður, Siglufjörður and Grenivík. In addition to this the system reaches Djúpidalur to the south in Eyjafjörður and over Vaðlaheiði to Dæli.

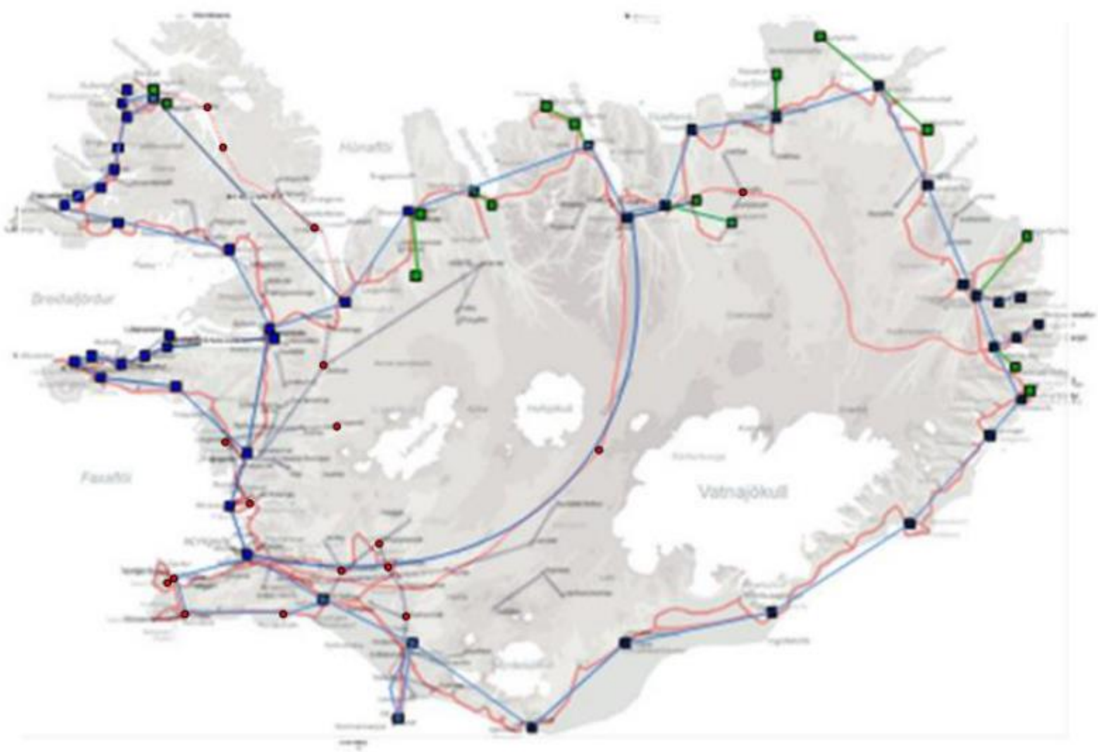
Vodafone

84. Vodafone came into existence in 2003 with the merging of a number of companies that

[28] Margins for confidentiality.

had operated on the electronic communications market for a number of years. These companies were Íslandssími, Tal, Lína-net, Halló and Margmiðlun. For a long time Vodafone was part of the company group known as Teymi hf but that company has been split up. Vodafone had deployed trunk lines in the south-west of the country by 2007 but subsequently sold its trunk lines to OR/GR and was on the point of leaving the wholesale market for leased lines when the PTA analysis of this market was made. In 2010, Vodafone made an agreement with the Institute of Defence on the ten-year lease of one thread owned by NATO in the fibre-optic line which circles the country. Vodafone thus has connections with locations adjacent to the circular line but generally not with places not located at the line except in the south-west part of the country where the company leases various kinds of network access, mostly from GR. The company does not operate on the wholesale market on the basis of its own fibre-optic network but on the other hand it does lease the above specified thread and connections from other network operators which it uses to develop its own service (for example with IP-MPLS protocols) for end users and in wholesale. Vodafone generally does not distinguish between purchasers of its data transfer service, i.e. whether the customer is a registered electronic communications company or not, and it does not offer a specific wholesale tariff but rather makes an offer for service according to customer requirements in each instance.

Figure 3.4 Vodafone network system

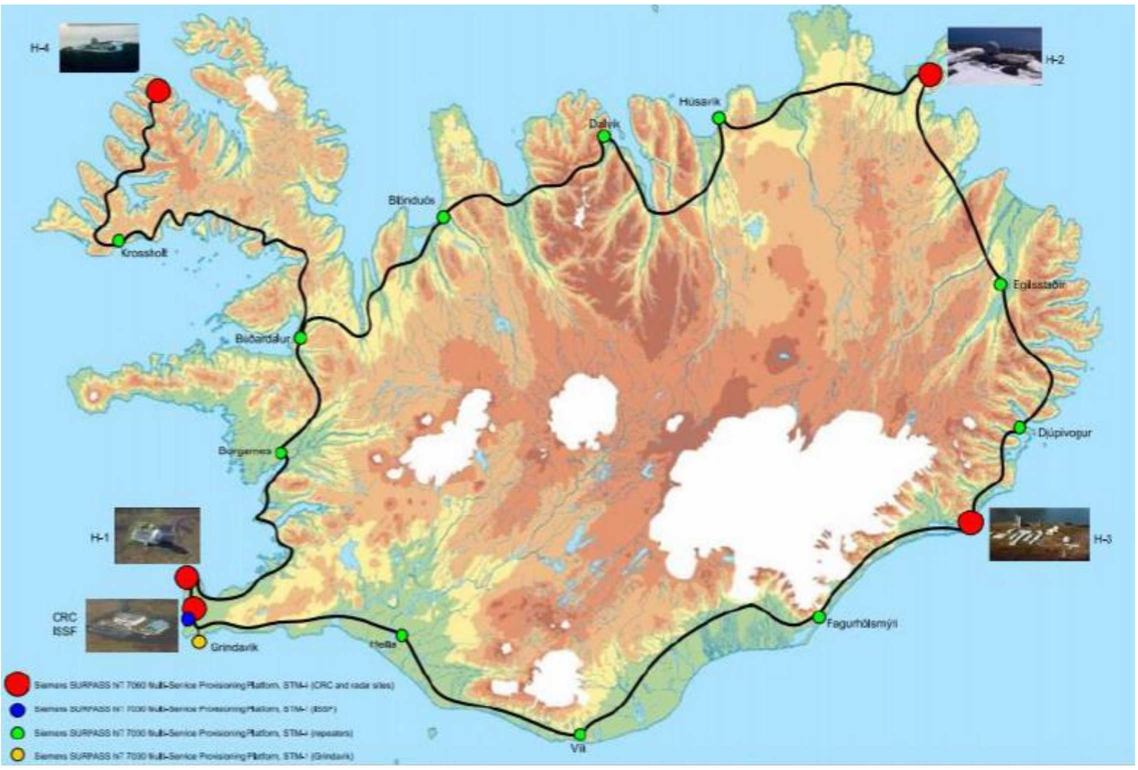


Source: Vodafone

85. Mila complained to the EFTA Surveillance Authority (ESA) regarding the above specified tender procedure for the NATO fibre-optic line in 2010 on the grounds that the agreement constituted state aid as the lease price was lower than cost price in the opinion of the complainant. ESA came to the conclusion in 2012 that the agreement did not constitute state aid in the understanding of the EEA agreement. This decision was referred to the EFTA Court which annulled the decision in question with a judgement in January 2014 and ESA reinstituted an investigation of the case. ESA has now come to the provisional conclusion that the agreement

may constitute unlawful state aid on the grounds of doubts as to whether a market price had been paid for lease of the optical fibre. This is not a final decision and ESA has called for comments from stakeholders.[29] Despite the fact that there is uncertainty about Vodafone's position on the relevant market, the Vodafone agreement for lease of a thread in the NATO circular fibre-optic cable is in force and the PTA assumes that this will be the case for the period of validity of this market analysis.

Figure 3.5 – NATO and Mila circular fibre-optic cable



Source: Vodafone

3.2.1 Summary with respect to current status on the market

86. As stated above, the circumstances of individual parties to the market vary greatly. Mila operates its own network with national distribution and offers a comprehensive network with a service offer that is both deep and broad. Although the Orkufjarskipti network reaches across regions of the country it is first and foremost developed to serve power stations and electricity distribution stations according to the needs of the owners of the company. Orkufjarskipti behaves in reality not as a service company in competition on the relevant market but leases dark fibre to interested parties when there are threads available that the company does not intend to use for its owners. Those who lease this capacity must then invest in and operate their own fibre-optic endpoint equipment and network switches at the Orkufjarskipti connection points and they must procure connections to the connection points which are in most instances at remote locations. Vodafone leases one thread from the NATO circular fibre-optic line and it leases connections from other service parties outside the scope of the circular line. Vodafone provides certain value added features in its network operations, largely in the form of active network equipment and access to communication protocols, for example in the form of IP-MPLS protocols. As Vodafone bases its network almost exclusively on the core networks of other network operators one must consider the company's involvement in the relevant market

[29] http://www.eftasurv.int/press--publications/press-releases/state-aid/nr/2304.

to be quite limited. GR has made progress but it is limited by the service territory of its owner, OR, and does not have clear plans for further distribution outside this area.

87. Because of their ownership, Orkufjarskipti and GR are 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[30]. To a certain extent this also applies to Tengir in the Eyjafjörður area.

88. As described here above, the operations of Mila competitors on the relevant market are constrained by various limitations. The number of companies on the market is thus not entirely indicative of the state of competition on the market.

[30] Since 2006, the PTA has made many decisions concerning OR/GR which relate to interpretation of Article 36 of the Electronic Communications Act. In most instances the Administration has required remedial action from OR/GR. The newest PTA Decision with respect to the above is no. 2/2014. In that Decision, the PTA accepts a GR request for endorsement of an ISK 3.5 billion share capital increase in the company which would be paid by OR. The conditions of this endorsement were that the share capital increase in question would be used to reduce the GR loan with OR and that the remainder of the loan would at the same time be settled with recapitalisation by unrelated parties. In addition, it was required that OR would at any given time require normal return on investment for the capital bound in GR electronic communications operations, regardless of whether the funding was in the form of shares or a loan, and that returns should be in accordance with common practice on the electronic communications market. Mila, which was a party to the case in question at the administrative level, appealed the PTA Decision in question to the courts for annulment. With a Ruling by the District Court of Reykjavik on 26 February 2015, the case was dismissed from court. This was confirmed by the Ruling of the Supreme Court of Iceland on 27 March 2015. This conclusion was justified with the argument that after GR share capital had been increased on 28 March 2014, with registration in the Register of Limited Companies, Mila no longer had legally protected interests for a claim for annulment of the PTA Decision to agree to the GR request in question. Mila of course has the option to refer to ESA for resolution the question of whether the action in question constituted unlawful state aid.

4.0 Definition of geographical market

4.1 General

89. When the relevant product and service market has been analysed, the geographical market must then be analysed. It is not before the geographical demarcation of the relevant product and service market has taken place that the NRAs can adequately analyse competitive conditions on the relevant market.

90. According to Paragraph 3 of Article 15 of the EU Framework Directive, it is the remit of the NRA of the relevant State to analyse the relevant geographical market in accordance with the main principles of competition law. This provision has been adopted into Icelandic law with Article 16 of the Electronic Communications Act no. 81/2003. The arrangement is such that it is the NRA in each state which implements analysis of geographical markets as they have most knowledge and experience of the circumstances in their own State. The EU Commission and the EFTA Surveillance Authority (ESA) for EFTA states, then scrutinises the analysis in question, and establishes whether it complies with the criteria set by European competition and electronic communications legislation.

91. A geographical market covers a geographical area where relevant companies participate in supply and/or demand of the relevant goods or services where conditions for competition are the same or sufficiently homogeneous and where it is possible to demarcate the geographical area from neighbouring area where conditions for competition are significantly heterogeneous. Where competitive conditions vary significantly, this can impact the designation of undertakings with significant market power. 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 all one market or segmented into smaller geographical 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 dividing a geographical market into more than one market.

92. As will be further explained here below, the geographical division of markets is relatively rare in Europe. Where such division has been made, the explanations furthermore often have historical roots, where the circumstances in the State in question are such that electronic communications networks were in the past developed on a regional basis and operated by local parties that do not operate outside their own region, see for example the Hull region in England, Finland and Hungary. Such circumstances do not exist in Iceland.

93. It was long customary to demarcate geographical 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.[31] This methodology was appropriate when traditional copper systems were the norm but has been less appropriate in recent years after NGA networks were increasingly developed as an option to traditional electronic communications systems. The design of such systems normally varies from the traditional systems, which can significantly complicate the process of demarcation of geographical markets.

[31] See Section 2.2.2 in the EU Guidelines from 2002, see analogous guidelines from ESA from 2003 on market analysis and assessment of significant market power of electronic communications companies.

94. In accordance with the above specified guidelines from the EU Commission and from ESA, which are still fully in force despite the fact that some considerable time has passed since they were introduced, one must define the market as that geographical area where the product in question is offered to customers with similar and sufficiently homogenous competitive conditions. When markets are defined geographically it is thus not necessary for the competitive conditions of electronic communications undertakings to be exactly the same. It suffices that they are similar or sufficiently alike and for this reason it is only areas where competitive conditions are *really* different that cannot be considered to be the same geographical market. The process of demarcation of geographical market is according to the guidelines, the same as that which applies to the definition of product and service markets, inter alia with respect to evaluation of demand- and supply-side substitutability[32]. In assessing demand-side substitutability, it is appropriate to consider customer preferences and geographical purchasing patterns. 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 embark on entry into the relevant market if prices were to increase somewhat (5-10%) then the market analysis should include that company.

95. As stated here above, it is generally assumed that "the hypothetical monopolist test" that can be used to assess demand- or supply-side substitutability is the point of departure for geographical definition of markets pursuant to the guidelines. It was stated that this methodology could lead to a very large number of small geographical markets, which is not desirable with respect to achieving the objective of market analysis, which is to impose appropriate obligations on undertakings with significant market power for the purpose of strengthening effective 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 to another area and nor would this on its own encourage other electronic communications undertakings to extend their networks to the area in question. This would apply even less to such an increase for trunk segments of leased lines. To reach an adequate conclusion it could therefore be useful to aggregate areas where comparable competitive conditions exist, into one geographical area.

96. In 2008 ERG[33] issued a report which constituted a common position on various issues related to geographical definition of markets.[34] There it was inter alia stated that the increased roll-out 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 geographical market, then it would be advisable to begin by making a simple preliminary examination of competitive conditions. One would then take into account demand- and supply-side substitutability between areas and investigate homogeneity of competitive conditions with respect to distribution of new electronic communications networks, pricing and characteristics of service. If the conclusions of the preliminary examination indicate that they are not different market areas, then there is no reason to perform a detailed analysis. The instructions in the report were considered necessary as a detailed geographical 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 divide the geographical market.

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[32] See for example the application of "the hypothetical monopolist test" where appropriate.
[33] ERG became BEREC in 2010.
[34] ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) - October 2008 ERG (08) 20 final CP Geog Aspects 081016.

97. ERG guidelines allowed for two main methodologies for segregating geographical markets, i.e.:

1. By administrative boundaries.
2. By the network structure of the incumbent operator having taken into account his competitors' electronic communications networks.

98. It was however stated with respect to the trunk segments of leased lines that decisions on investments in such lines related rather to destinations than to a specific area and for this reason it could be appropriate to analyse the division by specific connections rather than by geographical areas.[35]

99. In the ERG report in question, it was furthermore prescribed that in order for it to be possible to segment differing geographical markets, certain conditions had to be fulfilled, i.e.:

- The segmented geographical areas needed to be less than national and to be mutually exclusive.
- The service offer of each electronic communications undertaking 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.
- The geographical 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 undertakings from replying to queries from NRAs and on the NRAs from analysing data received.

100. According to ERG guidelines, the criteria 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 undertakings operating between areas.
- Market share of electronic communications undertakings comparable in a specific area.
- Possible price difference by area. For example, that there was a difference in the price of service from the incumbent operator[36] between areas or if there was no such price difference there was a difference between his price and competitors' price between varying areas.
- Difference in service offer by area. The fact that competitors' supply area was not the whole country did not suffice on its own to justify separate geographical markets[37].

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[35] See page 11 in the ERG report.

[36] The term "incumbent operator" is used in this Section to refer to former state operated monopolies in electronic communications in the various States.

[37] This issue is emphasised in the Explanatory Note from the EU Commission to the EU Recommendation on the relevant market from 2007. ESA issued a similar Recommendation in 2008, which is still in force. On page 12 in the above specified Explanatory Note from the EU Commission it states: *"Investment in alternative infrastructure is often uneven across the territory of a Member State, and in many countries there are now competing infrastructure in parts of the country, typically in urban areas. Where this is the case, an NRA could in principle find sub-national geographical markets. […]* ***The fact that competitors have a supply area which is not national does not suffice to conclude that there are distinct markets.*** *Further evidence relating to demand-side and*

101. In the summer of 2014 BEREC reviewed the guidelines presented in the above specified ERG report[38]. There it is stated that the BEREC considers that the guidelines from 2008 still adequately applies, as far as they reach, particularly with respect to the more traditional electronic communications systems. BEREC however considered there to be reason to update the guidelines with respect to market and technical developments from 2008, which included increased roll-out of NGA networks in recent years. Although the guidelines applies to geographical demarcation of all those markets that the NRAs analyse, there is special emphasis placed on the market for access networks (Market 4) and bitstream access (Market 5) in the new document. It is stated that it was those markets, first and foremost, where it had been considered justifiable to segment into more than one geographical area in past years. This particularly applied to the bitstream market. Other markets where, in the opinion of BEREC, it is an option to segment into separate geographical markets, are related to access networks. Apart from the above specified Markets 4 and 5 these are mainly the leased line markets and the markets for access to fixed line voice telephony networks.

102. One can understand from the guidelines in question that such geographical segmentation into more than one geographical area is rare in Europe and that often the plans of NRAs in Europe for such division are denied by the EU Commission which has a veto power on this issue.

103. It is furthermore stated that the first question that must be answered is whether and then under what circumstances there could be a need to segment a market geographically into more than one area. This question can be particularly complex in States where new network operators have entered the market in competition with the electronic communications networks of the incumbent operator. Historically, geographical markets have in almost all cases been according to the distribution of the electronic communications networks of incumbent operators. With respect to markets for fixed line networks, the main rule is that there has only been one party that previously operated a state monopoly that controls a national network in each State. For this reason it has been the conclusion of the vast majority of market analyses by NRAs in the EEA in recent years that the country is considered to be one geographical market[39]. This method of demarcation of geographical markets has on very many occasions been confirmed by the EU Commission, by ESA, by the courts in various European States and by the European Court of Justice.

104. Then it is stated in the report that the importance of geographical segmentation has undeniably increased in recent years as competitors of the incumbent operator have increased the distribution of their electronic communications networks and their market share. In some instances the competitive conditions have become so different between areas that it would not be justifiable to have a non-segmented geographical market. For this reason it could be necessary to segment the geographical market into more than one area.

supply-side substitutability on the relevant market will have to be considered. Regional competitors can indeed exercise a competitive pressure reaching beyond the area in which they are present when the potential incumbent operator applies uniform tariffs and the regional competitor is too large to ignore. Moreover, there should be evidence that the pressure for regional price differences comes from customers and competitors and is not merely reflecting variations in the underlying costs."

[38] BEREC Common Position on geographical aspects of market analysis (definition and remedies), BoR (14) 73, 5 June 2014.

[39] Exceptions from this arrangement is the Hull area in England, Finland and Hungary, which have historical explanations as previously stated. A number of examples will furthermore be provided at the end of this Section of geographical market segmentation in a number of States where such historical explanations do not apply.

105. In such instances the geographical analysis would require detailed data and information which would be both costly and time-consuming for the NRAs to gather and for the electronic communications undertakings to provide. Such detailed gathering of information could under certain circumstances be considered to breach the principle of proportionality. One of the main objectives of the BEREC report in question would be to advise the NRAs on these issues or on indications that could justify such detailed geographical analysis. The report investigates in the first instance the competition development which has taken place in recent years and explains the increased importance of geographical factors in market analysis before describing the issues or indications that need to be examined before embarking on an assessment of whether there is need for detailed analysis of competitive conditions in geographical areas that are purported to differ.

106. With respect to the former issue, i.e. the investigation of development of competition, it was stated that the distribution of the electronic communications networks of the competitors of the incumbent operator had increased since the previous ERG report was published. This increased distribution can be explained, among other things by:

1. Competitors that provide electronic communications services by local loop unbundling. Their market share has grown because of increased use of local loop unbundling and in addition to this they have increasingly climbed the investment ladder by migrating from bitstream access to local loop unbundling.
2. More varied technical options. Competitors who use more varied technology than before, for example cable systems, Wi-Fi and LTE/4G, provide increased competition.
3. Distribution of NGA networks. The distribution of NGA networks has been on the increase, variously by private enterprise, public enterprise or cooperation between the two (Public-Private-Partnership). This could radically change the landscape with respect to fixed line network infrastructure. Competitors who have built local fibre-optic networks can, where the incumbent operator is not a leader in the introduction of fibre-optic, provide competitive pressure on the incumbent operator[40].

107. Investment in distribution of electronic communications networks (other than copper systems) and an increased number of local networks can lead to a kind of patchwork where NGA systems are almost randomly available here and there in the State in question with only traditional electronic communications networks in other areas. Then a number of areas will be exceptional, with respect to the number of electronic communications operators and to competitive conditions. It then depends on how the service market in question is defined whether the new systems provide substitutability for the service of the incumbent operator and thus belong to the relevant market.

108. The BEREC report also examines which indicators need to be examined before embarking on an assessment of whether a detailed analysis of competitive conditions is required in purportedly dissimilar geographical areas. In Item b of Section IV of the report, there is discussion on the main indicators to be examined in this connection:

[40] Here one could also note that at many locations in the countryside, fibre-optic networks have been installed with public funding. Such local networks, which can often be arbitrarily found here and there in individual States, can have an impact on market analysis. One must consider it likely that most of them have been developed in accordance with requirements for state aid and should therefore be open to all electronic communications undertakings, which ensures competition at wholesale and retail level in the areas in question.

- **Distribution of electronic communications networks of the incuments competitors.** A normal starting point for the analysis is to examine distribution of the electronic communications network of competitors to the incumbent operator. The NRA in question needs to have a clear overview of the networks in the relevant area, of electronic communications undertakings operating in the area and of the characteristics of services in the area.

- **Competitive pressure of competitor 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 retailers in each area and their share.**

- **Pricing.** One must examine prices and possible price difference between areas. If the prices of the incumbent operator and his competitors are the same for the whole country, then this is an indication that the geographical market is the whole country.

109. In the BEREC report, it is stated that one is not required to analyse separate geographical 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 competition problems that had been identified[41]. "Real" competitive conditions shall be assessed that are reflected in market behaviour of electronic communications undertakings, 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 geographical 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 significantly from other areas within the State in question.

110. In the BEREC guidelines in question it is furthermore stated that as the main purpose of the imposition of obligations is to ensure effective competition for the benefit of consumers, the starting point for geographical analysis should generally be the survey of competitive conditions on related retail markets if obligations were not in place on the wholesale market being examined.

111. Subsequent to this the BEREC report discusses the factors that should be examined, should the interim conclusion of the relevant NRA reveal the need for a more detailed geographical analysis of the market in question. Then one must inter alia make a detailed analysis of competitive conditions in related retail markets, of the network structure of the various parties to the market and one must assess homogeneity of competitive conditions in addition to identifying sensible criteria for the selection of distinct geographical areas. 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 difference, quality difference, and difference in marketing and possible difference in the nature of demand by area.

[41] See point 129 on pages 29-30 where it states: *"Areas should be aggregated so that competitive conditions within a market are sufficiently homogeneous whereas competitive conditions differ between markets with potential effects on either the SMP finding or the identified competition problems."*

112. The BEREC report 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 geographical market. This means that there are less stringent requirements for authorisation to prescribe varying obligations on an incumbent operator than for geographical segmentation of markets into more than one area.

113. In the BEREC report in question one furthermore sees discussion of market analysis made by European NRAs with respect to matters of contention related to geographical segmentation of markets and/or the imposition of varying obligations on incumbent operators by geographical area. This is in the form of discussion of analyses that were made subsequent to publication of the above specified ERG report on geographical segmentation of markets in 2008[42]. In order to better understand the requirements made by the EU Commission for such analysis they will be explained in the discussion here below.

114. In the case of Spain from 2008[43] the Spanish NRA (then CMT) planned to impose varying obligations on an incumbent operator on the bitstream market (Market 5) in areas where the NRA deemed that on the one hand there was greater competition and on the other hand less competition. The areas with greater competition were on the one hand defined as those areas where distribution of cable systems covered at least 60% and where two of the three local loop operators were present. On the other hand there were areas where all three local loop operators were present in the area and where the incumbent operator had less than 50% market share. CMT planned to refrain from imposing price control obligations on incumbent operators, with respect those areas where the NRA considered there to be effective competition. The EU Commission deemed that CMT had not successfully demonstrated that differing competitive circumstances existed within Spain that justified the varying obligations. In the opinion of the Commission the varying competitive conditions should be characterised by factors such as these:

- Differing marketing of electronic communications operators between areas.
- Indications of lower retail prices in the competition areas.
- Differences in the functionality or type of service on offer between areas.
- Decline of market share of incumbent operator in wholesale or retail.
- Stability of boundaries between areas.
- Evidence of an overall trend towards effective competition in the competition areas.

115. As shown above, the EU Commission deemed that CMT had not successfully justified the geographical division in question of the relevant market. For this reason, CMT withdrew the draft decision in question and defined the geographical market as the whole country.

[42] In the ERG report in question those cases were discussed that had arisen until that point in time and that related to geographical segmentation of markets. The most significant cases that can be mentioned relate to the United Kingdom from 2007, Austria from 2007 and Portugal from 2008, which all concerned the bitstream market (Market 5). There were furthermore cases relating to the United Kingdom from 2003 and Austria from 2006 that related to the market for terminating segments of leased lines (Market 6). In the above-mentioned UK case concerning the bitstream market, the UK regulator (Ofcom) segmented the geographical market into more than one unit. Competition areas were defined as areas where a specific number of competitors had to be operating and in addition to this, where the incumbent operator (BT) had less than 50% market share in the area in question.

[43] See ES/2008/0805.

116. In the case of the Czech Republic from 2012[44], the Czech NRA (CTU) decided to segment the geographical market for the bitstream market (Market 5) into two units based on varying competitive conditions between areas. The CTU considered that there was effective competition in those areas where at least three technical solutions[45] were being offered and where the market share of the incumbent operator (TCR) did not exceed 40%. The EU Commission made serious reservations on the CTU conclusions and considered that the regulator had not provided sufficient proof that the retail offers through cable and Wi-Fi systems exerted direct or indirect competitive constraints on the wholesale market for bitstream access through xDSL or fibre-optic, nor that such constraints had such an influence on the competition environment on the relevant market that this justified geographical segmentation of the market. TCR was the only party that offered convincing wholesale products at national level on the relevant market and the company's prices were the same across the whole country. The Commission therefore exercised its veto power and the geographical market segmentation in question of the wholesale market in question in Czech Republic was not implemented.

117. In the case of Poland from 2012[46], the Polish regulator (UKE) intended to segment the geographical market for bitstream access (Market 5) into two units. UK considered that 20 municipalities of 3076 formed a separate geographical market. One criteria was that the incumbent operator (Telekomunikacja Polska) has less than 40% market share in the area in question. The EU Commission had serious doubts as UKE had based its case on obsolete data and had not succeeded in proving alleged differing competitive conditions between areas. The Commission therefore exercised its veto power and the geographical segmentation in question was not implemented.

118. In the case of Belgium[47], which dealt with retail leased lines, the Belgian NRA (BIPT) withdrew the obligation for Margin Squeeze Test from the incumbent operator in areas where at least two fibre-optic networks had been installed by electronic communications undertakings other than the incumbent operator. There are thus three independent networks on offer in those areas. This decision constitutes varying elaborations of a very limited obligation where the country is a single geographical market.

119. Finally, it should be noted that in the case of Portugal from 2009, a bitstream market (Market 5) was segmented into two geographical markets. One of the markets was an aggregation of areas where both copper local loops and cable systems were in place and where the share of cable was more than 60%. Other areas formed the geographical market where the incumbent operator (Portugal Telecom) was designated as having significant market power. Effective competition was however deemed to be in place in the former area.

120. The above specified examples demonstrate that an incumbent operator's market share generally needs to drop to at least 40-50% in the area in question and that competing infrastructures need to be more than two for it to be possible to speak of effective competition and for it to be possible to withdraw obligations[48]. BEREC has in this report, and in other recent

[44] See CZ/2012/1322.

[45] In the Czech Republic, cable and xDSL systems are widespread and in addition to this fibre-optic and wireless Wi-Fi systems are on offer at many locations.

[46] PL/2012/1394.

[47] BE/2013/1474.

[48] See point 179 on pages 37-38 where it states: *" ... as noted by BEREC in its response to the European Commission´s questionnaire for the public consultation on the revision of the Recommendation on Relevant Markets, the presence of a sufficient number of operators* ***(at least more than two)*** *in a given area is a key factor to ensure effective competition, thus preventing the emergence of non-competitive oligopolies."*

reports come to the conclusion that it is difficult to achieve effective competition where only two networks are in operation.

4.2 The geographical market for trunk segments of leased lines

121. As is stated in the ERG and BEREC guidelines described here above, it is advisable to begin by making a simple preliminary analysis of competitive conditions in more specifically defined areas if there is any doubt as to whether the country should be deemed one geographical market. If the conclusion of such a preliminary analysis is that competitive conditions are sufficiently homogenous in all areas, then there is no obligation to segment the geographical market, but rather to consider the whole country as one geographical market. This has also been worded such that the geographical market shall be the geographical area where the product in question is offered to customers with comparable and sufficiently homogenous competitive conditions. Competitive conditions need therefore to be "truly different" between areas for it to be possible to justify separate geographical markets.

122. When making such an assessment one should inter alia take into account demand-side and supply-side substitutability between areas and one should determine the homogeneity of competitive conditions. When assessing supply-side substitutability, it is appropriate to look at the case from the point of view of customers of the electronic communications undertakings operating on the relevant market and thus take into account consumer preferences and geographical purchasing patterns of the customers in question. With respect to supply-side substitutability one should assess the likelihood of a new electronic communications undertaking entering the relevant market were the price to increase by about 5-10%. When investigating the homogeneity of competitive conditions between areas one should, as appropriate in each instance, take into account factors such as:

- Entry barriers
- Distribution of electronic communications networks
- Competitive pressure from new electronic communications networks on related retail markets
- Number of operating electronic communications undertakings
- Market share
- Pricing
- Service offer
- Quality and characteristics of service
- Marketing
- Nature of demand
- Tendency towards effective competition

123. If the conclusion of the above specified preliminary analysis indicates that there is insufficient variation in competitive conditions between areas to justify geographical segmentation of the geographical market, then there is no reason to make a detailed analysis in this respect. Competitive conditions need in addition to differ sufficiently between areas that such difference could possibly have an impact on the conclusion with respect to designation of an undertaking with significant market power, or on competition problems that have been identified on the relevant market. Such a detailed analysis consumes a great deal of time and human resources of the NRA in question and in addition to this can breach the principle of proportionality when one considers the scope of information that has to be collected from electronic communications undertakings.

124. As stated here above, the principle in Europe has been that the geographical market is the whole country. When the geographical market has been segmented into more than one geographical area, this has in the vast majority of cases been for the bitstream market (Market 5). Given the precedent that has been described, the principle is that there must be very strong arguments if such segmentation is to be justified. The minimum requirement that is made seems to be that the incumbent operator's market share needs to drop to at least 40-50% in the area in question and that competitor electronic communications infrastructures need to be at least three for it to be possible to speak of effective competition and for it to be possible to withdraw obligations on the relevant market.

125. In the market analysis from 2007 the PTA came to the conclusion that the country should be segmented into two markets areas, the capital city area on the one hand and the countryside on the other. This division was based on the fact that in the capital city area there were two trunk line networks, i.e. the GR network and the Siminn Group network while in other parts of the country there was only one network. ESA objected to this PTA conclusion and maintained that it was not based on adequate research. ESA however took no further action in the matter as this issue did not impact on the conclusion of the market analysis which was that Mila/Siminn had significant market power on the relevant markets while other electronic communications undertakings did not have such market power. The PTA considers there to be reason to review the geographical segmentation described above, inter alia in the light of practice in the EEA in recent years, of ERG and BEREC guidelines and of the fact that the above specified PTA conclusion was not based on adequate research.

126. In Iceland the Mila trunk line leased line system covers the whole country and reaches all inhabited areas in the country and also many mobile phone network transmitters located outside inhabited areas. The network inter alia circles the whole country with many transit routes branching from the Fibre Optic Ring to larger and smaller inhabited regions and to the mobile phone network transmitters in question. The network has a very substantial data transfer capacity and there are reserved lines at most locations. The company offers varied services which range from the oldest types of electronic communications, i.e. fixed line voice telephony and analogue leased lines, to the newest digital technology in fibre-optic connections.

127. The carrying layer[49] of the Mila trunk leased line system, which is first and foremost made up of fibre-optic cables[50], was mostly installed over an extended period of time while the company's predecessor was a state operated monopoly for telecommunications in Iceland. The

[49] The carrying layer of the system is also known as transmission media.

[50] According to information from Mila, the company now operates a 4000 km long fibre-optic network on the trunk line network.

development of the system in recent years has first and foremost been characterised by upgrading and development of the various transmission technologies/communications protocols[51] which are built on the above specified carrying layer. In addition to the above specified fibre-optic, the Mila backbone network is composed of microwave connections which are first and foremost used in rural areas and in uninhabited areas, inter alia to connect mobile phone transmitters which are off the beaten path, where fibre-optic is considered to be too expensive an option[52].

128. Wholesale to the Mila trunk line network is offered across the whole country and prices do not vary by region. The prices are generally composed of a start-up charge and kilometre charge and in addition to this the charge varies depending on the capacity of the purchase connection. In large areas, Mila is the only electronic communications undertaking which operates a trunk line network in the relevant area and in addition to this, Mila is still extremely strong in those areas where other electronic communications operators offer access to trunk line networks. The Mila service offer is also generally much more comprehensive than with other electronic communications operators on this market, both when one considers the number of products on offer and the number of areas covered by the service. Despite some development of trunk line networks by other electronic communications operators during recent years, Mila is as before by far the largest and most powerful company on the relevant market with the network with the greatest coverage and the largest market share, whether for the Capital City Area [(65-70%)][53] or the country as a whole [(75-80%)][54]. It is therefore necessary for other electronic communications operators to gain access to the Mila trunk line systems, in part or totally, in order to reach end users and/or develop their own electronic communications systems.

129. Trunk line networks of other electronic communications operators are local and much smaller than the Mila network, and in addition to this their service offer is smaller. Of these networks the GR fibre-optic network is the largest, covering a large part of the Capital City Area[55] and in addition to this, it reaches as far as Bifröst to the west, Hvolssvöllur to the east and from there to the Westman Islands. GR market share in the Capital City Area was [30-35%][56] in 2014. GR's main objective is to develop a fibre-optic access network for inhabitants in its operational territory and the company furthermore owns and operates a quite extensive trunk line network in the area which interconnects the access networks[57]. The company's trunk

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[51] Examples of transmission technologies/communications protocols used by Mila are MPLS-TP, SDH/PDH, wavelength division multiplexing (WDM, CWDM and DWDM), gigabit connections (Ethernet) and ATM. Mila also sells access to dark fibre which is fibre-optic without endpoint devices where there are in fact no communication protocols but rather direct access to the backbone.

[52] According to information from Mila, the company now operates a 5000 km long network of microwave connections on the trunk line network. By the nature of things, the usage potential and service offer are more limited in microwave connections than with fibre-optic. Microwave connections are however considered a good option for isolated areas where the laying of fibre-optic cable would not be considered a viable option because the cost.

[53] Margins for confidentiality. Where market share is discussed in this Section, this refers to market share by revenue for the year 2014.

[54] Margins for confidentiality.

[55] The Capital City Area means Reykjavík, Seltjarnarnes, Hafnarfjörður, Garðabær, Kópavogur and Mosfellsbær.

[56] Margins for confidentiality.

[57] GR sells access to fibre-optic to residential and non-residential customers in its operating territory but does not provide electronic communications services. The GR network is open to all the electronic communications operators that wish to provide their end users services through the network. The largest electronic communications operator in the country, Siminn, does not use the GR network but rather the network of its subsidiary, Mila. However Vodafone, 365, Hringdu and others use the GR network.

line networks are however not as extensive as the Mila trunk line networks in the Capital City Area. Other electronic communications operators have the option of purchasing trunk line connections from GR and in addition to this have the option of providing end-users with electronic communications services through the GR fibre-optic access networks.

130. The GR fibre-optic network now reaches almost all buildings in Reykjavik and Seltjarnarnes and to new-build districts in Hafnarfjörður, Garðabær, Kópavogur and Mosfellsbær. GR has far from completed its fibre-optic network development, including with respect to trunk line network, in older districts of these municipalities and it is clear that this task will take many years and will not be completed during the period of validity of this analysis. It is therefore not possible to say that the GR fibre-optic network covers the whole Capital City Area. In addition to Mila and GR, Vodafone operates a very limited trunk line network in the capital city area, both with respect to service offer and distribution, and this company's market share was only just under [0-5%][58] for the year 2014 in this area[59].

131. As the capital city area does not have sufficiently clear and stable boundaries[60], it cannot form a single geographical market, as Mila has requested. This would mean that the area would need to be segmented into a very large number of small markets where competitive conditions are comparable. It is clear that electronic communications operators cannot be expected to embark on such a task, with attendant pressure on electronic communications operators for the gathering of data, unless it is likely that competition problems and the conclusion of market analysis with respect to designation of an undertaking with significant market power would vary between areas. As will be explained here below in more detail, the PTA considers this not be the case and that Mila enjoys strong dominance on the relevant market, regardless of whether one considers the country as a whole or a specific area. The PTA also considers that the competition problems are the same at all locations and that competitive conditions do not differ sufficiently between areas to justify geographical segmentation of the market.

132. The company Tengir operates a similar network to GR in Akureyri and in the Eyjafjörður region but that area is much smaller than the Capital City Area. The company's market share is only [0-5%][61] of the relevant market for the whole country. Orkufjarskipti operates its own trunk line network but the role of this company is to operate electronic communications systems for the country's electricity systems on the basis of security-oriented criteria. The company's network is mainly built to interconnect the Landsvirkjun power stations and the Landsnet distribution system and is mainly located off the beaten track and in the Icelandic highlands. Orkufjarskipti has leased its excess capacity to other electronic communications operators that have so requested. The Orkufjarskipti market share is only about [0-5%][62] for the country as a whole. The companies in question, i.e. GR, Tengir and Orkufjarskipti, are variously 100% or majority owned by utility companies, which means they are subject to restrictions with respect to competition pursuant to Article 36 of the Electronic Communications Act which prohibits the subsidising of competitive operations, including

[58] Margins for confidentiality.

[59] Vodafone owns no fibre-optic and bases its limited company operations on the relevant market only on leased line connections that the company leases from other parties, for example from the state (NATO), from Mila and from GR.

[60] As is stated in the ERG and BEREC reports which provide guidelines on segmentation of geographical markets, and which are described in detail in Section 4.1 here above, the boundaries between areas need to be clear and stable and the areas need to be mutually exclusive with respect to varying competitive conditions for it to be possible to segment differing geographical markets.

[61] Margins for confidentiality.

[62] Margins for confidentiality.

electronic communications operations, by activities enjoying exclusive rights or protected activities of such utility companies. It is clear that neither Tengir nor Orkufjarskipti are in a position to exert significant competitive pressure on Mila operations on the relevant market.

133. Vodafone made an agreement in 2010 with the State for the lease of one thread of the NATO Fibre Optic Ring. Mila has however access to 5 threads in the fibre-optic line in question. This means that Mila has a connection with locations on to the Fibre Optic Ring, and to a number of locations of the Fibre Optic Ring, including a limited trunk line network in the Capital City Area. The Vodafone objective with the thread in question was first and foremost to develop a trunk line network for its own operations. Connections from the Fibre Optic Ring are however almost exclusively in Mila's hands. The lease agreement expires in the year 2020 and no one knows what will subsequently happen. Furthermore, ESA is examining an appeal from Mila concerning the question of whether the lease of the thread in question constituted unlawful state aid. Should ESA deem that there was unlawful state aid there is doubt as to the impact this will have on continued Vodafone operations on the Fibre Optic Ring in question, but it is clear that this could have a significant impact on the company's future plans. Vodafone sells to s small degree some trunk line services to other electronic communications operators and its market share was only about [5-10%][63] for the whole country in the year 2014, just under [0-5%][64] in the capital city area and just under [5-10%][65] in the countryside. The Mila market share was however, about [80-85%][66] in the countryside at the same time. It is clear that the limited operations of Vodafone on the market in question cannot exert significant competitive pressure on Mila operations on the market, regardless of whether this applies to the country as a whole, to the Fibre Optic Ring or in the Capital City Area.

134. In addition to the above specified trunk line networks, various municipalities have developed fibre-optic networks in their areas. These are often small municipalities with a few dozen or very few hundred inhabitants. The main purpose of these networks is to provide inhabitants with powerful Internet connections. Trunk line connections come with such development of local access networks. There is generally open access to these networks. These fibre-optic networks are here and here around the country and as this is patchwork development, these fibre-optic networks are badly suited for transmission over long distances, but are first and foremost for use in the localities in question. This means that such networks have an insignificant impact on the relevant market, at least up to this point in time, and are not positioned to exert competitive pressure on the Mila operations on the relevant market.

135. As is stated in Section 3, the development of new trunk line networks has not been substantial since the previous analysis of the market was made. There have however been additions to the networks that were then on the market, for example Tengir has laid trunk lines to Akureyri and in the Eyjafjörður region. The major change however in trunk line network distribution is the lease agreement made by Vodafone for one of the threads of the NATO fibre-optic cable which circles the country. The advent of this addition to the Vodafone network means that there are now two trunk line connections on offer to many more locations than was the case in 2007. The Vodafone network circles the whole country but it is not however connected to all urban areas. Most of the urban areas not located close to the Fibre Optic Ring only have connections with Mila. The same applies to almost all of the countryside and uninhabited areas with respect to connections with mobile phone transmitter locations. One

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[63] Margins for confidentiality.
[64] Margins for confidentiality.
[65] Margins for confidentiality.
[66] Margins for confidentiality.

must however keep in mind that the Vodafone line routes on the Fibre Optic Ring are the same as those that Siminn had for decades and that are now controlled by Mila. This means that strictly speaking there is no new network with the entry of Vodafone into the trunk line network market, but rather that Vodafone has acquired new facilities in the development of its trunk line service through access to fibre-optic networks owned by other parties.

136. In certain areas or on certain routes there are more than two trunk line networks. In the south-west of the country there are networks controlled by Míla, GR and Vodafone while in the Eyjafjörður region there are networks controlled by Míla, Vodafone, Orkufjarskipti and Tengir. This however does not mean that it is possible to choose between wholesale companies on all routes in these regions as these networks in many instances follow varying paths through the regions and access varies to specific paths.

137. In the opinion of BEREC it is a key issue in ensuring effective competition that there are more than two network operators in a given area thus preventing undesirable oligopoly.[67] Such a situation in reality does not exist in Iceland except in relatively few specific areas which are distributed randomly around the country and in addition to this the network operators at these locations have very varying capacity to participate in effective competition. In this connection one can indicate that in the few and limited locations where there is a choice of three operators in this country, Vodafone is one of them. The company is as previously stated, not the owner of the networks, but rather it builds its service on threads and connections leased from other parties. It is not clear what the next step will be with Vodafone in this connection, when the lease agreement on the NATO thread expires after 5 years or if ESA comes to the conclusion that there has been an instance of unlawful state aid. The Vodafone position is anyway not the same as that of electronic communications operators that operate their own networks and can make long-term plans accordingly. In addition to this, the Vodafone market share is only just under [5-10%][68] for the whole country and under [0-5%][69] for the Capital City Area. It is clear that the company is not in a position to provide Mila with significant competitive constraint on the relevant market, whether this is in the Capital City Area, the Fibre Optic Ring or in the country as a whole.

138. There is some doubt as to whether one can consider distribution of trunk line networks other than that of Mila as being significant. The main candidate for being considered to have significant coverage is the GR network. The network lies between urban areas in the south-west of the country and within the capital city urban area. This covers electronic communications equipment which serves a significant number of users but its distribution in terms of physical area can hardly be considered significant at a national level. Other networks are variously local such as in the Eyjafjörður region, or are on specific long-distance paths such as those of Vodafone and Orkufjarskipti. Competitive pressure from these networks does exist to some degree but does not seem to be substantial in the light of the dominance maintained by Mila in its market share since 2007.

139. With the above in mind it is clear that parties operating on the relevant market have been in very differing positions and that the Mila position is by far the strongest. As stated above,

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[67] See BEREC Common Position on geographical aspects of market analysis (definition and remedies), BoR (14) 73, 5 June 2014.
[68] Margins for confidentiality.
[69] Margins for confidentiality.

the Mila market share for the whole country was about [75-80%][70] in 2014, GR share was [5-10%][71], Vodafone share was [5-10%][72], Tengir [0-5%][73] and Orkufjarskipti [0-5%][74]. Market share of local fibre-optic networks of small municipalities is hardly measurable on the relevant trunk line market. The Mila market share has thus dropped very little in recent years and was [85-90%][75] in 2005[76]. This means that the Mila market share has thus dropped by less than [..%][77] per annum for the whole country during this nine-year period. At a great number of locations, Mila has a monopoly position.

140. Where some competition does exist, it shows strong characteristics of oligopoly as in those areas the Mila position is as before extremely strong. In the largest and most important area, i.e. the Capital City Area, Mila had for example [65-70%][78] market share in 2014 while the GR share was [30-35%][79] and Vodafone had just under [0-5%][80] [81]. Mila market share has dropped very little in this area in recent years, i.e. from [70-75%][82] in 2005 to [65-70%][83] in 2014 which represents [..%][84] over a nine-year period and in addition to this there are strong indications that the company's position is currently gaining strength at the expense of GR[85]. The PTA assesses the situation to be such that in the Capital City Area the Mila position has recently improved at the expense of GR and that this development will probably continue during the period of validity of this analysis. The Mila market share in the Capital City Area is thus much higher than the 40-50% market share that precedent from Europe has used as a criteria, and in addition to this there is the fact that there are in reality only two systems in this area as the Vodafone system is extremely limited[86].

141. With the above in mind it is clear that the number of companies on the relevant market is not descriptive of the competitive conditions that exist on the market in this country. Mila is head and shoulders above its competitors on the relevant market when one considers market share and service offer, regardless of whether this relates to the Capital City Area, the Fibre

[70] Margins for confidentiality.
[71] Margins for confidentiality.
[72] Margins for confidentiality.
[73] Margins for confidentiality.
[74] Margins for confidentiality.
[75] Margins for confidentiality.
[76] PTA Decision no. 20/2007 (Market analysis of leased line markets) is based on statistical data from 2005.
[77] Omitted for confidentiality.
[78] Margins for confidentiality.
[79] Margins for confidentiality.
[80] Margins for confidentiality.
[81] One must note that the Capital City Area share of total revenue from the relevant market is only about 23%. The share of the Capital City Area was about 30% in 2005, which means that the weighting of the Capital City Area on the relevant market has been on the decline. By far the most revenue from trunk lines is therefore generated outside this area and to a large degree, in areas where Mila has a monopoly position.
[82] Margins for confidentiality.
[83] Margins for confidentiality.
[84] Omitted for confidentiality.
[85] At the beginning of June the PTA held a meeting with representatives of the main electronic communications operators on the relevant market in the Capital City Area and that compete with Mila or with the Siminn Group and/or purchase trunk lines from Mila. It was stated [Omitted for confidentiality]
[86] With the PTA Decision no. 4/2007 Siminn was designated as having significant market power on the market for access and call origination in public mobile phone networks (then Market 15). Only two mobile phone companies were operating in this country when the analysis in question was made, i.e. Siminn, which then had less than 65% market share and Vodafone, which had over 35% market share. Siminn appealed the PTA Decision in question to the Appellate Committee and deemed that the companies had joint market domination. With the Ruling of the Appellate Committee no. 2/2007, the PTA Decision was however, confirmed which meant that Siminn alone was considered to have significant market power on the relevant market.

Optic Ring or the whole country.

142. This could strictly speaking mean that assessment of supply-side substitutability indicates that there are many geographical markets in this case. The fact that the Mila network covers the whole country is however contrary to this assumption, not least where the company's position is also very strong in the competition areas and the company's prices and those of other electronic communications companies on the relevant market do not vary by region. In addition to this the jurisdiction of the Electronic Communications Act is the whole country and authorisation for companies to operate networks provided at a fixed location covers the whole country and is based in all instances on the same laws and regulations.

143. As has been previously stated it is necessary to take into account substitutability of those trunk line networks that are on offer across the whole country, e.g. by using the SSNIP test. It is fair to say that it is very unlikely that a sufficient number of consumers would decide to move to another market area because of a 5-10% price increase in trunk lines in a specific area. It is also unlikely that other network operators would embark on establishing their own network in that area subsequent to such a price increase. The SSNIP test could thus lead to many and small markets and would thus neither be realistic nor useful in the circumstances that pertain on the relevant market in this country. It is therefore necessary to emphasise competitive conditions and to investigate whether they differ sufficiently in the other areas to make it possible to geographically segment the market in this country on the relevant market.

144. As stated previously, the fact of the matter is that clear and stable boundaries with respect to competitive conditions can generally not be found between areas in this country on the relevant market. The distribution of new trunk line networks is unpredictable and seems to be random in some instances. Mila has a trunk line network[87] that covers the whole country while the networks of other parties constitute a kind of patchwork around the country. To this it can be added that most network operators in this country, such as for example GR and Tengir, plan for greater distribution of their networks within their operating territory in the coming years and for this reason it will be difficult to find boundaries that are stable during the coming next years. One can however, expect that smaller municipalities will continue to construct fibre-optic networks in their local areas.

145. With the above in mind it is very difficult to draw a clear line between areas on the basis of varying competitive conditions because even within areas where fibre-optic is on offer, circumstances can vary which would mean that the areas that needed to be delineated would need to be very many, small and variable, which would involve an excessive burden on the relevant electronic communications undertakings with respect to answering queries from the PTA and on the PTA with respect to processing such data and analysing them. In addition to this, the conclusion of the market analysis would doubtless be the same in all areas because of the previously mentioned dominant position of Mila across the whole country.

146. As was stated in the above referenced BEREC guidelines, there is no requirement to analyse separate geographical markets unless the competition circumstances vary so greatly

[87] It should be noted that Mila has now for some time offered what is called the Metropolitan Data Highway (MDH) which is a service that suits customers that require broadband connections between locations. The Metropolitan Data Highway is transmitted across a passive network which means that there are only active devices at the ends of connections. 1 GB/s and 10 GB/s connections are offered. The service has been on offer in the Capital City Area and at Reykjanes. The service is thus not only limited to the Capital City Area. Mila has started to offer Ethernet connections (MPLS-TP) at many locations in the countryside and one can say that this service meets the same needs as the MDH in the capital city area and at Reykjanes.

between areas that this could possibly impact either the designation of an undertaking with significant market power, or on competition problems that had been identified on the relevant market. "Real" market conditions shall be taken into account which are reflected in the market conduct of electronic communications operators on the relevant market (e.g. pricing) and the impact of this conduct on the structure of the market (e.g. market share). Among other things because of the strong Mila position on the relevant market in all areas, of non-transitory entry barriers, shortage of possible competition, oligopoly conditions and inadequate countervailing buying power, the PTA considers that the identified competition problems exist in all areas. It is important in the opinion of the PTA to maintain obligations on Mila on the relevant market. It is of vital importance for the development of electronic communications in Iceland that other electronic communications operators have access to the Mila trunk line network which has national coverage at cost analysed prices, as this network is the lifeline for all electronic communications. This is clear when one considers that effective competition has not strengthened significantly on the relevant market during the long time that has passed since the last analysis was made of this market in 2007, despite the existence of extensive obligations on Mila during that period. In addition to this, effective competition on various retail markets has not strengthened significantly during this period, such as for example on the Internet market where Siminn has for many years had something over 50% market share, despite the fact that extensive wholesale obligations have been borne by the Siminn Group during this period.

147. As previously stated, Mila controls a trunk line network that covers the whole country and an obligation for granting wholesale access to the networking question is borne by that company. This obligation is not bound to specific regions. Mila therefore offers wholesale access to trunk lines across the whole country and the price does not vary by region. The PTA believes that pricing on the market in question strongly indicates that this is an instance of a single geographical market for trunk line segments of leased lines in this country. Nor do Mila competitors offer prices that vary by region in their distribution areas nor prices that differ significantly from those of Mila on the relevant market[88]. Retail prices of electronic communications operators on related retail markets do not differ by region and trunk segments of leased lines are for example procurements for retail products such as mobile phone and Internet service. Pricing and other conditions of electronic communications undertakings on the relevant market are thus comparable at all locations in the country.

148. A possible difference in quality and characteristics of service is another factor that has to be examined to determine whether this has an impact, when evaluating whether it is appropriate to define separate geographical markets. In the opinion of the PTA there is no significant difference in quality or characteristics of service on the relevant markets by region. Where such service is generally available, the quality is usually good. In addition to this, comparable technology and standards are generally available across the whole country.

149. The PTA considers that the number of retailers is not as strong an indicator of geographical division in the trunk line market as in the markets related to access networks which are the main subject of discussion in the ERG and BEREC guidelines. It is nevertheless appropriate to note that the number of retailers of electronic communications services is generally the same at most locations in the country. There is no discernible difference in the

[88] In the Capital City Area, it seems that recent development has been such that GR is finding it difficult to compete with the Mila prices which are however cost analysed in accordance with obligations to this effect that are borne by Mila. Mila prices are somewhat lower than GR prices and in addition to this Mila has a larger product offer. It is clear that electronic communications operators have been increasingly transferring their business from GR to Mila in the Capital City Area and Mila has been receiving an increasing share of new business. This incontrovertibly indicates that GR is increasingly compromised in competition with Mila on the relevant market.

marketing by retail operators by region.

150. The service offer of electronic communication operators on the relevant market is generally comparable throughout their operating territory. It is however of course the case that when a party with national coverage such as Mila, updates its leased trunk lines with new technology that this updating commences at locations where economy of scale is greatest.

151. There is no apparent fundamental difference in purchasers' needs depending on region. Purchasers on wholesale markets are electronic communications companies that either use trunk lines as a procurement for general electronic communications services or for broadcasting services. Most of these companies operate services across the whole country. This means that it is not possible to identify a specific group of purchasers in specific regions that have other needs than purchasers in other regions. The nature of demand thus does not vary between regions to any significant degree.

152. With respect to access barriers one can generally say that they are high wherever one looks. It is mainly local utility companies that have access to patient capital and more prosperous municipalities that have installed fibre-optic infrastructure in this country during recent years with the exception of Mila. An operator such as Vodafone, which is the second-largest electronic communications operator in the country after the Siminn Group, has for example not felt capable of building its own fibre-optic network.

153. With the above in mind it is clear that customers of companies operating on the relevant market do not perceive a significant difference by region as their preferences and purchasing patterns are generally analogous whether one considers the country as a whole or individual regions.

154. It is in no way possible to assert that there is a general tendency towards effective competition on the relevant market, whether one looks at the country as a whole or individual regions which Mila considers should be defined as separate geographical areas, such as the Capital City Area and the Fibre Optic Ring. The Vodafone market share of the relevant market is far too small to be able to provide Mila operations with competitive constraint to any significant degree. In addition to this the Mila position in the Capital City Area is very strong and the PTA has demonstrated that the GR position has been deteriorating recently and that it is likely that this trend will continue.

155. Here above the PTA has assessed homogeneity of competitive conditions between the whole country on the one hand and the Capital City Area on the other. The issues that were examined were as follows: Entry barriers, distribution of trunk line networks, competitive pressure from new trunk line networks on related retail markets, number of operating electronic communications operators, market share, pricing, service offer, quality and characteristics of services, marketing, nature of demand and possible tendency towards effective competition. The conclusion is that competitive conditions in the areas in question are not sufficiently heterogeneous to justify segregation of the geographical market. The most important issues in the opinion of the PTA are comparable price and the large Mila market share, whether one looks at the country as a whole or the Capital City Area. It is clear that Mila would be designated as an undertaking with significant market power, regardless of whether the geographical market was defined as the country as a whole or whether it was segregated into two parts in this manner.

156. On the basis of the above specified preliminary investigation, the PTA considers there to be no need to make a more detailed analysis of geographical circumstances on the relevant

market. Competition conditions are not sufficiently heterogeneous between individual regions to justify dividing the country into regional markets and in addition to this, the boundaries of coverage are unclear. In addition to having a dominant position in the areas where there is no competition, Mila still has a very strong position in those areas where another network is also on offer. It was thus clear that Mila would be designated as an undertaking with significant market power on all the geographical markets that might be segregated. With the above in mind it is the opinion of the PTA that the wholesale market for trunk segments of leased lines embraces the whole country[89].

5.0 Evaluation of whether obligations may be imposed on the relevant market (the Three Criteria Test)

5.1 General

157. According to Articles 16 and 17 of the Electronic Communications Act the definition and analysis of markets shall be made in accordance with obligations according to the EEA Agreement. In the Regulation on Market Analysis in the field of Electronic Communications no. 741/2009, the methodology is introduced that is described in the ESA Recommendation on the relevant market and in the ESA guidelines for market analysis. In the Regulation one can find a listing of the markets specified by ESA in its Recommendation and in Article 4 of the Regulation there is discussion on the conditions that markets need to fulfil in order to be susceptible to obligations pursuant to Chapter VII of the Electronic Communications Act 81/2003.

158. The wholesale market for trunk segments of leased lines (Market 14) has been removed from the list in the ESA Recommendation for the markets that are pre-designated as lacking competition. Despite the fact that the market is no longer in the ESA Recommendation, this does not automatically mean that possibilities for administrative intervention do not exist in Iceland. The market needs to be re-examined as the PTA has designated companies with significant market power on this market and it has to be decided whether this designation should be maintained or whether it should be lifted. Circumstances may be such in this country that the market fulfils the requirements for susceptibility to ex ante obligations, though in general terms, this may not have been considered to apply in EEA states when the Recommendation was reviewed[90]. In Items 21 and 22 of the Preamble to the ESA Recommendation from 2008 there is discussion on instances where regulatory bodies may have reason to deviate from the Recommendation. There it is stated, among other things, that if a market that was in the Recommendation from 2004 is not in the new Recommendation, the electronic communications regulatory bodies can examine whether it still fulfils conditions for ex-ante obligations given the circumstances of the country in question.

159. This means that if the PTA considers that circumstances are such in this country that the position on some of those markets that have been removed from the Recommendation are

[89] It should be noted that of the eleven states apart from Iceland that still analyse the relevant market there are only two states (Croatia and the United Kingdom) which divide the market into geographical areas. In the United Kingdom the division results from historical reasons where the Hull region is a special region where a local company has operated for a very long period of time.

[90] Including Iceland there are twelve states that still designate companies as having significant market power on the relevant market.

different from the norm in the EEA area, such that barriers to entry are still high, competition not foreseeable in the near future and general competition rules do not suffice to resolve market problems, then the PTA can request endorsement from ESA to examine the relevant market with a view to designating parties as having significant market power and to making a decision on obligations. The PTA can provide as a single submission to the ESA an evaluation of whether the market fulfils the three criteria[91], an analysis of the market and a description of planned obligations should conditions exist for imposing such obligations.

160. In evaluating whether the market still fulfils the conditions to be susceptible to ex-ante obligations on companies on the market[92], the same methodology shall be used as when the market was specified in the Recommendation. The three criteria that the relevant market needs to fulfil are the following:[93]

1) That there exist high and non-transitory barriers to entry, whether they result from organisational, legal or administrative causes. It should be taken into consideration whether it is possible to surmount such barriers during the period of reference, taking into account the flexibility of electronic communications markets.

    a. Entry barriers related to organisation and structure of the market can for example be related to the scope of an electronic communications network, sunk costs and control of infrastructure that is difficult to duplicate.

    b. Legal and administrative barriers can for example be related to the allocation of frequency ranges.

2) That active competition cannot be foreseen during the reference period. In connection with this, one must among other things examine the competition conditions that pertain within the entry barriers.

3) That the application of existing Competition Law would not on its own suffice to provide remedies where the market has failed. The following conditions could indicate the above:

    a. If major action is required to redress a failure by the market.

    b. If intervention is required relatively often and without delay.

    c. If special action is required to create legal predictability.

The market needs to fulfil all the above criteria in order for it to be possible to impose obligations pursuant to Articles 27-32 of the Electronic Communications Act.

161. The following is an examination by the PTA on whether these conditions apply to the wholesale market for trunk segments of leased lines in the light of the circumstances in this

[91] The Three Criteria Test. Three Criteria Test).
[92] See Articles 6, 7 and 15 of the Framework Directive, Items 6 and 22 of the preamble to the ESA Recommendation on the relevant market from 2008, Chapters 2.2 and 2.3 in the Explanatory Note to the Recommendation of the EU on the relevant market from 2007.
[93] ERG has issued a document where these conditions are discussed in more detail; ERG Report on Guidance on the Application of the Three Criteria Test - ERG (08) 21 ERG Report on Three Criteria Test final 080604.

country. The discussions focused on the extent to which the ESA Recommendation is relevant to current circumstances in the relevant market in this country.

162. In the Explanatory Note to the EU Commission Recommendation from 2007 it is stated that in most member states, competition on the markets for trunk segments of leased lines is active because of the large number of parallel systems that have been deployed. The Commission also considers that this development will continue and for this reason has removed the relevant market from the list of predefined markets.[94]

163. The Commission however clearly states that at many locations, trunk lines are only being offered by a single operator, particularly in sparsely populated areas, and it is not possible to assume that it will be sufficient at all locations to apply the general rules of Competition Law to address failures. The following is stated on this issue in the Commission Explanatory Note:

> *Nevertheless a significant number of routes may continue to be served only by a single operator in particular where the route is thin, i.e. where the volume and value of traffic is lower. This will vary within and between Member States but often new entrants cannot be expected to compete with the established operator across the whole of the territory. Individual NRAs may be in a position to demonstrate that trunk segments of leased lines continue to fulfil the three criteria and are susceptible to ex ante regulation. Whilst it might be considered that Competition Law can address the failure on such thin routes, it is unrealistic to rely solely on Competition Law for as long as the number of unduplicated trunk routes in a country remains high, considering the general costing and pricing principles that would have to be applied throughout the network.*

164. This market will be discussed with particular reference to these comments from the Commission.

5.2 Criterion 1: High and non-transitory barriers to entry

5.2.1 General comments on barriers to entry

165. The first criterion that needs to be fulfilled for there to be a reason to intervene in a market with ex-ante obligations according to the Electronic Communications Act is that there are high and non-transitory barriers to entry to the relevant market.

166. 'Entry barrier' is a collective name for various factors that can influence companies' market power. If there are few barriers to a market then potential profitability is an attraction for new companies to gain market share from the incumbents. Potential competition from new parties can influence the behaviour of a company with SMP and can diminish its harmful influence on competition. Entry barriers on the other hand weaken or prevent competition.

167. 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

[94] Explanatory Note Accompanying document to the 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 (Second edition) {(C(2007) 5406)}, page 38.

situation for an incumbent is one where there are many entry barriers and few exit barriers. In such circumstances incumbent companies deter new companies from establishing themselves and companies lacking profitability will easily give up.

168. Here in this country there are no significant legal barriers to entry for new electronic communications companies. No special licences are needed to provide electronic communications services and all companies with their legal abode in the EEA or in member states of the World Trade Organisation are authorised to operate electronic communications services in this country, subsequent to a simple registration process. There are no known instances of planning or construction laws having created significant barriers with respect to the location of trunk line segments.

169. The main entry barriers shown in the PTA analysis of the market in 2007 were control of facilities that are difficult to duplicate, sunk costs, economies of scale and scope and barriers to growth. The following Sections will examine these issues in the light of circumstances today.

5.2.2 Control of facilities that are difficult to duplicate

170. When a company has control over infrastructure that is difficult or expensive for others to duplicate, this can be a significant barrier for competitors. An example of such facilities is the Mila trunk line network at many locations in the country.

171. It is technically possible for new companies to build a trunk line network. Standardised technology which is openly available is used for this purpose. Some barriers could be in the form of the necessity to acquire permits to lay cables, but this barrier is in all likelihood surmountable in the vast majority of cases.

172. It is clear that a substantial trunk line network constitutes a very large investment and this can only be embarked on by parties with a very strong financial position. When one examines the development of a trunk line networks in this country it comes to light that very few of such networks has been developed by private sector companies. The largest fibre-optic network, that is to say the Mila circular route around the country, was built when the company was owned by the state and had a monopoly on operation of electronic communications networks. The project was implemented in cooperation with NATO which funded the cable and in return received three threads of eight for its own use. Other investments in trunk line networks have almost exclusively been made by energy companies in public ownership and these networks have limited distribution. Vodafone is however in private ownership but the company's trunk line network is based on one NATO fibre-optic thread which was leased and which is based on an investment made decades ago, an investment which is also the backbone of the Mila trunk line network.

173. From the time that the market was opened for competition, the development of new trunk line networks has been mostly local and has taken a long time. There was only one service provider on the transit route around the country until 2011 when Vodafone introduced the thread in question that the company had leased in the fibre-optic circular cable, but it took considerable time to bring the connection into service.

174. After the NATO Defence Force left Iceland there was no longer a need for all three threads in the fibre-optic circular cable for radar operations. It was decided to offer two of the threads in the circular cable for lease. The objectives were to reduce the fibre-optic cable operational costs, to increase public access to bandwidth and to increase competition on the

electronic communications market. The three threads were offered for tender in April 2008. Five bids were received from four companies. The bids from Fjarski (now Orkufjarskipti) and Vodafone received the highest scores. Fjarski however withdrew its bid. An agreement was finally made with Vodafone in February 2010 and there were no agreements made with other bidders. There were some delays in Vodafone being able to bring the thread into service, among other things because Mila denied Vodafone the access it required to connect its other electronic communications networks to the fibre-optic thread. Vodafone complained to the PTA and in November 2010 the PTA published a Decision where Mila was ordered to provide the requested access.[95] Vodafone brought its circular fibre-optic connection into service in 2011. There are no current plans to lease another thread for use on the public electronic communications market.

175. Vodafone access to the trunk line around the country does not constitute development of a new transit route but rather that Vodafone now has access to part of the cable route controlled by Mila, but only one thread against the five Mila threads. Vodafone's permission is rather that of a party leasing trunk line connections in wholesale where the state is the lessor, particularly as Vodafone uses the network first and foremost to develop its all electronic communications network which is then in turn used to provide services to end users. There are now about 5 years remaining of the initial 10 year lease agreement, and in addition to this Mila has appealed the lease agreement in question to ESA as possibly being unlawful state support. Vodafone is thus far from being in as strong position as Mila on the circular route and there is furthermore uncertainty about future arrangements after a period of 5 years.

176. The PTA considers in the light of developments in recent years that a trunk line network is indisputably a facility that is difficult to duplicate. The development of networks has been slow and localised and most trunk line networks have been built by public bodies or by companies owned by public bodies. There has been little private investment in trunk line networks and it has proven difficult for Vodafone to develop facilities to enable use of the above specified NATO trunk line network. The PTA does not expect substantial new investments in trunk line networks in the near future, given developments in recent years, and there is no information or indications that electronic communications companies are planning significant developments in the near future. The PTA considers such development to be at least not likely without public support (state support), but such funding has been very limited in recent years. In the light of the small size of the electronic communications market in Iceland and of population size and spread it is clear that there is no basis for the same number of parallel trunk line networks as exist in many places abroad.

177. The PTA considers that a trunk line network is a facility that is difficult to duplicate. Mila controls a substantial trunk line network across the whole country while other companies have much smaller networks, some of which are not built on solid foundations where they have temporarily lease agreements. It is a significant barrier to entry for new companies that they would find it extremely difficult to develop a trunk line network that could seriously compete with the Mila network.

5.2.3 Sunk costs

178. When a company commences operations on a new market this normally involves initial costs for investment, advertising and development. If the operations are not successful then it may sometimes be possible to recover part of the start-up cost with for example the sale of the basic investment and equipment. The costs that the company is left with when entry into the

[95] See PTA Decision no. 34/2010.

market does not work are called sunk costs. The risk of significant sunk costs resulting from high start-up costs means that new companies face greater risk in their decision-making than companies incumbent on the market. This difference in cost can thus act as an entry barrier for new companies.

179. If entry to the market can entail major sunk costs then companies incumbent on the market could tend to make even greater investments in order to discourage possible competitors from entering the market. Incumbent companies can thus use sunk costs as a defence against potential competition from new parties by increasing entry barriers to the market.

180. Mila is the only electronic communications company that controls an access network with national coverage and this network has taken decades to develop. It would be extremely costly for a potential competitor to develop a similar or competitive network with the same scope.

181. Costs other than those incurred in building the network are insignificant and there is no certainty that they involve sunk costs. There is no allowance made for significant marketing costs as the product is first and foremost aimed at the corporate market where companies often look for the best offers with calls for tenders and sales operations are direct with visits to customers, interviews and design of tenders.

182. Should there prove to be no operational basis for a trunk line network in which a company has invested, it is unlikely that the company will be able to recover its investment costs by selling the network should it decide to cease operations on the market. There is therefore a major risk in large investments in new trunk line networks.

183. It is clear that new parties will be faced with very significant costs in investment in networks if they wish to enter the trunk line market. Such costs could mostly be sunk costs. The PTA considers that sunk costs are an entry barrier to the relevant market.

5.2.4 Economy of scale

184. 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 market advantage. Incumbent network operators endeavour to operate their own networks with maximum usage. 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.

185. Mila is the country's largest electronic communications company in wholesale of electronic communications services, whether by turnover, size of electronic communications networks or number of customers. Mila's economy of scale is manifested among other things in lower unit costs resulting from a large number of sold units. There can also be economy of scale in operations, for example with better use of human resources and other operational resources required to provide satisfactory services. This factor can in some instances be a barrier to entry into the market.

186. Is clear that there is significant economy of scale in operating a trunk line network as fixed costs are a significant part of the cost base for connections. The economy in this instance

is among other things in lower unit costs as transfer speed increases. An example of this is that the cost for each 2 Mb/s is much lower in 2.5 GB/s connections than in 45 Mb/s connections.

187. The PTA considers that Mila enjoys significant economy of scale on the market here under discussion, because Mila offers services across the whole country and has the largest number of customers. Vodafone and GR have grown since the last analysis of this market was made and the possibilities for more efficient operations have increased proportionately. Both these companies are however considerably smaller than the Siminn Group and in addition to this they have much smaller operations on the relevant market. For this reason the PTA considers that there is still a considerable difference in potential economy of scale for Mila and the Siminn Group on the one hand compared to other companies on this market on the other.

188. The PTA considers that Mila enjoys greater economy of scale on this market than any of its competitors because of a very diverse product offer across the whole country and because of its large number of customers on various electronic communications markets. Economy of scale and synergies contribute to the strengthening of Mila's position on the market. The PTA considers that Mila on its own and as a part of the Siminn Group enjoys economy of scale, which contributes to the strengthening of its position on the market and that this creates an entry barrier to the market in question.

5.2.5 Economy of scope

189. 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.

190. Mila benefits from having a very wide product offer and within the Siminn Group one can find the most varied offer among electronic communications companies in this country. Companies therefore do not need to deal with other suppliers if they need services other than trunk lines, which is common. In addition to this the networks within the Siminn Group have the greatest scope of any in this country.

191. The PTA considers that economy of scope exists with Mila in the case of connections through trunk lines which other companies on the market do not enjoy.

5.2.6 Barriers to growth

192. A market with significant potential for growth is much more attractive to new operators than is a stagnant market. It is probable that undertakings contemplating entry into a stagnant market must lure customers away from incumbents. 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.

193. There are trunk lines on all routes where they are needed. The market is not likely to grow in the next years in such a manner that it will be necessary to deploy many new lines to new locations. New companies that wish to commence operations on the market will therefore need to lay trunk lines, or lease them, on the same routes as the incumbents and attempt to take customers from them. There are no indications that connections on this market will increase significantly in the coming years. There is however a steady increase in data quantity transmitted through electronic communications networks, including through trunk lines. The

market will continue to grow in the sense that demand for carrying capacity will increase. It is however foreseeable in the coming years that the existing trunk line networks will not be able to meet demand as it is possible with a variety of technical solutions to increase the carrying capacity of older networks. The main new cable routes that have been installed in this country have been laid by Orkufjarskipti, for the specific purpose of interconnecting power stations. These cable routes are first and foremost through the highlands and generally do not reach urban locations. Nor does Orkufjarskipti operate by choice or directly as a wholesale provider of trunk connections, but simply leases excess capacity in the form of dark fibre, to parties who so request, which is surplus to the needs of the owners of the company, i.e. Landsvirkjun and Landsnet.

194. It is the PTA conclusion that growth possibilities in the field of installation and operation of trunk line networks are limited and that the lack of growth possibilities is likely to act as a barrier for new companies.

5.2.7 Conclusion

195. It is clear that although it is possible to build a new system of trunk lines, the development cost of such a system and related problems are such that control of facilities that are difficult to duplicate is in the opinion of the PTA a significant entry barrier to the market in question.

196. The PTA considers there to be every likelihood that companies that wish to leave the market will not be able to fully recoup investments made in trunk line networks. This particularly applies if network operations have not been successful. The PTA considers that sunk costs are an entry barrier to the relevant market.

197. Mila, both on its own and as part of the Siminn Group, enjoys economies of scale and scope that competitors cannot foreseeably match during the lifetime of the analysis.

198. The wide distribution of incumbent parties, particularly of Mila, to the market and the capacity of existing systems, in addition to the increase in capacity of existing networks made possible by technological advances, means that possibilities for growth on the relevant market are limited. The PTA therefore concludes that a lack of possibilities for growth is likely to act as a barrier to new companies.

199. With the above discussion in mind the PTA concludes that there are high and non-transitory barriers to entry to the relevant market, which strengthen Mila's position.

5.3 Criterion 2: The market does not tend towards active competition

200. Another criterion that needs to exist is that active competition is not expected during the period of reference where normally one expects a market analysis to apply to the following two to three years. It has to be examined whether active competition can flourish on the market if obligations are not in place on SMP parties in the market. The issues that the PTA considers appropriate to examine in order to assess the possibilities of active competition are the following:[96]

[96] These criteria are selected on the basis of the ERG Report on Guidance on the Application of the Three Criteria Test - ERG (08) 21 ERG Report on Three Criteria Test final 080604.

- Developments in market share
- Price development and pricing behaviour
- Control of infrastructure not easy to duplicate
- Barriers to expansion
- Potential competition

5.3.1 Developments in market share

201. The first point worthy of examination when evaluating whether a market is tending towards active cooperation is market share of the companies on the market. A non-transitory high share for one company can indicate that it has significant market power, which means that there is no active competition on the market. If there is little indication that market share held by the company in question is rapidly decreasing then this is an indication that active competition cannot be expected in the near future.

202. In the prior PTA analysis of the market, statistics were used from the year 2005. At that time the Siminn share was about [85-90%][97] by revenue. In Section 6.2 there is detailed discussion on market share. It is estimated that the Mila market share by revenue was [75-80%][98] in 2014. The Mila market share (previously Siminn) has thus only dropped by approximately [..][99] percentage points over a period of 9 years. There is no indication that this development is accelerating and the PTA considers it safe to assume that market share will still be well in excess of reference levels for significant market power during the coming years.

203. The Mila share was also about [70-75%][100]by number of leased line connections at the end of 2014. The reduction in the number of connections with Mila is mainly because purchasers are discontinuing their 2Mb/connections and smaller, that are supplied for older communication protocols. Revenue does not decrease correspondingly, as purchasers add Gigabit Ethernet and other more modern connections where one connection can possibly replace many smaller connections. For this reason the PTA considers revenue to be a more proper measure of the position of companies on the relevant market.

204. The development of Mila market share for the period 2005-2014 is such that the company has lost about [..%][101] share to other electronic communications operators. Furthermore the GR market share has decreased by about [..%][102] during this period. The Mila position is thus still very strong, whether one looks at the country as a whole or simply at the Capital City Area where the company has [65-70%][103] market share.

205. With the development of market share in mind, the PTA considers it unlikely that there will be active competition on the market in the coming years and almost certainly not during the next two to three years which is the estimated period of validity of the market analysis.

5.3.2 Price development

206. Price development can indicate the level of Competition Activity on the relevant market.

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[97] Margins for confidentiality.
[98] Margins for confidentiality.
[99] Omitted for confidentiality.
[100] Margins for confidentiality.
[101] Omitted for confidentiality.
[102] Omitted for confidentiality.
[103] Margins for confidentiality.

Stable prices strongly indicate a low-level of competition while price fluctuation and reduced prices can normally be attributed to competition on a market.

207. On the market for trunk segments of leased lines the obligation rests on the largest company, Mila, to price according to cost. The PTA must review and endorse all price changes and their criteria before they come into force. For this reason, price development during recent years is not as significant an indicator of the competition status as it would be on a market with free pricing. One must however keep in mind the fact that the obligation is first and foremost intended to prevent excessively high prices and there is no objection to Mila reducing prices where possible.

208. In the prior PTA analysis of this market a description was provided of pricing of trunk line connections with data transfer capacity from 64 Kb/s to 622 Mb/s with reference to 2 km, 5 km, 50 km and 200 km distances.[104] Prices were examined for the period 1 January 2000 - 31 December 2005. The conclusion of that examination was that wholesale prices (monthly charge and charge for kilometres per month) from 1 September 2000 until 1 September 2005 had remained unchanged for connections up to 2 Mb/s but had fallen for connections with greater carrying capacity, that is to say 45 Mb/s to 622 Mb/s. The PTA considered that the development did not indicate significant market squeeze from competition but at the same time the PTA concluded that price development was not an adequate indicator for market power on the relevant market as obligations for price control had been in force during the period in question.

209. Since the conclusions of the market analysis were published in 2007, Mila has been subject to price control. All price changes have been based on historical cost analysis and have only come into force with the endorsement of the PTA.

210. The tariff for trunk lines was last changed in 2011 with the PTA Decision no. 14/2011. Mila submitted the initial cost analysis for the companies leased lines to the PTA on 1 July 2009. The analysis was submitted in accordance with the obligations imposed on the company for price control and cost accounting with the PTA Decision no. 20/2007. The PTA made certain objections to the cost analysis and to the Mila plans for tariff amendments but in 2011 a conclusion was reached in the matter and a new tariff came into force on 1 August 2011 The main changes in the tariff were as follows: The arrangement for distance measurement was changed and the reference is now geodesic distance instead of real measurements of lines and this reduces the number of kilometres by an average of 40% when distances in kilometres are calculated. The prior discount arrangement for Mila trunk lines was discontinued and was replaced with discount categories based on length of agreements and not on quantity. Discounts are 5%, 10% or 15% depending on the length of the Agreement being 1, 2 or 3 years in each instance. The monthly charge for 2 Mb/s or less connections was increased and decreased for larger connections. In general unit prices rose for each kilometre but when real line measurement had been taken into account the result was that charges for narrowband connections (2 Mb/s and smaller) increased while charges for broadband connections fell by tens of percentage points, particularly for connections of 150 Mb/s and larger. When the new discount terms (5-15%) are taken into account then prices can fall in most instances. Price changes for Mila trunk lines in the year 2011 are further discussed in Section 4.28 of PTA Decision no. 14/2011.

[104] Source: Post and Telecom Administration. Analysis of the retail market for minimum set of leased lines (Market7), on the wholesale market for terminating segments of leased lines (Market 13) and on the wholesale market for trunk line segments of leased lines (Market 14), 14 September 2007, pages 86-92.

211. As stated here above, the Mila tariff currently in force is from 2011 and is based on the company's cost analysis which was endorsed as amended by the PTA. If one takes into account the Mila cost analysis for trunk line connections which is now being discussed by the PTA, it is clear that the development towards reduction of prices for larger connections will in general continue. Price changes have been controlled by obligations imposed by the PTA in 2007 which means that it is not possible to draw major conclusions with respect to competition on the market on the basis of price development of recent years other than the reductions resulting from increased demand for larger connections and from the increased economic efficiency of such connections resulting from technological development. There is little evidence of pressure from competitors having led to price reductions where there is competition on the market.

212. Tariffs of parties to the market are similar for comparable service. According to the PTA sources on pricing of parties other than Mila on the trunk line market, prices are in fact very similar to those of Mila which means that they are not a deciding factor in the choice of service provider when it comes to deciding the network operator to make an agreement with. The above does not indicate much competition in pricing of trunk line connections, though more operators than Mila offer the service in specific areas, including the Capital City Area.

213. The PTA considers that Mila pricing is not a reliable indicator of the company's market strength, because of the obligation for price control of the company's tariff. On the other hand there is little evidence to show that Mila is subject to market squeeze as prices on the market have first and foremost developed in accordance with technological developments and increased capacity in accordance with the huge increase in data volume.

5.3.3 Control of facilities that are difficult to duplicate

214. This issue was covered in the section on access barriers here above. It was stated there that it was difficult for new companies to develop a network that could compete with the Mila network. This situation does not indicate that competition will increase to any significant degree on the market in the coming years. The largest competitor of the Siminn Group, which one can assume is also the main, if not the largest external Mila customer, that is to say Vodafone, does not have its own trunk lines except in the form of the lease of one thread in the circular fibre-optic cable which was initially laid by Siminn and developed for Siminn needs as they were at that time. This means that the Vodafone involvement in the relevant market is not, with respect to connections on the fibre-optic circular cable, such that new facilities are being offered on the relevant market. Development of recent years does not indicate that within the lifetime of this analysis a new fibre-optic network will be introduced which will be a realistic option to the Mila nationwide offer.

5.3.4 Barriers to expansion

215. Reference made to the discussion in Section 5.2.6. It is the PTA conclusion that growth possibilities in the field of installation and operation of trunk line networks are limited and that the lack of growth possibilities is likely to act as a barrier for new companies. This means less likelihood of active competition on the market.

5.3.5 Possible competition

216. If one can expect entry of new parties to the market, the likelihood of competition becoming active will increase. A number of companies operate on the market for trunk lines. None of these companies has however a network covering the whole country nor a comprehensive product offer like Mila. One must also keep in mind that Siminn, which is a retail unit in the Siminn Group and by far the largest electronic communications company in

the country, does business almost exclusively with Mila on this market, and in addition to this Mila has a dominant position in related markets.[105] Competition on the relevant market is also characterised by the largest purchaser, that is to say Siminn, in all likelihood not having to conduct itself like an active purchaser, that is to say that one can assume that even though other network operators offer advantageous rates, Siminn will not transfer its custom from Mila which is a member of the same Group. As an example of the way the Group conducts itself one can note that Siminn has never leased fibre-optic local loops from GR but has restricted its custom to Mila which first and foremost operates copper local loops in the GR operational territory.

217. The smaller companies are mostly related to energy production and or distribution and have developed local networks in their operating territory in the energy market. Companies related to the energy industry are 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 the electronic communications operations of the relevant energy companies enjoying concessions, which limits the competitive latitude of the companies in question. Vodafone is the only electronic communications company on the trunk line market with the exception of Mila which is not related to an energy company. Vodafone has a circular connection around the country on the previously mentioned fibre-optic circular line but its network is in other respects much less comprehensive than that of Mila.

218. Mila competitors can provide competition in their limited territories but it is unlikely that they will embark on a major development outside these territories in the light of development of networks during the last decade. Should the above specified investigation by ESA on the Institute of Defence call for tenders for lease of NATO fibre-optic threads to Vodafone lead to a decision that the conclusion had not been based on market price criteria, then the current Vodafone involvement is subject to considerable uncertainty. There are only 5 years remaining of the initial term of the lease and it is uncertain what will happen after that point in time. Mila does not have to do live with such uncertainty and can therefore make long-term plans without being concerned about losing its networks.

219. It is not likely that more parties will enter the trunk line network in the coming years. It has proved impossible for parties other than energy companies to invest in laying new trunk lines. There is little to indicate that this will change in the foreseeable future. It is expensive to lay fibre-optic cable underground and there is no less expensive alternative method. Wireless connections have various limitations which means that they cannot be a substitute for fibre-optic except in exceptional instances.

220. Vodafone does not seem to plan laying its own network but seems more likely to continue to base its operations on networks owned by other parties. The fibre-optic thread that the company introduced into service in the first part of 2011 seems to be intended first and foremost for the company's own use. This means that Vodafone does not intend to enter into competition on the wholesale market for trunk lines except possibly to a very limited degree. Vodafone provides competitive pressure on Míla in part of the relevant market but cannot provide comprehensive service in trunk line wholesale analogous to service provided by a network operator which has its own infrastructure.

221. There are no more threads available for use in the public electronic communications

[105] The wholesale market for access to fixed line public access networks (M4), wholesale broadband access (M5) and the wholesale market for terminating segments of leased lines (M6).

market in the circular fibre-optic line as things stand at this moment in time This means that there are no other companies that have the option of doing what Vodafone did, that is to say to lease a backbone network for trunk lines. When another thread in the line was on offer then there were no companies other than Vodafone that were prepared to embark on operating a leased thread. It is clear that new companies that intend to enter the market will need to invest in fibre-optic lines to some extent. The same can be said about Vodafone if one looks to the future as the circular fibre-optic line will need to be renewed at some point in time as most of the line is almost 30 years old. In addition to this there is the fact that there only remains 5 years of the term of the lease and there is uncertainty about what will happen at the end of that period. It is unlikely that any company will have the capability or will see the advantage in such an investment in coming years, except to a very small degree, when there was no more interest in leasing threads in the above mentioned call for tenders than proved to be the case

222. In the opinion of BEREC it is a key issue in ensuring active competition that there are more than two network operators in a given area thus preventing undesirable oligopoly.[106] It is clear that such a situation does not exist except in exceptional instances in the relevant market in Iceland. As stated in Section 3.2, company circumstances vary greatly. This means that the number of companies offering service in a given area does not give a true indication of the competitive position between active network operators.

223. PTA considers it unlikely that new parties will enter the market in the coming years that can provide significant competition. Furthermore the PTA considers it unlikely that competition from parties that already operate on the market will increase significantly in the foreseeable future, given the limitations to their networks and the development of market share in past years.

5.3.6 Conclusion

224. In the discussion here above it is stated that the Mila market share is still very high [75-80%][107] in 2014 and its reduction has been very slow in recent years. The drop in market share has on average been just over [..][108] percentage point per annum for the last 9 years and there is no indication that it has started to decline faster than before. Other parties to the market have less market share as there is no company with more than [5-10%][109] market share for the country as a whole.

225. One cannot draw many conclusions from Mila price development as the company is subject to price control. Prices on the other hand are very stable and there is no sign of a price war on the market.

226. Mila control of facilities that are difficult to duplicate is a barrier to the entry of new companies and makes it difficult for them to provide Mila with substantial competition. Barriers to growth exist on the market and they are conducive to limiting opportunities for active competition.

227. There is no likelihood that new companies will enter the market in the coming years, at least not with a substantial network. There are limits to the increase in competition that could come from smaller companies already on the market because their networks are much smaller

[106] See BEREC Common Position on geographical aspects of market analysis (definition and remedies), BoR (14) 73, 5 June 2014. Page 38.
[107] Margins for confidentiality.
[108] Omitted for confidentiality.
[109] Margins for confidentiality.

than the Mila network.

228. With the above in mind the PTA considers it unlikely that the market will tend towards active competition in the coming years.

5.4 Criterion 3: General rules of competition

5.4.1 General

229. The third criterion that must exist is that general rules of competition do not suffice to correct market failure. There are several ways according to general Competition Law to react to circumstances that are rooted in significant market power, but it is not axiomatic that they will suffice, particularly should circumstances call for substantial, frequent and immediate measures and where it is necessary to create predictability on the market.

230. According to the Competition Act no. 44/2005, the Competition Authority has measures at its disposal to react to company practices which can inhibit competition. In Paragraph 1 of Article 10 of the Act it is stated that any agreement or resolution between undertakings, whether binding or guiding, and concerted practices which have as their object or effect the prevention, restriction or distortion of competition are prohibited.

231. In Article 11 of the same Act there is a ban on abuse of a dominant market position by one or more undertakings. Such abuse can among other things be inherent in:

- Directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
- Limiting production, markets or technical development to the prejudice of customers;
- Applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
- Making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

232. Denial of access to trunk lines in wholesale or unfair conditions for access can be covered by these provisions of the Competition Act.

233. According to Paragraph 2 of Article 16 of the Competition Act, action taken by the Competition Authority can include any measures needed to bring an end to violations of the provisions of the Act or to respond to actions of public entities which may be detrimental to competition. The Competition Authority may take action both to change behaviour and structure in proportion to the infringement committed and as necessary to bring such infringement effectively to an end.

234. According to Article 17 of the Competition Act the Competition Authority can intervene in company mergers. Should the Competition Authority consider that a merger inhibits active competition by virtue of a position of market dominance of one or more undertaking coming into existence or where such a position is strengthened, the Competition Authority can annul a merger which has already taken place. The Competition Authority can also prescribed conditions for such a merger which must be fulfilled within a specified period of time.

5.4.2 The Decision of the Competition Authority no. 66/2013[110]

235. On 26 March 2013 the Competition Authority Decision no. 6/2013 was published. The Decision is based on a Settlement between Skipti hf., Siminn hf. and Mila and the Competition Authority with respect to seven cases involving Siminn market conduct which were being investigated by the Competition Authority. With the Settlement a clear separation was made between the Siminn Group core systems and Siminn retail operations.

236. The Decision was intended to prevent the Group's position in core electronic communications being leveraged to create a competitive advantage over competitors. For this purpose it was among other things prescribed that Siminn competitors should enjoy the same access to the Mila electronic communications infrastructure and electronic communications services with the same terms, conditions and quality as Siminn itself enjoyed at any given time. The same applies to non-discrimination with respect to all provision of information.

237. Mila's independence was enhanced with decrees on company business policy and scope of operations, with an autonomous Chairman of the Board and managerial autonomy, separate premises, obligations for confidentiality and a ban on sharing of specific services.

238. Major electronic communications systems and tasks were transferred from Siminn to Mila, among them systems that were transferred from Mila to Siminn in 2012. Mila operations will be significantly strengthened by these measures. This supports parity in competition at retail level and thus strengthens competition.

239. In the Settlement one can find general provisions on access to Mila services and systems. Mila is obliged to practise non-discrimination, impartiality and transparency towards the electronic communications companies that request access to electronic communications networks and other company facilities. It is specifically prescribed that Mila shall provide Siminn and its competitors with bitstream access.

240. Mila shall inform all its customers about new or planned products or services, changes or plans related to existing or planned services, at the same time and in the same manner. Furthermore Mila shall ensure with necessary measures that confidential information to which employees are privy about individual company customers shall not be disclosed to the mother company, to Mila sister companies or other customers, with the exception of those departments that are authorised to provide Mila with support services, see Article 5, should this be necessary in direct connection with the support service in question.

241. In the Settlement it is specifically stated that it has no impact on the jurisdiction of the Post and Telecom Administration pursuant to Act no. 69/2003 on those issues covered by the Electronic Communications Act no. 81/2003 and derived rules and decisions on the basis of electronic communications legislation.

242. The Settlement does not prescribe the offer of specified wholesale services by Mila, with the exception of bitstream access. There are no specific statements in the Settlement on the offer of leased lines and no provisions on price control of the tariff for leased lines.

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[110] According to information from the Competition Authority there is an amendment to the Settlement between the CA and the Siminn Group from 2013 such that this organisational amendment will be endorsed with further specified conditions during the completion of the procedure. This amendment will mean that Skipti hf. will be dissolved and Siminn will become the parent company of Mila.

5.4.3 Do general rules of competition suffice?

243. When assessing whether general competition rules suffice to correct market failure then one must keep in mind whether substantial measures are required, whether frequent and immediate intervention is required and whether special measures are needed to create legal predictability on the market.

244. Major measures would mainly be necessary when a company that controlled critical facilities refused to provide access to other parties and where the authorities needed to establish access with decrees to the company in question or perhaps by organising the nature of access through intervention in pricing and with other conditions.

245. As stated here above there are non-transitory entry barriers to this market which among other things are manifested in the difficulty of duplicating facilities comparable to those controlled by the largest company on the market. Smaller electronic communications companies need to rely on having access to the Mila network to be able to serve their customers across the whole country. No other trunk line network covers all inhabited areas of the country.

246. In the Explanatory Note to the Commission Recommendation from 2007 it is stated that in most member states there is active competition on the trunk line market, as at many locations trunk lines have been installed parallel to each other. It is also stated there that at certain locations, varying by member state, there are routes where one cannot expect that new undertakings can compete with incumbent network companies. This particularly applies where there are few inhabitants and where the need for data transfer is not particularly high. In such circumstances it is not realistic to solely rely on competition law.

247. In this country there are many routes where there is only one trunk line network. On some routes there are two networks but only very rarely would there be more. At many locations in the country network development is such that competition is not expected, at least not in the near future.

248. On the trunk line market quite substantial measures were required to ensure access at fair terms. It has been necessary to establish extensive price control with respect to conditions of reference offers with the accompanying cost analyses to ensure that all purchasers on the market can rely on getting access on an equal footing and at a price that is not far in excess of cost.

249. Experience has shown that not all problems on the market can be solved with one decision but rather that regular intervention is required. The PTA has in recent years has had to intervene frequently and has made decisions in matters concerning trunk lines. In this respect one can cite the following PTA Decisions:

- 20/2007 Decision on designating companies with significant market power and the imposition of obligations on the retail market for minimum set of leased lines (Market7), the wholesale market for terminating segments of leased lines (Market 13) and the wholesale market for trunk line segments of leased lines (Market 14).
- 23/2009 As a result of a complaint by GR about hosting charges by Mila ehf. - from 30 December 2009.
- 34/2010 Claim by Vodafone for access to Mila facilities for the NATO fibre-optic cable.
- 2/2011 With respect to the Mila reference offer for leased lines, Markets 13 and 14.

- 3/2011 On changes to the Siminn reference offer for the resale market for minimum set of leased lines (Market7), on the wholesale market for terminating segments of leased lines (Market 13) and on the wholesale market for trunk line segments of leased lines (Market 14).
- 14/2011 Regarding the Mila cost analysis of tariff for leased lines.
- 28/2011 On Vodafone claim for access to Mila leased lines.
- 35/2011 Regarding the Siminn hf. cost analysis of tariffs for leased lines.
- 2/2013 On amendments to the Mila reference offer.
- 15/2014 on Mila authorisation to provide new types of trunk line lease services.

250. This listing demonstrates that measures by the regulatory authorities are often required. It can hardly be expected that the competition authorities have the capacity for such frequent measures on one sub-market in the electronic communications sector. Furthermore the measures to which it has been necessary to resort have been particularly specialised, based on specific legal rules and on specialised knowledge of the authorities.

251. There are often very substantial interests tied to gaining access to leased lines without delay. It can prove impossible for electronic communications companies to commence operations in new areas if access to a trunk line in the area is not available. If new companies are denied access or if access is made uneconomic with excessive pricing or unfair terms and conditions it is possible that significant damage could result both for the company in question and for the market as a whole and consequently for consumers.

252. The risk of denial of access or of unfair conditions for access, calls for permanent measures being in place to ensure that it is always possible to gain access and that it is possible to react without delay in order to prevent new companies being repelled from the market with delaying tactics. It should be assumed that the decisions of a specialised authority that operates according to special rules of electronic communications legislation will, all things being equal, be a quicker way to assure access on reasonable terms, rather than decisions based on general rules governing competition.

253. When a company plans to attempt an entry into an electronic communications market where there is a need to invest significant sunk costs, it is necessary to be able to foresee the type of access it will be possible to gain to incumbents' networks and on what terms. Uncertainty about such issues would deter companies and investors from entering the market. Mitigating measures provided by the Electronic Communications Act which are ex-ante obligations on access and related issues, are much more conducive to increasing predictability on a market like this rather than general rules of competition which allow for intervention subsequent to instances of misuse of a dominant market position coming to light. In such cases where intervention is subsequent to the event it is often extremely difficult to predict the conclusion and the length of time the case might take. Obligations imposed by the PTA on companies with significant market power apply until a new decision has been made subsequent to a new market analysis where consultation has been made with parties to the market and with ESA. Transparency and predictability of such an arrangement is much greater than is generally the case with decisions made on the basis of the general Competition Law.

254. According to the above it is the conclusion of the PTA that general competition rules do not suffice alone to resolve market problems that exist on the relevant market for the time being and that specific rules in the Electronic Communications Act are more appropriate to deal with the extensive problems that exist on a market which is characterised by access barriers and

oligopoly and in addition they would more effectively ensure predictability on the market.

5.5 Conclusion with respect to the Three Criteria Test

255. The PTA conclusion with respect to the Three Criteria Test on the wholesale market for trunk segments of leased lines is that high and non-transitory access barriers exist on the market. Among the arguments for this conclusion is the facilities that the largest company on the market has developed over an extended period of time and which new companies would find difficult to duplicate. Very substantial sunk costs would be required to enter the market and such an investment constitutes a major risk in a small market. In addition to this Mila enjoys greater economies of scope and scale than do other companies on the market in question and furthermore there are limited opportunities for growth in the field of building and operating trunk line networks.

256. The PTA considers it unlikely that competition will be active on the relevant market during the lifetime of this analysis as the Mila market share is extremely high at about [75-80%][111] and has fallen little since the prior analysis of the Market was made in 2007. Other parties to the market have very low market share as no company has more than [5-10%][112] market share for the country as a whole. Prices are stable and there is no indication of strong price competition. Facilities that are difficult to duplicate and barriers to growth deter new companies from attempting entry into the market. There is no likelihood that new companies will enter the market in the coming years, at least not with substantial networks, and there is a limit to the increased competition that could come from companies already on the market.

257. The PTA considers that general competition rules do not suffice on their own to resolve those problems that may emerge on this market and there is a need for substantial and frequent intervention by the authorities where necessary predictability on the market can only be achieved by imposition of ex-ante regulation pursuant to the Electronic Communications Act. The specialised rules of the Electronic Communications Act are more appropriate than the general rules of Competition Law for handling the major problems that exist on the relevant market which is characterised by entry barriers and oligopoly.

258. The PTA considers it to be both authorised and necessary to embark on an analysis of the relevant market with the objective of assessing whether there are companies, one or more, with significant market power and whether there is a need to impose on that/roles companies obligations pursuant to the Electronic Communications Act.

[111] Margins for confidentiality.
[112] Margins for confidentiality.

6.0 Market analysis

6.1 Evaluation of significant market power

259. 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. In the following analysis of the market for trunk segments of leased lines the factors that that influence competition that the PTA considers could mainly impact this market, are examined. These factors are mostly the same as those used as a basis for the prior PTA analysis of the market and are as follows:

- Market share
- Overall size of a company
- Control of infrastructure that is difficult to duplicate
- Sunk costs
- Economies of scale and scope
- Access to capital
- Access to distribution and service systems
- Barriers to growth
- Product diversification / bundling
- Vertical integration
- Customer countervailing buying power
- Pressure from substitute products

6.2 Market share

260. A company’s market share is an important factor in market analysis. It is however not the only factor that decides whether a company is designated as having SMP, but it can give strong indications about whether such a situation exists or not. A very significant market share market share, that is to say over 50%, is on its own sufficient according to accepted case law, to designate a company as having a dominant position, except in exceptional circumstances. According to the Guidelines, a suspicion that single dominance is in existence with one company does not arise until market share has reached at least 40%. This depends, however, on the size of the company in comparison with its competitors. In some instances a company with a market share of less than 40% can have single dominance. A company with market share of less than 25% would in all likelihood not be considered to have dominance, except in the case where it had joint dominance with another undertaking.

261. Development of market share over a given period of time is also significant in the assessment of whether the company has a dominant market position. Should a company have a non-transitory high market share then this indicates a dominant market position, while on the other hand a fluctuating or falling market share will indicate the contrary. In new and growing markets a high market share is less of an indication of market strength than on a mature market with slow growth.

262. Market share can be measured in a number of ways but the most common practice is to measure by revenue or number of units on an electronic communications market. The PTA

considers that revenue is considered an appropriate metric on this market but numbers for quantity do not take into account the fact that the form of leased lines on the trunk line market varies greatly. Various communications protocols and regulated services have increased significantly in recent years at the cost of traditional leased lines. Revenue is recommended as a reference in the ESA[113] guidelines and revenue was also used in the prior PTA market analysis of the relevant market. When market share is assessed by revenue then internal and external revenue of the company in question on the market are taken into account. Despite the above the PTA has also assessed market share by number of connections to provide further support for its conclusion.

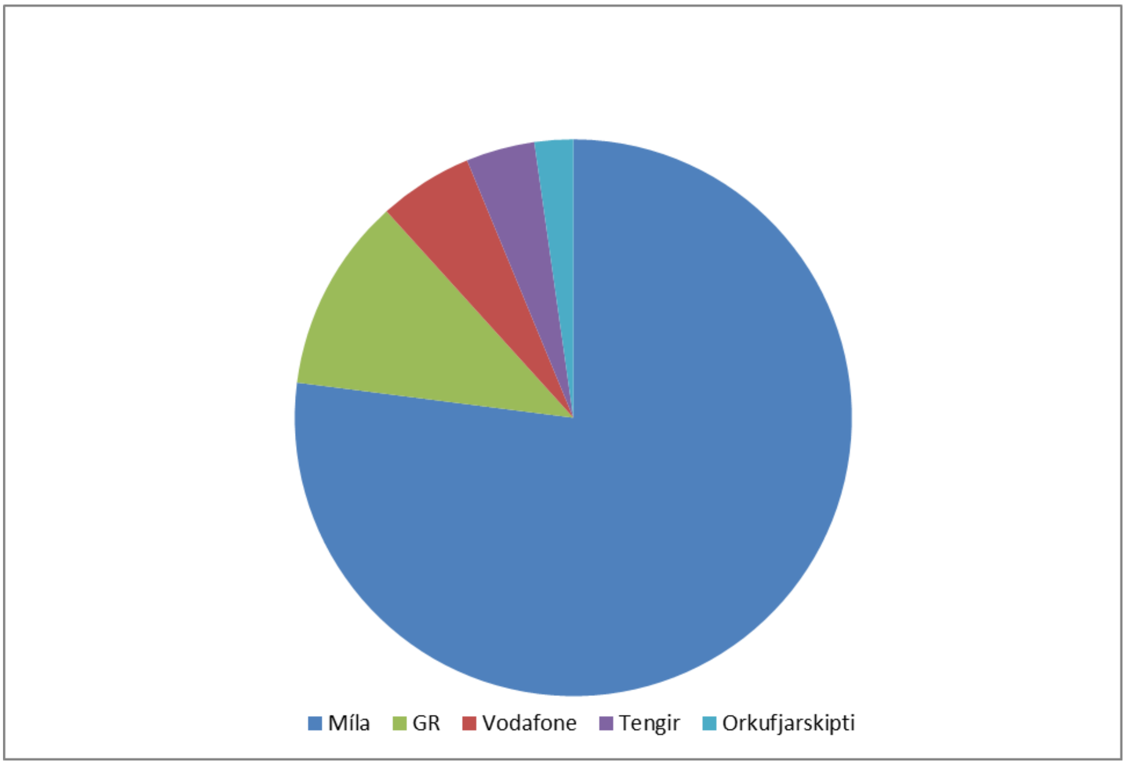
263. In the prior PTA analysis which was published in 2007, the market for trunk segments of leased lines was characterised by a strong Siminn position which had endured for many years where Siminn then enjoyed approximately [85-90%][114] market share by revenue.[115] Shortly before the PTA Decision on the relevant market was published there was a structural change in the Siminn Group to the effect that the Siminn sister company, Mila, was founded and a large part of leased line wholesale was moved to that company from Siminn. Both companies were thus designated as having significant market power on the leased line markets as they both belong to the same Group. The operation of leased lines was partly transferred back to Siminn from Mila in the year 2012 but subsequent to the Settlement between the Group and the Competition Authority in March 2013, Mila today manages all leased lines on the wholesale market within the Siminn Group.

264. When market share is assessed on the basis of revenue one has among other things to keep in mind that the two companies that are by far the largest on the market, Mila and GR, have differing criteria in their service offer, pricing and business relationship with subscribers. For example GR has until this point in time not sold individual leased lines but rather connections between two endpoints, or users, and has not split them according to whether they are trunk line or termination connections. In individual instances one has to assess the division of revenue between these two parts of operations and it is the opinion of the PTA that the deviation in this approach is insignificant with respect to total revenue on the market and thus does not affect the conclusion on market share in the relevant market.

265. In figure 6.1 one can see that in 2013 Mila had about [75-80%][116] market share by revenue on the wholesale market for trunk segments of leased lines. GR comes next with approximately [5-10%][117] market share, Vodafone [5-10%][118], Tengir [0-5%][119] and others have a joint share of approximately [0-5%][120].

[113] See Chapter 78 in the ESA Guidelines
[114] Margins for confidentiality.
[115] On the basis of market share in 2005.
[116] Margins for confidentiality.
[117] Margins for confidentiality.
[118] Margins for confidentiality.
[119] Margins for confidentiality.
[120] Margins for confidentiality.

Figure 6.1 Market share by company - revenue 2014



Source: Post and Telecom Administration

266. If the development of market share of the main parties to the market is examined for the period 2005-2014 it comes to light the Mila share has decreased by about [..%][121] between the years 2005-2014[122] and GR share has decreased by about [..%][123] during the same period for the country as a whole. However the market share of Vodafone, Tengir and Orkufjarskipti have jointly increased by about [5-10%][124] and this increase is mainly in the countryside.

267. The position of Mila in the Capital City Area is still strong where the company's market share was about [70-75%][125] in 2005 and is about [65-70%][126] in 2014 , which means that it has only decreased by about [..%][127] over a period of 9 years. The GR market share in the Capital City Area increases over the same period by an insignificant amount, from [25-30%][128] to [30-35%][129]. Vodafone enters the wholesale market as a new party on the basis of lease of a thread in the NATO cable, and the company's share is less than [0-5%][130] in the Capital City Area. In the countryside the Mila market share dropped during the period 2005-2014 from [90-95%][131]

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[121] Omitted for confidentiality
[122] In 2014 the market share of Gagnaveita Skagafjarðar is counted as Mila market share as the company is 100% owned by Mila.
[123] Omitted for confidentiality
[124] Margins for confidentiality.
[125] Margins for confidentiality.
[126] Margins for confidentiality.
[127] Omitted for confidentiality
[128] Margins for confidentiality.
[129] Margins for confidentiality.
[130] Margins for confidentiality.
[131] Margins for confidentiality.

to [85-90%][132], mainly because of an increase for Vodafone and Tengir. The Mila position is thus still very strong, whether one looks only at the Capital City Area or only at the countryside.

268. Even if the PTA considers that revenue gives a better picture of the leased line market than the number of connections, the PTA nevertheless considers it appropriate to also examine these numbers as stated previously and to assess whether such a comparison strengthens the above-specified conclusion on the status of the market. At the end of 2014 Míla had almost [70-75%][133] market share measured by number of leased line connections. Available statistics on development of the number of connections shows that the Míla market share has not changed much in recent years. Connections on the trunk line market vary greatly, from less than 2 Mb/s capacity and up to 10 GB/s and are provided with a variety of communication protocols. There is also an option on offer to lease dark fibre in some areas which gives the leasing party the possibility of achieving almost unlimited performance. The number of connections is thus not a deciding factor in the strength of a company on the market as connections are not internally comparable, particularly where new communications protocols provide a purchaser with the possibility of transmitting many kinds of service over one large connection. Revenue from service provided is therefore a better measure of the position of companies on the relevant market in the opinion of the PTA.

269. It is not clear how much development there will be with Mila competitors in trunk line networks during the coming years but one must consider it likely in the light of development in recent years that development will neither be substantial not rapid compared with current development. Vodafone has not achieved a major share of the trunk line network up to this point in time despite having brought its circular fibre-optic into use in 2011 as the company has first and foremost emphasised using the fibre-optic for its own services. It is possible that Vodafone, GR and other small companies on the market will increase their share to some extent in the coming years given developments of past years and the overwhelmingly dominant Mila share along with the company's close relationship with Siminn, the largest electronic communications company in the country, one must consider it clear that the Mila market share will still be very high during the next 2-3 years. There is every indication that the Mila market share will far exceed the reference limits which in general is considered to indicate significant market power during the period of validity of this analysis.

270. In addition to this there is significant concentration on the market and when examining market share it is also important to have concentration of the market in mind. A common method to measure concentration on a market is the HHI index.[134] The HHI index for market share on the relevant market with respect to revenue in the year 2014 is about 0.65, which indicates very high concentration.

271. According to well-documented case law, a share of over 50% on its own is sufficient for a company to be considered to have a dominant position, except in exceptional cases. There is also a very significant difference between the Mila market share and those of its competitors on this market whether by revenue or by number of connections. The PTA believes that the Mila high market share and high concentration of the market indicate unequivocally that Mila

[132] Margins for confidentiality.
[133] Margins for confidentiality.
[134] Herfindahl-Hirschman Index. The value of the index lies between 0-1. The higher the value the greater the concentration on the market. If the result is less than 0.1 then action is considered unnecessary. If the result is in the range of 0.1-0.18 then there is average concentration and over 0.18 there is considered to be considered significant concentration.

has significant market power on the wholesale market for trunk segments of leased lines.

6.3 Overall size of a company

272. The size of the company for example on the basis of turnover or of some other metric, can be important when assessing SMP. If the company is significantly larger than its main competitors, then this can mean competitive dominance. Dominance can be inherent in better production methods, cheaper procurement, and economic strength, access to capital, distribution and marketing.

273. A company with longer specialised experience on the market than that of its competitors has similar dominance, for example in specialised knowledge in technical matters, knowledge of markets and of the legal environment.

274. Mila is part of the Siminn Group and thus belongs to the largest electronic communications company in this country and has long and extensive experience of electronic communications. Organisational changes in the Group have not brought any changes with respect to the overall size of the company or to its experience on the electronic communications market as the same electronic communications operations are within the Group as before. The company is as before, by far the largest electronic communications company in the country. The total turnover for Electronic Communications Activities of the Siminn Group, that is to say Mila and Siminn, on the Icelandic telecommunications market was ISK [..][135] billion in 2013 which represents approximately [..%][136] of total market turnover.

275. The PTA concludes that the greater size of Mila and the Siminn Group in comparison with competitors strengthens the Mila position on the relevant market.

6.4 Entry barriers

6.4.1 General comments on barriers to entry

276. Barriers to entry were discussed above in Section 5.2. Reference is made to that discussion. In the following Sections the entry barriers that were examined in the market analysis from 2007 are examined and they are as follows: control of infrastructure not easily duplicated, sunk costs, economies of scale and scope, access to capital, access to distribution and sales systems and barriers to growth.

6.4.2 Control of infrastructure that is difficult to duplicate

277. When a company has control over infrastructure that is difficult or expensive for others to duplicate, this can be a significant barrier for competitors. An example of such facilities is the extensive Mila trunk line network.

278. This issue was dealt with in Section 5.2.2. It is stated there that it is clearly difficult to develop a trunk line network in this country. The country is sparsely populated, there are long distances, few inhabitants and few purchasers on the wholesale market. There thus appear to be no general operational grounds for many parallel trunk line networks. There are almost no investments in trunk line networks from the private sector. The Mila trunk line network was

[135] Removed for reasons of confidentiality.
[136] Removed for reasons of confidentiality.

largely developed when all electronic communications infrastructure was owned by the state. New investments have only been made by energy companies and are limited to their operational territories in the energy market. Vodafone is however a private sector company which has developed a trunk line network but it is largely based on the lease of fibre-optic which was developed for the needs of Siminn and the NATO Defence Force. The PTA considers it therefore difficult to duplicate facilities comparable to those controlled by Mila and that this situation deters the entry of new parties to the market.

6.4.3 Sunk costs

279. Section 5.2.3 discussed sunk costs as an entry barrier to the relevant market. The conclusion of that discussion was that companies that wish to enter the market would need to make very significant investments. It is far from certain that the funds invested in the project would be recouped if the operations were ceased, particularly should the operations prove unprofitable.

280. The PTA considers that the sunk costs faced by the companies are a barrier to their entry into the market. Mila bases its services on the other hand on older investments to a large extent. The Mila network covers the whole country and Mila therefore does not need to make new investments for further distribution. This position increases Mila's strength on the market and makes competition more difficult for new parties to the market.

6.4.4 Economies of scale and scope

281. Economy of scale exists in the operations of companies when increased production results in lower total costs per unit. Economy of scope exists where it is less expensive to manufacture two or more goods together rather than each separately. Economies of scale and scope can work both as entry barriers for new parties and as advantages over other competitors.

282. Sections 5.2.4 and 5.2.5 discussed economies of scale and scope on the relevant market. The conclusion of that discussion was that Mila enjoys economies both of scale and scope to a greater extent than other parties on the market. Mila is part of the Siminn Group, which is a Group of the largest electronic communications companies in the country. The Group controls the largest electronic communications networks, has most customers and the largest turnover furthermore has an extremely varied service offer in all fields of electronic communications.

283. Having taken the above into account and the discussion in Sections 5.2.4 and 5.2.5 the PTA considers that economies of scale and scope constitute significant entry barriers to the relevant market and that they are conducive to increasing Mila market power.

6.4.5 Access to capital

284. Access to capital can have a deciding influence on the possibilities for a company on a competitive market. This is particularly the case where 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.

285. 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.

286. Circumstances on financial markets are in many ways special at this point in time. There has been an international financial crisis for quite some time and the financial crisis in this country has been particularly difficult and has impinged on all domestic economic activity. One must consider it certain that access to capital has become more difficult for all companies. Capital for new investments is more difficult than before, which impacts all development. Against this there is the fact that the advantages that some companies had over others with respect to access to capital has diminished during the same period.

287. It is a very expensive measure to develop a network as extensive as that which Mila operates today. The Mila network was built to a large extent during a period of monopoly and state control. It is thus clear that it significantly restricts competition if new companies do not have access to capital for development.

288. An important issue with respect to financing a leased line network is that such finance needs to be long-term. Electronic communications systems take a long time to pay for themselves and given current circumstances there is a lack of patient capital in most places, not only in this country but also widely abroad.

289. For the above reasons it is the opinion of the PTA that access to capital is problematic at the present time and is thus considered to be a barrier to entry for new electronic communications companies to the relevant market.

6.4.6 Developed distribution and sales systems

290. Well-developed distribution and sales 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 sole agreements with the largest and/or most important distribution parties on the market.

291. The PTA considers that in the wholesale market for trunk segments of leased lines, distribution and sales systems are not a deciding factor in the entry of new companies to the market. There are relatively few purchasers on the market which also applies to agreements and sales of services. Purchasers on this market are electronic communications companies which are normally well informed about market circumstances. The PTA considers it very unlikely that new companies would hesitate to enter this market for the sole reason that they did not consider themselves to have sufficiently well-developed distribution and sales systems.

292. Having taken the above into account the PTA considers that access to distribution and sales systems does not create an access barrier to the relevant market.

6.4.7 Barriers to growth

293. This issue of barriers to growth on the market was dealt with in Section 5.2.6. It is not considered likely that there will be much demand for new transit routes and purchasers on the market will in all likelihood remain few. Some increase is however likely in data transfer capacity as the transfer requirement is gradually increasing. New companies cannot rely on new customers entering the market and they must gain customers from incumbent operators on the market.

294. It is the PTA conclusion that growth possibilities in the field of installation and operation

of trunk segments of leased lines are limited and that the lack of growth possibilities is likely to act as a barrier for new companies. This position increases Mila market strength.

6.4.8 Conclusion concerning entry barriers in the relevant market

295. After having scrutinised the issues concerning access barriers that were examined in the prior market analysis from 2007 it is the conclusion of the PTA that little or no change has taken place to the access barriers that characterised the market.

296. Mila's position, characterised by its extensive trunk line network, still creates dominance over other electronic communications companies. Other companies find it extremely difficult to develop a comparable network and experience shows that investments in the trunk line networks are small without the involvement of the public sector.

297. The risk of sunk costs still exists and this could be a major risk as substantial investment is required to enter the market.

298. Mila and the Siminn Group are by far the largest unit on the market and their high turnover and varied service offer leads to economies of scale and scope in excess of others on the market.

299. Access to capital is not easy during these times which makes investments in trunk lines even more difficult.

300. As before, the PTA considers that developed distribution and sales systems are not a deciding access barrier to this market.

301. Barriers to growth still exist on the market and they deter companies who are considering entry into the market.

302. Taking the above issues into consideration and the discussion in Section 5.2 it is the opinion of the PTA that significant access barriers still exist on the market and that they are conducive to increasing Mila market strength and to inhibiting competition on the market.

6.5 Behaviour of parties to the market

6.5.1 Product diversification / bundling

303. Product diversification refers to how the consumer defines products and distinguishes between similar products. Clear product diversification in a company’s offer can create trust in customers and can equally complicate entry for new parties into the market, contrary to what happens when the product offer is more homogenous. Strong brand names have a comparable effect.

304. 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 strength on the latter market is assessed.

305. One must keep in mind that the market being examined here is a wholesale market with standardised service. The purchasers are electronic communications companies which know precisely which service they require. It is not likely that purchasers on the market will choose a seller by his brand or by the uniqueness of service which is on offer with a specific company.

306. Bundling of service does not have as much impact on the wholesale market as on the retail market. Purchasers on this market often offer varied service and only need to purchase specific procurements in wholesale. It could however have some impact that Mila is often in a better position to offer hosting or another service from its offer in parallel to leased line service.

307. On the whole the PTA considers that product diversification and bundling do not have a major impact on market strength on the relevant market.

6.5.2 Vertical integration

308. In Paragraph 2 of Article 18 of the Electronic Communications Act no. 81/2003 the following is stated:
Where an undertaking either individually or jointly with others holds significant market power on a certain market it may also be deemed to have significant market power on a related market where the links between the two markets are such as to allow the market power held in one market to be used to strengthen market power on the other.

309. The above specified transfer of market power can variously be vertical, for example between a wholesale market and retail market, or horizontal, for example between two markets. The transfer can either be in the form where products from separate markets are sold together or where products from one market are used to subsidise products from the other. Transfer of market power can also be in the form of refusing to allow a company access to facilities or of limiting a competitor's sales or profits

310. If the operations of a service provider reach more than one level in the value chain, that service provider is said to be vertically integrated. It is most common that a vertically integrated undertaking operates both upstream, at the base sales level – and downstream where it provides services to end users. A vertically integrated service provider can deploy its upstream strength in order to keep competitors out of the market downstream; for example, through pricing at the upstream level or by not offering its downstream competitors' products at the upstream (wholesale) level. In this way, a vertically integrated undertaking that has a strong position in the wholesale market can enhance its position in the downstream (retail) market.

311. 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 the wholesale and retail functions. 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.

312. Despite the fact that Mila only handles wholesale services and Siminn the retail services this does not alter the fact that these two companies together form a vertically integrated company group. Siminn is Mila's largest customer and does virtually no business with other companies on the relevant wholesale market. It is clear that as both companies are part of the Siminn Group, ownership, management and financial connections between the companies are undisputed.

313. The PTA considers that vertical integration on this market is likely to make competition difficult for new companies to the market, despite a certain separation of wholesale and retail between Mila and Siminn, as the two companies are part of the Siminn Group. The agreement between Skipti and the CA from March 2013 should however mitigate the negative impact that such vertical integration could have, should the Settlement be adhered to. Those changes that are now planned, such that Siminn will become the parent company of Mila, could however constitute regression with respect to this mitigation.

6.6 Countervailing buying power

314. 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.

315. Purchasers on the wholesale market in question for trunk segments of leased lines are electronic communications companies. These are few purchasers who purchase sufficient quantity to create countervailing buying power against sellers. In addition to this, purchasers on the relevant market have a very limited choice of service providers to counteract the seller's market power. The cost of switching to another seller, were this option to exist, is also substantial and time-consuming as the purchaser has developed a system with interconnection points and has configured them to operate with the relevant seller's technical interfaces.

316. The PTA considers that the option of investing in one's own trunk lines does not create countervailing buying power against sellers as this would require a major and risky investment. Mila now controls trunk lines at a national level that have taken decades to develop.

317. Having taken the above into consideration the PTA concludes that purchasers face limited choice of service provider and that individual external purchasers on the market are not adequate to influence sellers’ market power. In addition to this the PTA considers there to be little likelihood that purchasers would install their own trunk lines at a national level in the near future to meet their electronic communications needs on the market. The PTA considers that countervailing buying power is at a low level on the relevant market and thus does not have a significant impact on Mila market strength.

6.7 Pressure from substitute products

318. The presence of technological development and innovation make it much more difficult for companies to maintain or apply their market strength than would otherwise be the case. Technological development and innovation which create substitutability for the traditional product offer on a market can support increased competition by weakening the position of incumbent companies against competition from new operators or services.

319. It is possible to provide leased line service with a variety of technological solutions and there is continuous development in this field. Methods have been found to increase transit capacity of lines and to increase the number of parallel connections on the same line with the use of various kinds of endpoint devices. This has however limited significance for competition as only a few companies own electronic communications lines. It is not possible for many

wholesalers to use the same thread. No solution has yet been found to lay cables in an inexpensive manner and wireless connections cannot replace cables except in exceptional cases. For this reason there is little likelihood that technological innovation will bring competitive pressure on the market in the coming years.

320. With the above in mind the PTA considers that the impact of substitute products on the relevant market will not support active competition on the market in question in the near future.

6.8 Assessment of SMP on the relevant market and the designation of a company with SMP

321. Assessment of Significant Market Power (SMP) is based on ESA Guidelines and on various other criteria. The PTA takes current market conditions into account when making its assessment. Developments over recent years are also taken into account and the assessment is forward-looking.

322. In Paragraph 1 of Article 18 of the Electronic Communications Act no. 81/20030, the following is stated: *An undertaking shall be deemed to have SMP if it, either individually or jointly with others, holds a position of economic strength on a certain market which enables it to prevent effective competition and to operate to a substantial extent without concern for competitors, customers and consumers."*

323. This is an important point of departure in the market analysis and PTA wishes to emphasise that SMP is the appropriate measure, not abuse of a dominant position. Therefore, the core of the market analysis is not whether an undertaking has misused its dominant market position. This does not mean, however, that an undertaking's behaviour in the market does not make any difference in the assessment of SMP. Even though the formal aspects of the market are most important, conduct that enhances a dominant position or maintains the competitive advantage enjoyed by a dominant undertaking can strengthen that undertaking still further.

324. As the market analysis shows there have not been great changes on the market since the previous analysis was made of the market in 2007. The main changes are that Vodafone acquired the use of a NATO fibre-optic thread and there is the development by Tengir in Akureyri and in the Eyjafjörður region. Vodafone uses its trunk lines are almost exclusively to serve its own operations which means that the company's share in external wholesale is insignificant.

325. Mila still keeps its high market share and now has approximately [75-80%][137] market share by revenue. This share has only fallen by about [..][138] percentage points over 9 years. There is no indication that this development is accelerating and the PTA considers it proper to assume that market share will still be well in excess of reference levels for significant market power during the period of validity of this analysis.

326. In the opinion of the PTA there has been almost no change to the access barriers that have characterised the market. Mila's position, characterised by its extensive trunk line network, still creates dominance over other electronic communications companies. Other companies find it extremely difficult to develop a comparable network and experience shows that investments

[137] Margins for confidentiality.
[138] Omitted for confidentiality

in the trunk line networks are small without the involvement of the public sector. Sunk costs, economy of scale and barriers to growth also create access barriers.

327. The PTA considers that vertical integration of the Siminn Group significantly strengthens the position of Mila on the relevant markets. As purchasers of wholesale services on the market are very small in comparison with Siminn and Mila, countervailing buying power does not exist, and there is nothing that indicates that competitors, customers or consumers can influence Mila's tariffs.

328. In addition to this the PTA concluded that the possibility of some kind of innovation or potential competition was hardly realistic as the market was largely saturated and as there was a great discrepancy between the position held by Mila and that of other companies.

329. The PTA considers that the reduction of Mila market share, the entry of new parties to the market and pressure from other types of services are not yet at the level that can impact on Mila's significant market power. Mila market share was [75-80%][139] in 2014. The company's high market share indicates that it has significant market power. According to the European Court case law, market share over 50% is on its own an indication of significant market power except in the case of unusual mitigating circumstances. The PTA considers in the light of Mila's high market share and taking into account the previously mentioned factors that are such that they would inhibit competition, that is, above all reasonable doubt that Mila enjoys significant market power on the relevant market. The PTA considers there to be no indications that changes in the criteria will be such in the next two to three years, that there will be a significant reduction in the Mila market power.

330. With the above in mind the PTA intends to designate Mila as having significant market power on the wholesale market for trunk segments of leased lines (previously Market 14).

[139] Margins for confidentiality.

7.0 Imposition of regulatory obligations

7.1 In general on obligations

331. According to Paragraph 2 of Article 17 of the Electronic Communications Act, market analysis shall be the basis for decisions on whether the PTA shall impose, maintain, amend or withdrawal obligations on companies with significant market power. If a market analysis reveals that there is no effective competition in the relevant market and that one or more electronic communications undertakings in that market possess SMP, the PTA is authorised to impose one or more obligations on the company that is designated as having SMP, in accordance with Article 18 of the Electronic Communications Act. If the PTA has previously imposed specific obligations on operators pursuant to the previous Electronic Communications Act, these shall be reviewed and either maintained, amended, or withdrawn in accordance with the results of the market analysis.

332. Article 27 of the Electronic Communications Act states that when an electronic communications undertaking is designated with SMP, the PTA may impose on it obligations concerning transparency, non-discrimination, accounting separation, open access to specific network facilities, price control and cost accounting, as necessary for the purpose of promoting effective competition[140]. These obligations are described more fully in Articles 28 – 32 of the Electronic Communications Act.

333. When selecting obligations to be imposed in order to solve specific competition problems, it is necessary to use several fundamental principles as guidelines.[141] All obligations imposed shall take into account the nature of the specified competition problem and shall be designed to solve it. They shall be transparent, justifiable, reasoned, and in line with the objectives they are designed to achieve – that is, to promote competition – as well as contributing to the development of the internal market and safeguarding users' interests. Obligations must be proportionate and may not impose heavier burdens on operators than is deemed necessary.

334. In a report from the European Regulators Group (ERG)[142] on ex-ante obligations emphasis is placed on developing competition in the construction of electronic infrastructure and networks where this is considered desirable. In such instances the imposed obligations should support such development. When infrastructure-based competition is not considered desirable due to significant and persistent 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.

335. For the long term, service-based competition that has its foundation in regulated 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

[140] See also Articles 9 - 14 of the Access Directive.
[141] See Article 8 of the Framework Directive.
[142] Now BEREC.

electronic communications networks step by step.

336. In selecting the obligations that are best designed to promote competition in a given market, it is often useful to consider the position that would exist if obligations were not imposed on undertakings in the relevant market and whether it would be sufficient to use competition legislation alone to guarantee effective competition.

7.2 Competition problems

7.2.1 In general on problems in the field of competition

337. Obligations are imposed on companies with SMP with the aim of combating real and/or potential problems in the field of competition in the markets in question. Problems in the field of competition refers to any kind of behaviour by a company with significant market power, which is intended or leads to competitors being forced out of markets, which prevents potential competitors from entering the market or damages consumers' interests. When obligations are applied pursuant to the Electronic Communications Act, the reason for doing this is not in fact that a party is misusing market dominance. It is sufficient that competition problems could possibly arise under the given circumstances.

7.2.2 Problems with respect to competition on the wholesale market for trunk segments of leased lines.

338. As was stated in Section 6, the conclusions of the market analysis indicate that competition on the wholesale market for trunk segments of leased lines is not sufficiently active as Mila still has [75-80%][143] market share. In those areas where competition does exist there is oligopoly but in large areas Mila has a monopoly position.

339. The market analysis shows that the relevant market is characterised by Mila having strong dominance which can be attributed to the fact that Mila was previously a sole licence holder which long enjoyed a monopoly on the electronic communications market in this country, up to the year 1998.

340. Development of other electronic communications company has been slow and local The market share and distribution of such companies has not succeeded in threatening Mila which has operations across the whole country and can offer trunk lines on all routes while other companies can only offer service in limited areas. In addition to this the Mila service offer is much broader than that of other companies on this market.

341. Barriers on the relevant market are still substantial and there is a lack of possible competition. The market is characterised by vertical and horizontal integration of the Siminn Group which can offer virtually all products to all customers from wholesale to retail level.

342. The PTA believes that because of the long history and scope of the Mila networks, where the company is also the only one on the market, Mila has a competitive advantage in this respect. Mila also controls infrastructure that other companies cannot duplicate without significant funds and time which means that it is not realistic for such parties to develop such infrastructure in addition to the local networks that have been laid, at least not in the near future.

[143] Margins for confidentiality.

343. The wholesale market for trunk segments of leased lines also shows evidence that a certain stagnation and decline exists in specific parts of the market, such as in Frame Relay and ATM standards. This has the effect that growth possibilities are on the decline on the relevant market.

344. The market has not undergone fundamental changes since the previous analysis. Despite the fact that there has been certain technological development and that there are more service providers than before, Mila still has an overwhelmingly dominant market share of approximately [75-80%][144]. Companies that wish to provide electronic communications services are still dependent on access to Mila network systems if they wish to be able to provide comprehensive service throughout the whole country. Development of the market has thus not given reason to assume otherwise than that the need to maintain obligations on the relevant market is almost as great as it was after the previous analysis.

345. With the circumstances pertaining on the market today, where one company has an overwhelmingly dominant position and where countervailing buying power is very small, there is a risk that the dominant company will leverage its position to demand abnormally high fees for its service were the obligation for price control not in place. Such pricing would be detrimental to competition on related markets and would result in the end in higher prices to end users.

346. A company that is vertically integrated like the Siminn Group can have the tendency to discriminate between its customers in such a way that its own departments and related companies enjoy better terms than competitors. There can also be a tendency to have too small a difference between wholesale and retail prices and thus make competition with the retail arm of a dominant company difficult.

347. Mila and previously Siminn have in various instances shown unwillingness to offer those products in wholesale that competitors have needed. Before the obligations pursuant to the market analysis from 2007 came into force, Siminn was unwilling to offer dark fibre, DWDM and IP/MPLS[145]. There have also been instances in recent years where Mila has denied access. The PTA Decision 34/2010 dealt with an instance where Mila denied Vodafone access to facilities necessary for the company to be able to utilise the NATO fibre-optic thread that Vodafone had leased. The PTA Decision 28/2011 decided on the dispute where Mila among other things denied access to black fibre on specific routes.

348. In the opinion of the PTA the circumstances on the market are still clearly such that Mila would be in a position to hinder the Group's competitors by being able to deny access or to impose unfair conditions, where there are no regulatory obligations that prescribe a fixed framework for access to Mila trunk lines.

349. As was stated in Section 4 on the definition of geographical markets here above, the BEREC report on geographical markets 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 segmenting a specific service market into more than one geographical market. As is stated in the detailed discussion in the Section

[144] Margins for confidentiality.
[145] See Appendix A, Analysis of the retail market for minimum set of leased lines (Market 7), on the wholesale market for terminating segments of leased lines (Market 13) and on the wholesale market for trunk line segments of leased lines (Market 14), 14 September 2007, pages 119 and 128.

in question, the PTA comes to the conclusion that there is no reason to segment more than one geographical market in the relevant service market in this country. Though there are less stringent requirements to allow the imposition of varying obligations, the PTA considers that competitive conditions are not so heterogeneous between areas, whether one considers the country as a whole or the Capital City Area or the Fibre Optic Ring that they would justify such segmentation. The Mila market share is much greater than the 40-50% market share which precedents from Europe show that the incumbent operator needs to have dropped to, and in addition to this there is the fact that trunk line networks in this country there are too few to deem that effective competition can be considered to exist. For this reason the PTA considers that it is not an option to elaborate obligations in a varying manner by region for the time being, regardless of what may transpire at a later date.

7.3 Obligations in force

7.3.1 Obligations imposed in the prior analysis

350. With the Decision from 14 September 2007 on the imposition of obligations for trunk segments of leased lines, the PTA imposed the following obligations on Mila and Siminn. Obligations on Siminn have no significance at this point in time as Siminn no longer provides wholesale access to trunk lines subsequent to the Agreement between the CA and the Group from 2013. Obligations on Mila are however still active.

Obligation to provide access to leased line network

351. The obligation was imposed on Siminn and Mila to accede to normal and fair requests for access to trunk line segments of leased lines and to services at wholesale level. Siminn and Mila ehf. were to accommodate normal and fair requests for sharing or co-location, access to resale, access to technical interfaces, communication protocols and other technology, and the interconnection of networks. Agreements on access and interconnection with the Companies' leased line network were to be completed within a reasonable timescale and without unnecessary delays. Access that had been provided by Siminn to others, whether through supply of leased lines or with access to facilities, could not be withdrawn without the agreement of the PTA. Siminn and Mila were to ensure that the service that had been on offer would remain on offer for a reasonable period of time and it was only authorised to withdraw service after consultation with the relevant users and with the endorsement of the PTA. If a service were discontinued then the planned changes should be notified to the electronic communications companies involved as soon as possible and no later than six months prior to the planned changes.

Obligation for non-discrimination

352. The application for non-discrimination was imposed on Siminn and Mila, both with respect to price and other conditions. The companies were to provide all purchasers of leased lines, including each other and their own departments, with analogous terms of service, price and quality of supply of fast data handling and communications protocols. The companies were to arrange their operations in such a manner that the treatment of information is in accordance with Article 26 of the Electronic Communications Act. The companies where unauthorised to deliver information to each other on transactions with other companies on planned purchases and in addition to this they were unauthorised to provide others with such information, including other departments of the companies, their subsidiaries or partners.

Obligation for transparency

353. An obligation on transparency was furthermore imposed. Siminn and Mila were to prepare and publish a reference offer for interconnection of leased lines and information on access to trunk segments of leased lines in wholesale, among other things on tariff, technical characteristics and conditions for delivery. The companies were also to publish bookkeeping information on performance in trunk segments of leased lines in cooperation with the PTA.

Obligation for separation of accountancy

354. The obligation for separation of accountancy was also imposed on the companies. Such separation should constitute as a minimum that on the one hand wholesale and on the other hand retail of leased lines should have their accounts separated from other operations. Siminn hf. and Mila wholesale prices, prices between companies and prices within the companies, should be transparent among other things to prevent unjustified subsidies. The companies were obliged to provide the PTA on an annual basis with a breakdown of the operational accounts and balance sheet for wholesale and retail along with a statement of the division of indirect costs that were not possible to allocate through comparison with other cost items. In addition to this the companies were to provide the PTA with an annual opinion from an autonomous party on the implementation of separation of accountancy. The opinion was to be published on the companies' websites as soon as possible after the completion of the financial year. The above specified statements should reach the Administration no later than 1 April each year for the preceding year. Should the companies' accounting separation prove unsatisfactory, the PTA reserved the right to submit demands at a later date for further separation of accountancy.

355. When implementing separation of accountancy, Siminn and Mila were to make their bookkeeping entries in such a manner that made it possible to divide all revenue and costs between operational units which could be linked to varying services. Separation in accountancy is based on the main principle of a causal relationship, that is to say that costs and revenue should be allocated to the service or products that created the cost revenue. Cost of operating networks and/or service should be divided between operational units with a task-based cost analysis which is based on the methodology of analysing costs through by activities conducted in the operational units in question. This called for appropriate and precise methodologies in the division of costs. The part of the costs which was not possible to divide on the basis of direct or undirected division of costs, that is to say costs that could not be allocated with comparison with other cost items, should be specifically tagged in the companies' bookkeeping. Regulation no. 960/2001 on accounting and financial separation in electronic communication prescribes in more detail the implementation of separation in accountancy Separation of accountancy was to be organised with respect to revenue, costs, assets and liabilities for varying services of leased lines in wholesale and retail.

Obligation for price control

356. The PTA imposed the obligation on SM for price control of trunk segments of leased lines. SM were to keep cost accounting and to make a cost model for the calculation of prices for leased lines in wholesale, according to historical costs. The construction of the cost model was to be completed within one year from the publication of the decision on the relevant market. In order for SM to be able to demonstrate that the tariff for a specific kind of service or product is cost-oriented, it would be necessary to introduce cost accounting that captured, identified, assessed and allocated the relevant costs to the services or products in accordance with recognised rules, that is to say a causal relationship. Siminn hf. and Mila ehf. were to submit to the PTA a description of the cost accounting bookkeeping for trunk segments of leased lines and to publish the main cost categories and the rules used to allocate costs. Siminn hf. and Mila

were to deliver a report to the PTA from an independent auditor showing correspondence between the companies' description to the PTA of how costs are split and the implementation in its cost bookkeeping system. All changes to the Siminn hf. and Mila tariffs were to be notified to the PTA and they would not come into force without prior endorsement by the PTA.

7.3.2 The impact of existing obligations

357. Existing obligations have by the nature of things had a direct impact on access for electronic communications companies to Mila systems and on the prices offered. With the Decision of the PTA from 2007 the mandatory service that the Siminn Group was to offer to competitors was extended. The PTA has practised price control on the Group's tariff on the relevant market and it must be considered certain that prices would have been higher during the period had such surveillance not been in place.[146]

358. Obligations for access to leased lines support the entry of new companies to the electronic communications market. It is however not yet possible to identify a direct connection between access obligations and the development of new leased line networks by competitors.

359. As has been previously stated Mila is by far the largest company on the wholesale market for trunk segments of leased lines. New network operators have started operations but they have a long way to go to achieve Mila's scale, distribution and service offer as Mila still has an overwhelmingly dominant market share whether by revenue or number of connections. GR has not provided clear plans for further expansion after 2014 and other companies are much smaller and localised. In addition to this, new technology (such as for example IP-MPLS and MPLS-TP) has not changed the status of the relationship between companies on the market even though it has had an impact on the overall status of leased lines.

7.3.3 The necessity of maintaining obligations

360. As has been previously stated, Mila is by far the largest company on the wholesale market for trunk segments of leased lines. Distribution of trunk line networks of other companies on the market has not increased significantly since the last analysis, with the exception of the access leased by Vodafone to a thread in the NATO circular fibre-optic cable which has mostly been used for internal Vodafone operations. Now only 5 years remain of the term of the lease and there is uncertainty about what will happen at the end of that period. It is unclear what the impact on Vodafone would be were ESA to conclude that there had been unlawful state support. And in any event the Vodafone position is not the same as that of a network operator which fully owns its own system and which can make long-term plans. Mila still has an overwhelmingly dominant market share whether by revenue or by number of connections. Despite the arrival of new companies in recent years there is no prospect of them seriously encroaching on Mila's advantage during the lifetime of the analysis. For this reason one must consider that during the period of validity of this analysis Mila will maintain its position of having by far the most distributed and largest network system in the country and will have the greatest service offer through its trunk lines. As has been previously stated, Mila is among other things, developing a wide reaching MPLS-TP Ethernet system at many locations in the country.

361. The development in recent years does not give reason to conclude that the market has tended towards free competition to the extent that the conditions exist to withdraw obligations. The same can be said about prospects for the near future. As one can assume that Mila

[146] See among other things the PTA Decision 14/2011 regarding the Mila cost analysis of tariff for leased lines.

significant market power will remain during the coming year's one can also assume that the competition problems described in Section 7.2 will continue to exist. This means there will continue to be a need for intervention by the authorities for the purpose of combating negative impact caused by lack of competition in the relevant market.

362. In Section 5.4.2 there was discussion on the possible impact of the Competition Authority Decision no. 6/2013 on this market analysis. It was stated there that the duties prescribed in the Decision do not particularly cover the leased line markets and that they do not prescribe on the offer of specific leased line services or on the pricing of such services. The conclusion of the PTA is that the Competition Surveillance Authority Decision does not lessen the need for special obligations on the market for trunk segments of leased lines. Experience has shown that there is a need for frequent and substantial intervention in the market and that predictability needs to be created with respect to access for competitors of the Siminn Group to the Mila networks. The Decision of the Competition Surveillance Authority is general in nature and as stated above does not specifically address issues on the relevant market. In addition to this, insufficient experience has yet been gained on the implementation of the Settlement and there are among other things amendments to the agreement currently being processed. Then there is the fact that it is clear that the Siminn Group has not fully complied in all respects with the Settlement in question. The committee which monitors the agreement has made decisions which confirm breaches of the agreement, such as for example matters that relate to access to Mila wholesale switches. For this reason the PTA considers it necessary to maintain obligations on the market pursuant to the Electronic Communications Act.

7.4 Proposals for obligations

363. On the basis of the market analysis the PTA has come to the planned conclusion that it is appropriate to maintain obligations on the wholesale market for trunk segments of leased lines. The obligations imposed on Mila in 2007, and that the PTA intends to maintain, have not been altered to any significant degree as circumstances on the market have changed little. Mila has however been developing a new MPLS-TP system which among other things replaces the Siminn IP-MPLS system. It is proposed that the obligations cover this new system. Several changes have however been made to the description of the obligations in the light of experience gathered from their implementation since the last analysis and in addition to this an obligation for cost accounting has been added which in the previous analysis was mostly included in the obligation for price control. In addition to this the obligation for non-discrimination is more precisely defined and it is proposed that new obligations with respect to the making of service level agreements, the issue of quality assurance and the publication of key performance indicators be imposed on Mila. In this Section the content of these obligations will be presented in more detail.

364. As Siminn no longer operates on the wholesale market for leased lines it is the PTA conclusion that there is no reason to maintain obligations on that company. The PTA however emphasises that the Siminn Group is considered to be one economic entity in the understanding of Competition Law and if the sale of leased lines is moved to another part of the Group then the obligation will be transferred to the company in question.

7.4.1 Obligation to provide access

365. According to Paragraph 1 of Article 28, Paragraph 1 of the Electronic Communications Act the PTA may instruct undertakings with significant market power to meet normal and reasonable requests for open access to public electronic communications networks, network

elements and associated facilities under certain conditions prescribed by the Administration. Paragraph 2, Item g of the same Article states that it is permissible to require that electronic communications undertakings interconnect networks or network elements.

366. When imposing an obligation to grant access, it is necessary to consider whether the access in question encourages investments in the network and promotes innovation, efficiency and sustainable competition. In Paragraph 3 of Article 28 of the Electronic Communications Act it is stated that when making a decision to impose obligations pursuant to Paragraph 1, the PTA shall take into account whether it is:

a. technically and economically realistic to use or set up one's own facilities in competition, taking into account market development and the nature and type of interconnections and access in question;
b. feasible to provide the access proposed;
c. justifiable, in view of the original investment by the owner of the facility and the risk taken in making the investment;
d. to the advantage of competition in the longer term;
e. inappropriate, in view of intellectual property rights;
f. conducive to increasing the supply of services.

367. In Article 33 of the Electronic Communications Act it states that where effective competition does not exist on the market for leased lines or specific types of leased lines, the PTA shall ensure that at least one electronic communications undertaking with significant market power offer leased lines, of the type which the PTA regards are needed on the electronic communications market, on a wholesale or retail basis.

368. With the authority in Articles 28 and 33 of the Electronic Communications Act the PTA plans to impose the obligation on Mila to accommodate normal and fair requests for access for trunk segments of leased lines and related service at wholesale level.

369. The PTA 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 with Siminn, considering market developments and the nature of the access on which a proposal is provided here below, and whether this is justifiable in the light of the initial investment. The PTA considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in service offers.

370. Given the strong Mila market position it is difficult for new parties to enter the leased line market. The development of a trunk line network requires major investment costs and it is the opinion of the PTA that it would be difficult to embark on the development and operation of a new trunk line network with national coverage, given current circumstances on the Icelandic market.

371. Applications sent electronically for access to local loops and related facilities, for example buildings, shall be processed by Mila as quickly as possible. Mila 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

that of companies within the Siminn Group to the Mila/Siminn service systems for the purpose of tracking their applications and also for information on maintenance and repair of leased lines and on invoicing.

372. Access that Mila has already provided for another party, whether through supply of leased lines or with access to facilities, may not be withdrawn without the agreement of the PTA. Mila shall ensure that the service that is on offer will remain on offer for a reasonable period of time and it is only authorised to withdraw service after consultation with the relevant users and with the endorsement of the PTA. If a service is discontinued then the planned changes shall be notified to the electronic communications companies involved as soon as possible and no later than six months prior to the planned changes.

373. In Paragraph 2 of Article 28 of the Electronic Communications Act, a number of types of access are listed which can be demanded from electronic communications companies with significant market power. These types of access are not exhaustive and new types can appear, for example as a result of technical development or because of the advent of new services. With this in mind the PTA does not consider it appropriate to limit access obligations to one or a number of specific forms of access. In the opinion of the PTA this could diminish the impact of the obligation. The PTA considers it normal that Mila should provide to other electronic communication companies, all types of wholesale access to trunk segments of leased lines that it provides to its own units or to other parties within the Siminn Group. All forms of wholesale access that it is fair and normal to provide and that can strengthen competition on the market for trunk segments of leased lines, are covered by the access obligation imposed on Mila on the market in question. In order to provide the Mila and other parties with a general reference then a more detailed description will be given of the most common access forms here below. It should be noted that this is not an exhaustive listing.

Service provider with resale

374. According to Item b of Paragraph 2 of Article 28 of the Electronic Communications Act it can be required that an electronic communications company with significant market power should offer a specific service in wholesale which a third party resells.

375. This type of access affords service providers the opportunity of resale of leased lines. In the case of pure resale under an independent trademark, the service provider does not have any independent system infrastructure, but purchases almost all service at wholesale level. The Mila offer to service parties shall be based on service analogous to that which Mila offers its own units or other parties within the Siminn Group.

376. The possibility of purchasing a leased line service in wholesale for resale is a necessary capability to strengthen service and price competition. It gives the service providers the opportunity to purchase lines with wide bandwidth which they can split to provide service to many parties without developing their own network. In the opinion of the PTA the duty to provide access for resale is fair and provides Mila with the opportunity to use surplus capacity.

Open access to technical interfaces, communications protocols and other technology

377. With reference to Item c of Paragraph 2 of Article 28 of the Electronic Communications Act, one may require that an electronic communications undertaking with significant market power provide open access to technical interfaces, protocols or other technologies which are necessary to ensure interoperability of services (connections with other networks).

378. In the opinion of the PTA it is important to impose the obligation on Mila to offer open access to technical interfaces, protocols and other technologies necessary to ensure interoperability of services between the Mila leased line system and other electronic communications networks. In this way smaller networks can connect in an adequate manner to the Mila network.

379. With respect to customer premises equipment, the PTA considers it appropriate that Mila cannot set conditions for connecting endpoint devices to leased lines other than the conditions that apply to its connection with a termination point of the appropriate leased line pursuant to the R&TTE EU Directive no. 99/5/EC, see Regulation no. 90/2007 on wireless equipment and telecommunication equipment and mutual recognition on its conformity. If customer premises equipment does not fulfil this condition then Mila is authorised to disconnect the leased line until the customer premises equipment has been disconnected.

380. The PTA considers it normal that Mila should only be authorised to limit access to and use of leased lines on the basis of fundamental demands that relate to operational security of electronic communications networks in emergencies, to the integrity of its systems and in proven instances of the operational capability of service systems and protection of data.

381. With reference to Item c of Paragraph 2 of the same Article, the PTA plans to demand that Mila authorise other electronic communications companies open access to technical interfaces, protocols and other key technologies which are necessary to ensure interoperability of services (connections with other networks). Mila shall provide access to support systems and information necessary for the leased lines to be utilised for the purpose for which they were leased. Such access can be in the form of operational support, database to gather information prior to orders being made, delivery, orders, maintenance, handling of faults and invoicing.

Co-location and sharing

382. According to Item d Paragraph 2 of Article 28 of the Electronic Communications Act it can be required that electronic communications companies with SMP offer co-location or joint utilisation including joint utilisation of cable ducts and buildings or masts.

383. In addition to this there is a general provision on the obligation to make agreements on co-location or other kinds of joint utilisation of facilities or of land in Article 25 of the Electronic Communications Act.

384. It can be very costly for new network operators on the leased line market to develop the extensive 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 cost of excavation and laying of ducts (Civil Works) is often shared. It is also important that parties can gain access to Mila pipes and ducts that are not fully utilised, for the installation of new connections (copper or fibre-optic).

385. Should the situation arise where a request is made, by related or unrelated parties, for authorisation to install a new cable in a Mila pipe or duct that is not fully utilised then Mila shall meet this request, should it be considered fair and normal. The pricing of access shall be cost related and based on Mila historical costs where the cost is allocated to the relevant service.

386. Siminn and later Mila have provided facilities, for example in buildings, on the basis of Article 25 of the Electronic Communications Act. Despite this the PTA considers it necessary

to impose this obligation on Mila on the basis of Paragraph 2 of Article 28 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 available space in Mila buildings and such a definition can also include a request that requires enlargement or rebuilding of the premises, all according to circumstances in each instance.

387. Mila shall provide a list of planned excavation and duct activities (Civil Works) with six months' notice. Other electronic communications companies shall be offered to participate in the projects with equal division of costs between parties to the projects.

388. The PTA believes that the duty to offer joint utilisation or co-location is reasonable and should not create significant financial burdens for Mila but rather provides the company with the opportunity to use excess capacity and in addition to this the payments received for such access provide Mila with the opportunity to receive partial repayment of its investment. Where the duty for joint utilisation or co-location requires changes or extensions then Mila shall accede to normal and reasonable requests in this connection on the basis of circumstances in each instance. Mila shall thus accede to all normal and fair requests for co-location of the appropriate equipment related to lease line service.

389. The PTA plans to maintain the obligation on Mila to offer joint utilisation or co-location for any kind of infrastructure controlled by the company in connection with trunk segments of leased lines. This could for example relate to access to buildings, cable channels, ducts or pipes. The obligation covers normal and fair requests that do not entail a significantly increased financial burden on Mila. Should agreement not be reached between the parties on access to joint utilisation or co-location the PTA can decide a cost related price and reasonable conditions for access.

Interconnection of networks or network infrastructure, access to other vital infrastructure and technical migration

390. According to Item g of Paragraph 2 of Article 28 of the Electronic Communications Act it can be required that an electronic communications company with SMP interconnect networks or network infrastructure. The PTA considers it essential that it be possible to connect varying leased line networks of electronic communications companies. The obligation to offer interconnection is imposed on Mila with respect to those leased line networks controlled by Mila. The obligation covers interconnection of dark fibre and communications protocols such as MPLS-TP, Ethernet and SDH/PDH.

391. According to Item I of Paragraph 2 of Article 28 of the Electronic Communications Act it can be required that an electronic communications company with SMP provide access to other essential facilities. The PTA plans to impose the obligation on Mila to grant access to those who request access to all critical facilities that are necessary in connection with access to trunk segments of leased lines.

392. In addition to this the PTA plans to impose the obligation on Mila that the company notifies parties to the market with at least 5 years notice on all changes to system design which are likely to alter those parties' competitiveness on the market. The above provision refers for example to the decommissioning of systems and migration to next generation networks. Deviation may be made from the above period of notice on receipt of advance endorsement by the PTA and agreement between Mila and the relevant parties that use the service that is to be decommissioned.

393. Should Mila make changes to its leased line 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 constitute an entry barrier that prevents the migration from taking place.
- An integrated process for transferring 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 request.
- There should be a service level agreement and a list of key performance indicators to ensure the efficiency of the migration procedure, unless there are indications that such is unnecessary or is not cost-effective.

Summary

394. With the authority in Articles 28 and 33 of the Electronic Communications Act the PTA plans to impose the obligation on Mila to accommodate normal and fair requests for access for trunk segments of leased lines and related service at wholesale level. Mila shall among other things accommodate normal and fair requests for access for resale, joint utilisation or co-location, open access and technical interfaces, communications protocols and other technology that assures interactive service and interconnection of networks, access to support systems and appropriate information and in addition to this Mila shall announce all technical migration with a specific period of notice. More specifically, Mila shall publish a list of planned excavation and duct activities (Civil Works) with six months' notice. Mila shall notify parties to the market about all changes to system design that are likely to alter competitiveness of companies on the market, with at least 5 years notice, for example on decommissioning of systems or services. Agreements on access to and interconnection with the Mila leased line network shall be completed within a reasonable timescale and without unnecessary delay. Denial of access shall be justified in an adequate manner. Access that Mila has already provided for another party, whether through supply of leased lines or with access to facilities, may not be withdrawn without the agreement of the PTA. Mila shall ensure that the service that is on offer will remain on offer for a reasonable period of time and it is only authorised to withdraw service after consultation with the relevant users and with the endorsement of the PTA. If a service is discontinued then the planned changes shall be notified to the electronic communications companies involved as soon as possible and no later than six months prior to the planned changes.

7.4.2 Obligation for non-discrimination

395. According to Article 30 of the Electronic Communications Act, the PTA can impose obligations on electronic communications companies designated with SMP to practise non-discrimination when agreeing to interconnection or access. Such obligations should particularly ensure that electronic communications companies make the same conditions to other companies that provide electronic communications services for the same kind of transactions and should provide service and information with the same conditions and the same quality as it provides to its own service departments, sister companies, subsidiaries or partners.

396. The provision on non-discrimination in Article 30 of the Electronic Communications Act is in two parts. On the one hand the PTA can impose obligations on a company with SMP for non-discrimination when agreeing to interconnection and access, that is to say practise non-discrimination between unrelated electronic communications companies. On the other hand the obligations shall ensure that the company make the same conditions to unrelated electronic communications companies in analogous transactions as it makes to its own service units or other related parties.

397. In order for this to be successful, the obligation to grant access must be imposed together with an obligation for non-discrimination. The non-discrimination obligation is intended to prevent a vertically integrated undertaking with SMP from engaging in practices that have a negative impact on competition. It is intended to prevent such an undertaking 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 conditions related to price are basic issues when striving to strengthen competition. The obligation for non-discrimination does not mean that all companies are subject to exactly the same conditions but rather that all variance is based on objective criteria.

398. Significant market power on the market for trunk segments of leased lines can lead to a company discriminating against parties that require the service, should the obligation for non-discrimination not be imposed. A company with significant market power could have the incentive to sell to unrelated parties at a higher price than to its own departments or to other related parties. In order for the non-discrimination obligation in pricing to have the desired effect, it is often necessary to impose an obligation to practise accounting separation as well.

399. Even though companies have been assured access to trunk segments of leased lines at the same price, the access provider can try to discriminate in other manners and in this way increase costs for competitors in order to cause them problems and even push them out of the market. Such practices could for example be in the form of varying quality of service, differing service offers between related unrelated parties, varying processing of applications, inadequate information to unrelated parties unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

400. The PTA believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price, transmission media protocols, access conditions, etc. As an example of varying quality one could mention variations between the Siminn Group service departments and other electronic communications companies with respect to speed of connection of leased lines. 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. There can also be a certain inequality in prioritisation by a party with market dominance, in the development of new, or upgrading of older trunk line networks, unless there are logical reasons for this prioritisation. The PTA believes that the demand for non-discrimination is both reasonable and normal.

401. The information gained by Mila from other companies when making agreements for leased line access, or on 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 from related or unrelated parties, see among other things Article 26 of the Electronic Communications Act no. 81/2003.

402. The PTA considers it normal that Mila provide its customers with service comparable to that received by units in the Siminn Group. The PTA intends to impose the obligation on Mila that all electronic communications companies that purchase access to leased lines, taking circumstances into consideration, enjoy the same conditions (including price) that apply to related parties or to those cooperating with Mila. The PTA intends furthermore to make the requirements that quality of access provided to unrelated parties be no less than that of services provided by Mila to related parties.

403. Information on access to leased lines and related service shall be equally accessible to other electronic communications companies as to related parties. The PTA considers it particularly important that Mila does not have the opportunity to discriminate in an abnormal manner between related and unrelated parties with respect to innovations on the market.[147] As related retail markets are in continuous development, unrelated parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new and/or improved and less expensive retail service at the same time as parties related to Mila. The PTA plans to impose the obligation on Mila that unrelated parties be notified on construction or other development of Mila leased line services with the same notice as parties related to Mila receive. This notice shall under no circumstances be shorter than six months. On the other hand, in the case of increased distribution of service which is already on offer and which has been previously notified into the market with the above specified six months' notice, for example when new connection points are offered, the PTA considers it reasonable that the notice should be at least three months. Information shall among other things contain planned prices, conditions, technical specifications, scheduled distribution plans, updated position on distribution and planned connection points. Related parties may thus not receive the information in question before unrelated parties. Mila shall give related and unrelated parties the opportunity to influence development of new construction and planned interfaces. Mila may not refuse to develop new service at the request of an unrelated party simply because a related party has not requested such service. Such a request by an unrelated party shall however be reasonable and normal.

404. In order to ensure that Mila fulfils the obligation in question the PTA can perform a technical and/or economic investigation as to whether unrelated parties can replicate the product offer of related parties in a sustainable manner (Technical and/or economic replicability). Should the PTA conclusion be that unrelated parties cannot replicate the product offer of related parties for technical or economic reasons, the PTA can instruct Mila to alter its product offer and/or offer new wholesale products to enable unrelated parties to replicate the product offer of related parties on normal commercial grounds.

405. Mila shall take care that applications from unrelated electronic communications companies access to leased lines are related services be processed in a timely manner as those of related parties. 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 provided for the delay. Mila is not authorised to make abnormal demands on the applicant as a condition for processing the application.

406. The PTA plans to make the reservation that Mila make service agreements with all purchasers of leased lines where among other things the quality of service shall be prescribed and issues relating to non-discrimination as itemised in the obligations that the PTA plans to

[147] Unjustified first mover advantage.

impose on Mila on the relevant market. These are Service Level Agreements (SLA). Such agreements shall cover the various service issues that relate to leased lines in question, including orders, delivery, service access, transfer of service and repairs. The service level agreements shall also among other things prescribe how mutual interference of signals will be avoided between parties on Mila leased lines. They shall furthermore prescribe efficient and economic procedures with respect to service switching at wholesale, that is to say when a Mila counterparty decides to transfer from one service to another at Mila. In order to ensure non-discrimination and transparency with respect to quality in Mila leased line services, the PTA plans to prescribe that all service level agreements shall be published on the Mila website. Such agreements can among other things be part of a reference offer. Parties can consult with the PTA on the making of such agreements and the PTA can rule on matters of contention when making these agreements. Service level agreements can vary between parties, depending on the wishes of Mila counterparties. Mila shall however respect the non-discrimination obligation and for this reason it is important that all such agreements are published. Mila shall complete service level agreements with all of its counterparties no later than six months after the publication of the decision on the relevant market.

407. In addition to the obligation to make service level agreements the PTA intends to impose the obligation on Mila to issue a specific declaration on quality guarantees (Service Level Guarantees (SLG)). Such service level guarantees shall cover all necessary service issues that relate to the leased lines including orders, delivery, service access, transfer of service and repairs. Such service level guarantees shall among other things prescribe specific fines which Mila 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 service level guarantee. Such provisions for fines should be objective, simple and unequivocal such the parties should not need to resort to the PTA or to the courts for interpretation. The PTA shall monitor Mila’s making of service level guarantees and this work shall be completed within six months from the time that the decision on the relevant market is published. Mila shall ensure that interested electronic communications companies be informed of the content of the service level guarantee.

408. In order to ensure that Mila respects the obligation for non-discrimination that is intended to be imposed on the company and the making of service level guarantees, the PTA intends to impose the obligation on Mila that it should collect and publish regular information on 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[148] and in the ERG document on obligations.[149] The key issues mentioned are in this instance delivery of orders, delivery of service, service availability, switching of service and maintenance. In this way Mila’s counterparties can compare the service they receive with the service received by companies related to Mila on the one hand and with the average in the sector on the other. In this way Mila 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 Mila has fulfilled its duty to make adequate service level agreements with its counterparties.

[148] BEREC Common Position on best practice in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale leased lines – page 12, BoR (12) 126.
[149] Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework.

409. As a minimum Mila shall publish the following key performance indicators as part of key performance assessment.

1) *Delivery of orders.*
    a. Number of orders delivered.
    b. Proportion of orders rejected after having been accepted in the ordering system.

2) *Delivery of products/services.*
    a. Average delivery time.
    b. Proportion of deliveries at or before time limit.
    c. Precision of delivery.

3) *Maintenance service*
    a. Proportion of faults in equipment for which company with SMP is responsible, measured in lines per year.
    b. Average duration of repair of fault.
    c. Proportion of fault repairs at or before time limit.

4) *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.

410. The PTA shall monitor whether Mila collects and regularly publishes the above specified key performance indicators for internal transactions on the one hand and external on the other. It is planned that Mila should publish the information in question in the first instance within six months from the publication of the decision on the relevant market and subsequently at monthly intervals.

411. The PTA considers that the publication of key performance factors is an appropriate methodology to monitor compliance with the non-discrimination obligation and with Mila's duty to make service level agreements. For this reason and on the basis of minimum criteria in the BEREC and ERG documents, the PTA intends to impose the obligations on Mila to gather and publish on its website figures for key performance indicators at monthly intervals.

412. The PTA understands that the obligation in question for collection of data can be onerous for Mila. On the other hand the PTA considers that measuring these criteria is extremely important for the market and further more important for Mila in its own operations. Publishing the above specified information is important for a competition on the relevant market and supports compliance with the demand for non-discrimination and that all parties can rely on this compliance.

413. Fair, moderate and justifiable conditions for access, including with respect to price are basic issues when striving to strengthen competition. The obligation for non-discrimination does not mean that all companies are subject to exactly the same conditions but rather that all difference in conditions is based on objective criteria. Mila is authorised to offer other types of leased line on the relevant market than have been mentioned but it may not limit that offer to the internal departments of the Siminn Group.

414. With the authority of Article 30 of the Electronic Communications Act the PTA intends to impose an obligation on Mila for non-discrimination on the wholesale market for trunk segments of leased lines, both with respect to price and other conditions. Mila shall provide all purchasers of leased lines, including its own units, with analogous terms of service, price, and quality of supply of data handling speeds, transport and communications protocols. Mila shall provide the PTA with a tariff for all speeds and all protocols and shall confirm that there is no difference between the treatment of internal departments and of external parties in this respect. Information on access to leased lines and related services shall be accessible to other electronic communications companies on equal basis as to related parties and the PTA considers it particularly important that Mila does not have the opportunity to discriminate in an abnormal manner between related and unrelated parties with respect to innovations on the market. Unrelated parties shall be informed about construction and other developments of Mila leased line services with the same notice as parties related to Mila and this notice shall not be shorter than six months. In the case of increased distribution of service which is already on offer, new connection points shall be announced with at least 3 months' notice. Mila shall also give related and unrelated parties the opportunity to influence development of new construction and planned interfaces. In order to ensure that Mila fulfils the obligation in question the PTA can perform a technical and/or economic investigation as to whether unrelated parties can replicate the product offer of related parties in a sustainable manner. Should the PTA conclusion be that unrelated parties cannot replicate the product offer of related parties for technical or economic reasons, the PTA can instruct Mila to alter its product offer and/or offer new wholesale products to enable unrelated parties to replicate the product offer of related parties on normal commercial grounds. The PTA plans to make the reservation that Mila make service level agreements (SLA) with all purchasers of trunk segments of leased lines where among other things the quality of service shall be prescribed along with issues relating to non-discrimination, as itemised in the obligations that the PTA plans to impose on Mila on the relevant market. In addition to the obligation to make service level agreements the PTA intends to impose the obligation on Mila to issue a specific declaration on quality guarantees (Service Level Guarantees (SLG)). In order to ensure that Mila respects the obligation for non-discrimination the PTA intends to impose the obligation on Mila that it should collect and publish regularly certain key performance indicators (KPI). Service agreements, declaration on service level agreement and key performance indicators shall be published within six months from the publication of the decision on the relevant market. Mila shall arrange its operations in such a manner that the treatment of information is in accordance with Article 26 of the Electronic Communications Act. It is unauthorised to provide other parties with information on transactions with other companies with respect to potential purchase, including other departments of the Siminn Group, subsidiaries or partners.

7.4.3 Obligation for transparency

415. Provisions on transparency can be found in Article 29 of the Electronic Communications Act no. 81/2003. 81/2003. There it says in Paragraph 1 that in order to increase transparency of interconnection or access to the facilities of an electronic communications company the PTA can oblige an electronic communications company with SMP to publish specific information, for example bookkeeping information, technical information, information on the characteristics of networks, terms and conditions for delivery and for use and tariffs. It is authorised to make an exemption to the publication of information if an electronic communications company can show that it concerns important financial or business interests that it is fair and normal to keep confidential.

416. In Paragraph 2 of Article 29 of the Act it states that when an electronic communications company is obliged to practise non-discrimination then the PTA can demand that it publishes a reference offer that contains a breakdown description of interconnection or access, along with terms and conditions, including tariffs. The Administration can prescribe changes to the reference offer. PTA is authorised to set rules on the content of interconnection agreements and reference offers.

417. Transparency of terms and conditions for interconnection and access to facilities, including with respect to price, served the purpose of expediting agreement negotiations, prevents disputes and supports belief among parties to the market that there is no discrimination in provision of services. It is necessary that technical provisions that applied to access to leased lines are clear and transparent which can be particularly important in ensuring operational compatibility.

418. Conditions that apply to access to networks and services are of extreme importance to new parties and can have a decisive impact on their possibilities to gain market share. It is clear that the competitive position of such parties is at risk if they must endure discriminatory conditions. Furthermore, it facilitates the entry of companies into the market if the conditions on offer for access and service that they must purchase are foreseeable and the same applies to the basis for pricing and other conditions.

419. The publication of a reference offer gives all parties to the market the opportunity to see what is on offer and it ensures that companies will not be required to pay for service and facilities for which they have no need. The PTA considers it necessary for Siminn to publish a reference offer for trunk segments of leased lines in wholesale.

420. The PTA considers it proper to use the provisions of the Electronic Communications Act on transparency to assure to the extent possible that the obligations for access non-discrimination achieve results. It is the opinion of the Administration that transparency in information can facilitate and shorten negotiations between parties, which includes terms and conditions being clear at the outset.

421. The PTA intends to maintain the obligation on Mila to publish a reference offer for trunk segments of leased lines and related facilities and services that will be itemised to the extent that ensures that other electronic communications companies do not buy facilities and service that they do not need. Further to this the reference offer should be broken down in accordance with the needs of the market and should contain a description of Mila terms and conditions along with the relevant tariff.

422. At least the following items shall be specified in the Mila reference offer:

- Basic items pertinent to the Agreement
  - Type of service
  - Fees, invoices, and accounting
  - Price
  - Quality of service
- Technological implementation
  - Interconnection points
  - Distribution system and communication between systems
  - Other services
  - Testing

- Delivery time, the time from when a request for interconnection is received by Mila until the delivery should be completed.
- Customer maintenance
- Confidentiality
- Guarantees and payment
- Unforeseen events and special circumstances
- Term of agreement and termination of agreement
- Treatment of disputes

423. The PTA also considers it necessary that Mila publish the following information on access to terminating segments in wholesale leased lines:

- Tariff
- Technical characteristics and minimum requirement limitations
- Conditions for delivery and use
- Connection of user equipment
- Delivery conditions, among other things:
  - Information regarding method of ordering;
  - Delivery notice, which is counted from the day that the user submitted a formal request for a leased line until the time when 95% of all leased lines of the type in question have been installed with users;
  - Duration of agreement, that is to say the period of time defined in the agreement and the minimum agreement duration that the user is obliged to agree to;
  - Repair time which is the period of time from the time that notification of fault has been received by the company in question until the time when 90% of all leased lines of the same type had been repaired and users, as appropriate, have received a notification to this effect. When an offer is made for repairs in varying quality categories for the same types of leased lines, information shall be published on a variety of typical repair times;
  - Rules on repayment.

424. Mila shall publish a new reference offer in accordance with the description here above. Mila shall update the reference offer as required, such as for changes in needs of parties to the market or as a result of changes in technology. Should the Mila reference offer not be considered adequate for the market, the PTA could prescribe amendments to the offer pursuant to Paragraph 2 of Article 29 of the Electronic Communications Act. All changes to the reference offer shall be submitted to the PTA for endorsement with reasonable notice[150] and they will not come into force without the endorsement of the PTA. An updated reference offer shall be submitted to the PTA no later than six months after the publication of the decision on this analysis.

425. Mila shall send all agreements made on wholesale trunk segments of leased lines to the PTA.

[150] Amendments to text of the reference offer or new tariff items shall be published by Mila for the purposes of information and sent to the PTA at least three months before they are to come into force. Amendments to prices of tariff items which have been in force and specified in the tariff shall be notified to the service purchasers with at least 60 days written notice.

426. With the authority of Article 29 the PTA intends to maintain the obligation on Mila for the publication of an itemised reference offer for trunk segments of leased lines and related facilities and service. Publication on the Mila website is deemed adequate.

427. The PTA considers it unnecessary to maintain the obligation for publishing of bookkeeping information, but Mila is obliged to deliver all such information to the PTA to the extent that this is needed to verify compliance with the obligations that are in force on the company on this market.

7.4.4 Obligation for separation of accountancy

428. Pursuant to Article 31 of the Electronic Communications Act no. 81/2003 the PTA can impose obligations on an electronic communications company with significant market power for separation of accountancy between operations that relate to interconnection or access and other operations in such a manner that it will be possible to allocate all revenue and costs to operational units that can be connected to differing services. In addition to this the Administration can demand of a company that operates both an electronic communications network and electronic communications services that its wholesale prices and prices within the company are transparent, among other things to prevent unjustified subsidies. The PTA can decide which bookkeeping methods are to be used. To ensure transparency and non-discrimination the PTA can demand bookkeeping information, including information on income from third parties.

429. In Regulation no. 564/2011 on bookkeeping and cost analysis in the operations of electronic communications companies, there is an explanation of the purpose of separation of accountancy and instructions on how it should be implemented. The purposes among other things is to make it possible to see income, costs and sunk capital for varying operational units and to be able to show that the same conditions apply to services provided to other companies and to services supplied to other departments of the electronic communications company in question.

430. It is the view of the PTA that it is necessary to impose an obligation on Mila for accountancy separation on the relevant market, among other things to ensure non-discrimination and transparency and to enable light to be shed on real costs where appropriate.

431. The purpose of accountancy separation is among other things to be able to identify information from bookkeeping, to show as exactly as possible the results from various parts of operations as though from separate companies. Separation of costs also limits of Mila’s possibilities to charge for costs that are not related to a specific service. It is important that the operation of leased lines is separated to be able to assess its performance with respect to whether pricing of the wholesale service harmonises with cost, whether cross subsidies are taking place between different services and to ensure that all parties are treated equally with respect to price and other conditions. Separation is a prerequisite for being able to determine costs for leased lines.

432. With respect to implementation of separation of accountancy it says in Chapter II of Regulation no. 564/2011 that electronic communications companies shall record their bookkeeping in such a manner that it is possible to allocate all revenue and costs to operational units which can then be linked to various services. Electronic communications companies that operate general electronic communications networks shall separate costs in networks such that it will be possible to equally distribute network costs to varying services, including access to

networks. This shall apply equally to access by service departments of the company and by other electronic communications companies to the network. The cost of operating networks and/or services shall be distributed to operational units in with activity based accounting pursuant to Article 7 of the previously referenced Regulation and to more detailed rules set by the PTA.

433. With the authority in Article 31 of the Electronic Communications Act the PTA maintains obligations on Mila for separation of accountancy. Such separation shall constitute as a minimum that the operation of leased lines in wholesale is separated in the accounts from other operations. The Mila wholesale prices and internal prices within the company shall be transparent, among other things to prevent unjustified subsidies. In its accounts Mila shall separate revenue, costs, assets and liabilities for access to trunk segments of its leased lines. Mila is required to submit separate profit and loss accounts annually to the PTA along with a balance sheet for the operations of leased lines and a statement of the division of indirect costs that cannot be allocated with comparison with other cost items.

434. Pursuant to Article 25 of Regulation no. 564/2011 Mila shall send the PTA the company's annual financial statements along with an itemised profit and loss account for the company's service components that relate to obligations for separation of accountancy. The accounts shall contain the following:

- The endorsement of a chartered accountant.
- The board's report.
- Separated profit and loss accounts
- Settlement and reconciliation of internal sales.
- Reconciliation against the company's annual financial statements.

435. Pursuant to Article 24 of Regulation no. 564/2011 Mila shall annually prepare a report on bookkeeping arrangements. The report shall contain among other things the following:

- Accountancy rules.
- Rules for the division of costs and revenue.
- Rules on internal trading.
- Description of calculation methodology.
- Information on sizes and quantity figures, other than financial.
- A list of products, services, activities and network components.
- Rules on assessment of assets and depreciation.

436. The above specified statement should have reached the Administration no later than five months after the end of the financial year. Should Mila accounting separation not be satisfactory, the PTA reserves the right to submit demands at a later date for further accounting separation.

437. Mila shall furthermore deliver a report from an independent auditor to the PTA to show that there is correspondence between the Mila description to the PTA on how costs had been divided and the implementation of accounting separation by Mila.

In the report the following shall be shown as a minimum:

- The conclusions of the party that conducted the audit.
- Statement of all instances of inconsistency.

- Proposals by the party conducting the audit for remedies, and their impact.
- Detailed description of how the audit was performed.
- Consolidated financial and bookkeeping information (for example an opinion with respect to the distribution of common costs and changes to assessment of assets to value in use).

7.4.5 Obligation for price control

438. In Article 32 of the Electronic Communications Act no. 81/2003 it states that when market analysis indicates that lack of active competition leads to a company with SMP demanding excessively high fees or where there is an abnormally small difference in wholesale and retail prices, the PTA may impose obligations on an electronic communications company for a cost related tariff and obligations for cost accounting for certain types of interconnection or access. Investment by electronic communications companies shall be taken into account and reasonable dividends from sunk capital, while also taking into account the risk of the investment. When an obligation for a cost related price tariff with reasonable dividends is imposed on an electronic communications company, the burden of proof rests on the company. As was stated in the discussion on competition problems, the PTA considers that Mila could have an incentive to demand excessively high prices if there is no price control on the company's tariff.

439. In the same provision it states furthermore that the PTA can require that an electronic communications company make a cost model for the calculation of prices. When calculating costs the PTA can use as a reference the operation of analogous service that is considered efficiently run and can also 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.

440. It is the conclusion of the above specified market analysis of the wholesale market for trunk segments of leased lines that competition is not sufficiently active and that Mila has SMP on the relevant market. Taking into account Paragraph 1 of Article 18 of the Electronic Communications Act, the conclusion indicates that Mila can hinder competition and can behave to an appreciable extent independently of competitors, customers and consumers. Mila thus has the possibility of maintaining abnormally high prices and/or of exerting margin squeeze.

441. Price is in many instances the main cause of competition problems and one must therefore consider that an obligation for price control is the most effective method to deal with such matters. In the opinion of PTA, obligations concerning transparency and non-discrimination alone are not sufficient to solve competition problems such as cross-subsidy, price discrimination and excessive pricing. The PTA is of the opinion that an obligation concerning price control is necessary to establish competition in the relevant market and to strengthen competition at retail level. The PTA considers that in order to facilitate entry for independent service providers to the relevant market and to ensure that price for access is reasonable and normal and based on costs it is necessary to impose the obligation for price control on Mila.

442. There are various possible methodologies for control and for a decision on price for access. According to Article 32 of the Electronic Communications Act the PTA can demand that an electronic communications company make a cost model for the calculation of prices. As stated previously the PTA 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 the PTA 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.

443. 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) [151] 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, that is to say based on the relevant company's bookkeeping where costs are allocated to the relevant service (FAC)[152] or on the analysis of long run incremental costs (LRIC)[153] on the basis of costs incurred in and efficiently operated electronic communications network (bottom-up model)[154].

- *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.

444. When choosing the best methodology for deciding wholesale prices, it is important to keep in mind on the one hand that the methodology is efficient and not too onerous and on the other hand to create acceptable conditions for companies that may request wholesale access on the relevant market.

445. It can be assumed that cost analysis is an onerous obligation that should only be imposed if other methods are unsuccessful. In cost analysis prices 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. The PTA can employ the BU-LRIC method for cost analysis, pursuant to Regulation no. 564/2011 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. The methodology can, on the other hand be extremely costly and time-consuming.

446. The PTA considers that because of the high cost of implementing the BU-LRIC cost model it is not appropriate at this point in time to adopt such a methodology on this market in

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[151] Historical Cost Accounting.

[152] All costs are allocated to the appropriate operations and services (Fully Allocated Costs; FAC).

[153] Long-Run Average Incremental Cost 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.

[154] 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 designed electronic communications network in the relevant electronic communications market. (LRIC+ means that share in fixed joint costs is taking into account, for example premises).

this country. This could entail unnecessarily high costs for the PTA and for the relevant electronic communications companies. The Administration is very small in a European context and for this reason its budget is much more limited than is normally the case. Experience in the EEA had shown that the cost in making a BU-LRIC model was in the order of ISK tens of millions for each model and for each update. It was not considered right at this stage to make this requirement as the increase in cost would in all likelihood be eventually borne by consumers in the form of higher rates. The PTA therefore considers it proper to find another more economical manner to achieve the objective of having tariffs that reflect the operations of an efficiently operated electronic communications network on the relevant market. Cost analysis will be based on the work that has already been done in recent years in cost analysis in order to minimise costs and time spent in reaching a decision on new cost-oriented access prices for the coming 2-3 years.

447. In the Decision of the PTA no. 20/2007 dated 14 September 2007, it was specified in the obligation for price control that Mila should keep cost accounting and shall make a cost model according to historical costs for the calculation of prices for wholesale leased lines. The construction of the cost model shall be completed within one year from the publication of the decision on the relevant market. In order for Mila to be able to demonstrate that the tariff for a specific kind of service or product is cost-oriented, it is necessary to practise cost accounting that captures, identifies, assesses and allocates the relevant costs to the services or products in accordance with recognised rules, that is to say a causal relationship. Mila was to submit to the PTA a description of the cost accounting bookkeeping for trunk segments of leased lines and to publish the main cost categories and the rules used to allocate costs. In order to monitor changes in prices, the PTA considered it proper to make the condition that all changes to the Mila tariffs should be notified to the PTA and that they would not come into force without prior endorsement by the PTA.

448. Mila has based its wholesale tariff for leased lines on the above specified obligation for price control. In accordance with the above obligation for cost analysis Mila submitted cost analysis for trunk segments of leased lines on 01 July 2009. The above specified cost model was based on historical costs which were allocated to the relevant services (HC FAC). With the PTA Decision no. 14/2011 dated 27 May 2011, the Administration endorsed the Mila cost analysis with amendments prescribed by the Administration in the Decision and the tariff came into force on 1 August 2011.

449. With the authority of Article 32 of the Electronic Communications Act the PTA intends to impose the obligation on Mila for a cost oriented wholesale tariff for trunk segments of the company's leased lines. When deciding prices the cost analysis methodology shall be used which is based on historical costs allocated to the relevant service (HCA FAC).

450. When implementing its cost analysis Mila shall base its methodology on Chapter IV of Regulation no. 564/2011 on bookkeeping and cost analysis in the operations of the electronic communications companies, such as on evaluation of operating capital, useful life and ROI requirement. Furthermore account shall be taken of the PTA position on criteria and calculations in the above-mentioned Administration Decision no. 14/2011 with respect to cost analysis for trunk segments of leased lines.

451. In the Decision of the PTA no. 14/2011, the Administration took into account tariffs from comparable competition markets. When selecting comparable competition markets it can be necessary to limit the selection to those countries which are comparable to Iceland and to

take into account operations of comparable service to the extent possible. The markets in Norway, Sweden and Ireland were selected as the geographical circumstances there were considered very similar to the circumstances in Iceland. The tariff from TDC in Denmark was also taken into account. The new Mila tariff for trunk lines was compared with tariffs of the main companies in the above specified comparison countries[155]. Start-up costs were not take into account but only annual costs borne by the purchasers. The comparison was based on samples but it had to be taking into account that there were varying methods of recording costs, varying discount systems etc. The conclusion of the comparison was that the Mila prices were in 1-3 position for the lowest prices in this comparison, varying by bandwidth and distance. In the opinion of the PTA this benchmarking indicated that the cost analysed Mila tariff reflected the fact that the relevant service from that company could be considered efficiently operated.

452. When prices are decided on the basis of historical costs which are allocated to the service in question (FAC), this could possibly induce inefficient investments by the electronic communications company in question and result in inflated asset base, see the report from BEREC (BoR (11) 65)[156] from December 2011. In the report it is stated that where this methodology is used, the NRAs shall endeavour to exclude costs from the asset base that are incurred in an inefficient manner. The above specified benchmarking did not indicate that the Mila asset base had been abnormally high and the PTA has monitored the development of Mila's asset base on this market in recent years. If the Mila cost analysis for trunk segments of leased lines returns a conclusion that the PTA considers unacceptable when one considers the development of price levels and tariffs on comparable competition markets, the PTA may request a review of that conclusion. The Administration will in such cases request that Mila reviews the criteria applied when evaluating Mila's assets used in providing the relevant service, for the purpose of returning a conclusion which is in accordance with the above considerations and with the objectives of the EU Commission to support competition and to improve the investment environment on the electronic communications market.[157]

453. The Mila cost analysis for wholesale tariff for trunk segments of leased lines shall be based on the following main criteria:

- Allocation of costs is based on separation of accountancy for trunk line network, Mila asset bookkeeping and on costs from Mila's bookkeeping system where operational costs are entered under bookkeeping accounts.
- The cost base is Mila historical costs (HCA).
- Operational costs are based on the preceding financial year in each instance. The methodology is based on allocating all costs to the service in question (FAC).
- When evaluating investments for leased lines, the reference shall be indexed historical costs but one shall also take into account the gross replacement cost of operational assets in the light of next generation networks (NGN).
- A depreciation methodology shall be used that reflects the value in use of an asset.

[155] This was a comparison of tariffs from Telia Sonera (Sweden), Jara/Telenor (Norway), Eircom (Ireland), TDC (Denmark) The foreign exchange reference was the Central Bank of Iceland five-year mid-rate for the years 2006-2010.

[156] BEREC response to the Commission's Questionnaire on costing methodologies for key wholesale access prices in electronic communications, 9 December 2011, page 13.

[157] Commission Recommendation from 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment - C(2013) 5761.

- The equivalent annual cost shall be used to calculate annual capex.
- The cost of the trunk line network shall be captured, including share of joint costs, management, IT and senior management in accordance with separation of accountancy.
- Real return on investment shall be used as a reference, based on WACC[158] real from capital bound in assets used in connection with providing service where the risk premium reflects the risk related to operations on the relevant market.
- The number of line shall be calculated taking into account line equivalents. In assessment of line equivalent exponents one shall normally take into account costs in proportional context to the capacity and length of leased lines. In the case of new service it is authorised to take into account an estimate of the number of connections.
- Average base unit cost for the whole country, and/or for individual categories of paths is calculated from allocated opex and capex divided by number of lines or line equivalents.

454. Mila shall ensure at any given time that the tariffs list all wholesale service on the market for trunk segments of leased lines on offer by Mila to its own units and related companies. Furthermore Mila is obliged to review the product offer in its tariff in step with market requirements at any given time and if reasonable requests are received in accordance with the access obligation. All additions and amendments to the tariff shall be endorsed in advance by the PTA and do not come into force until such an endorsement has been provided, subsequent to national consultation and consultation with ESA and with other electronic communications regulatory bodies in the EEA.

455. Mila is authorised to offer categories of paths if they are based on cost criteria and non-discrimination between parties. By categories of paths the PTA specifically means that Mila is allowed to calculate tariffs based on connections on the fiber optic circle path on one hand and on the other based on connections off the fiber optic circle path. The prices for each category of path are to be uniform for the whole country.

456. The Mila tariffs for leased lines shall be easy to understand and shall take into account the following main principles:

- Are based on costs and on objective criteria such as distance and performance.
- They shall take into account all service items included in the relevant service.
- They shall in general be divided into: Start-up charge (installation) and subscription charge (fixed lease charge for a specific period of time). Where another division is used (such as price per kilometre) it shall be based on objective criteria.

457. The Mila tariff for leased lines is now generally divided into start-up charge, subscription charge per month and kilometre charge per month. Exceptions from this rule are that the lease of dark fibre is based solely on a start-up charge and the distance charge (divided into urban and rural) and the tariff for Metropolitan Data Highway (MDH) is based on a start-up charge and then a subscription charge per month.

458. The PTA considers that Mila shall in the coming years aimed towards amendments in

[158] In accordance with Article 16 of Regulation no. 564/2011 the PTA decides on an annual basis the rated return on capital (WACC) which electronic communications companies should use as a reference in their calculations.

its tariffs such that there will only be a price for a subscription charge per month independent of distance were possible and based on capacity and on the service items included in the service can question.

459. Table 7.1 specifies the most common types of trunk line lease offered by Mila today. For this reason Mila shall as a minimum cost analyse the products specified below.

Table 7.1. Most common trunk line lease offered by Mila's [159]

Protocols	**Transmission capacity**
ATM	2 Mb/s up to 155 Mb/s
Ethernet	2 Mb/s, 4 Mb/s, 6 Mb/s, 8 Mb/s, 10 Mb/s, 20 Mb/s, 48 Mb/s, 100 Mb/s and 400 Mb/s
Gigabit connections (Ethernet/MDH)	From 512 Mb/s to 10 Gb/s
SDH/PDH	64 Kb/s, 128 Kb/s, 256 Kb/s, 512 Kb/s, 2 Mb/s, 45 Mb/s, 155 Mb/s and 622 Mb/s
MPLS-TP	10 to 90 Mb/s, 100 Mb/s, 150 Mb/s, 200 Mb/s, 900 Mb/s, 1 Gb/s, 2 Gb/s, 3Gb/s, 10 Gb/s
Wavelength division multiplexing (WDM, CWDM, DWDM)	Undefined
Dark fibre	Undefined

460. In parallel to this draft analysis the PTA issued a Draft Decision on the cost analysis and wholesale tariffs submitted by Mila for leased lines in the trunk line network. This is a comprehensive review of tariffs for trunk line segments of leased lines, MDH connections (gigabit connections) and temporary connections and for Ethernet connections (MPLS-TP) which is a new service. The Mila cost analyses, with the amendments required by the PTA, are in accordance with the main criteria specified above. The PTA plans to endorse the new Mila wholesale tariffs on the basis of the above specified cost analyses subsequent to national consultation and consultation with ESA. The above specified wholesale tariffs come into force at the same time as the decision announced here is published.

461. These tariffs shall be reviewed not later than before the end of 2016 and then annually in accordance with updates of the above mentioned cost analysis in accordance with the development in number of units sold and costs. New wholesale tariffs for trunk segments of leased lines will not come into force prior to endorsement by the PTA subsequent to national consultation and consultation with ESA in each instance.

7.4.6 Cost accounting

462. Pursuant to Article 32 of the Act on Electronic Communications the PTA can impose obligations for cost accounting for specific types of interconnection or for access, in accordance

[159] This is not an exhaustive list of products covered by the relevant market.

with a cost related tariff. According to Chapter IV of Regulation no. 564/2011, on bookkeeping and cost analysis in the operations of an electronic communications companies, an electronic communications company with SMP on whom special obligations have been imposed pursuant to the Act on Electronic Communications shall inform the PTA on the structure of separation in bookkeeping, with respect to income and expenses, among other things for the user network and the backbone network.

463. Cost accounting is necessary when the obligation for price control has been imposed on an electronic communications company with SMP Subsequent to the intention of the PTA to impose an obligation for price control on Mila, the PTA also intends to impose an obligation for cost accounting. The obligation for cost accounting supports the obligation that the tariff is cost related and it is necessary for the implementation of separation of accountancy and can support surveillance of non-discrimination.

464. In order for Mila to demonstrate that the tariff for a specific kind of service or product is cost-oriented, it is necessary to practise cost accounting that captures, identifies, assesses and allocates the relevant costs to the services or products in accordance with recognised rules, that is to say a causal relationship.

465. The PTA considers that without the obligation for cost accounting, Mila could price its services on the relevant market above cost and the Skipti Group could have an abnormally small difference between wholesale and retail prices which would have negative consequences for users. Without the obligation for cost bookkeeping the PTA cannot ensure that pricing takes costs into account, thus preventing problems of this kind.

466. The PTA plans to impose an obligation on Mila for cost accounting of those parts of the electronic communications operations necessary for giving access to trunk segments of leased lines. Mila shall submit to the PTA a description of the cost accounting for trunk segments of leased lines which shall show among other things cost categories, cost items and their relationship with the cost driver.

467. Mila shall, no later than six months after the publication of the Decision on the relevant market, submit to the PTA a description of cost accounting for trunk segments of leased lines and related facilities and shall publish cost categories and rules used to allocate costs. Mila shall at the same time submit a report to the PTA from an independent auditor showing that there is correspondence between the Mila description to the PTA of how costs are split and the implementation in the Mila cost bookkeeping system.

7.5 Assessment of impact of imposed obligations

468. In accordance with the principle of proportionality, it is necessary to assess whether the burdensome impact of the obligations that the PTA plans to impose are proportionate in the light of the objectives. The PTA considers that the obligations are conducive to achieving the objectives of the Electronic Communications Act no. 81/2003 on active competition and efficient electronic communications. The need for each individual obligation is discussed in the relevant sections here above, and reference is made to this discussion.

469. The obligations that the PTA intends to maintain on Mila are as a whole quite burdensome for the company. On the other hand the PTA considers that they are in accordance with proportionality and that they are not a greater burden than is necessary redress the

competition problems that have been identified on the relevant market. The obligations are to a large extent similar to the obligations that have been in force on the relevant markets since the last market analysis in 2007.

470. The obligation for access is somewhat of a burden on Mila but it is a prerequisite for active competition being able to thrive on the market for trunk segments of leased lines. It is not possible to solve the competition problems described here above in any other way than by imposing the obligation for access. One must keep in mind that Mila receives normal recompense for the access and the obligation can lead to more efficient use of the equipment in which Mila has invested. Mila has installed the necessary facilities and service systems to be able to provide the service prescribed. It is thus not significantly onerous to continue to provide the service as before.

471. The PTA considers the obligation for non-discrimination to be not particularly onerous as it is a reasonable demand on a company like Mila which is part of the Siminn Group, which has significant market power in a great number of the sub-markets in the electronic communications sector. The PTA intends to add obligations on Mila to those imposed after the previous analysis, for service level agreements, for a declaration of quality assurance and to publish measurements of key performance indicators in addition to prescribing a specific period of notice that Mila must respect, for the provision of information on new civil works, upgrading of leased line systems and migration to next generation networks. This involves management and costs for Mila but in the opinion of the PTA these items are necessary to ensure effectiveness of the non-discrimination obligation and they are also fully in accord with developments in Europe.

472. The obligation for transparency, among other things the publishing of reference offers, represents a certain inconvenience for Mila. One must however keep in mind that Mila has already published such an offer and now only needs to update it in accordance with the requirements presented here. The burden that Mila has to bear from the obligations is not excessive if one takes into account how necessary the obligations are to strengthen competition. The PTA intends to lift the obligation on Mila to publish information from its bookkeeping which will reduce the scope of the transparency obligation prescribed in 2007 in this respect.

473. The PTA considers it necessary to prescribe separation of accountancy for companies that have very varied operations and a large market share. Separation of accountancy is also necessary to be able to adequately determine costs for operation of trunk segments of leased lines and associated facilities. Separation of accountancy is already in place at Mila in accordance with obligations imposed in 2007 which means that it is not particularly burdensome to organise bookkeeping in the same or in a similar manner for the coming years.

474. The obligation for price control is onerous to the extent that Mila cannot charge any price it pleases for access to its networks. The obligation however ensures that recompense is normal, given that the service is operated in an efficient manner. The PTA proposes the continued use of a similar methodology for deciding prices and it should not be a burden for the company to maintain the methodology that has been used in past years.

475. The obligation for cost accounting was included in the obligation for price control according to the PTA Decision on the relevant market from 2007. The PTA description of cost accounting and related submission of information is rather more detailed in this instance and calls to some extent for increased work by Mila. The arrangement now proposed is in

accordance with Regulation no. 564/2011 on bookkeeping and cost analysis in operations of electronic communications companies and is necessary to achieve full results from price control.

476. The obligations will not inhibit the development of the fixed line network as pricing will be based on the costs of companies that are operated in an efficient manner and normal return on investment is assumed. Price control should thus not inhibit Mila willingness to invest in the long-term.

477. In the opinion of the PTA the above specified obligations are reasonable and necessary to support active competition and should not be considered unnecessarily onerous. The PTA considers the obligations to be in the interests of competition in the long-term and that they will encourage an increase in service offers on the market for trunk segments of leased lines and on related electronic communications markets.