



POST AND TELECOM
ADMINISTRATION
IN ICELAND

Draft Decision

**on Mila tariff for Ethernet service on the
wholesale market for trunk segments of leased
lines**

1. July 2015

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1. Introduction

The Mila ehf. (Mila) cost analysis for Ethernet service here under discussion is based on obligations imposed on the company with the Decision of the Post and Telecom Administration (PTA) no. 20/2007 dated 14 September 2007.

The Mila products being dealt with in this cost analysis belong to the wholesale market for trunk segments of leased lines which is Market 14 pursuant to the EFTA Surveillance Authority (ESA) Recommendation from 2004.

The PTA has in parallel to the draft decision here under discussion, made a market analysis of the above mentioned wholesale market and in the light of this analysis the Administration intends to maintain the obligation on Mila for price control on the company's goods and services on this market.

1.1 PTA Decision no. 20/2007

On 14 September 2007 the PTA made Decision no. 20/2007 on the designation of companies with significant market power and on the imposition of obligations on the wholesale market for terminating segments of leased lines (Market 13)¹ and trunk segments of leased lines (Market 14)².

The PTA came to the conclusion that the definition of Market 14 to be found in the ESA Recommendation³ applies in this country. The PTA decided to designate Míla as having significant market power on the wholesale market for trunk segments of leased lines (Market 14).

With the authority in Article 32 of the Electronic Communications Act an obligation for price control for trunk segments of leased lines was imposed on Mila. Mila was to keep cost accounting and to make a cost model for the calculation of prices for leased lines in wholesale, according to historical costs. In order for Míla to be able to demonstrate that the tariff for a specific kind of service or product is cost-oriented, it was 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 according to a causal relationship. Míla 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. Mila was to deliver a report to the PTA from an independent auditor showing correspondence between the company's explanation to the PTA of how costs are split and the practical implementation in its cost bookkeeping system.

The PTA proposed that the Mila tariff for leased lines should be based on costs and on objective criteria in accordance with the following rules:

¹ Wholesale terminating segments of leased lines.

² Wholesale trunk segments of leased lines.

³ See the EFTA Surveillance Authority Recommendation on the relevant markets from 14 July 2004.

- The same price should apply across the whole country.
- Tariffs for leased lines should normally be divided between installation charge and charge for use, that is to say a fixed lease price for a specific period of time.
- Were another division used it should be transparent and based on objective criteria.
- Tariffs for leased lines should apply to all service items provided between net interconnection points where the user had access to the line.

The PTA made the condition that all changes to the Mila tariff for the wholesale market for trunk segments of leased lines should be notified to the PTA and that they would not come into force without prior endorsement by the PTA.

1.2 Draft PTA Decision on market analysis of the wholesale market for trunk segments of leased lines

The PTA has made a market analysis for the wholesale market for trunk segments of leased lines (previously Market 14) for the second time in parallel to this cost analysis. The planned conclusion of the market analysis is that circumstances in this country support the conclusion that Mila should be designated as a company with significant market power and the obligations be maintained on the company. Furthermore, circumstances on the market have not changed much from the circumstances that pertained in 2007. All wholesale of leased lines within the Siminn Group has been transferred to Mila. The number of companies on the market is more or less the same as in 2007. The PTA considers that significant and non-transitory entry barriers exist to the market and that active competition cannot be expected within the next 2 to 3 years. Mila still has an overwhelmingly dominant market share, whether measured by revenue from leased lines (75-80%) or by number of active connections (72%). In addition to this the PTA intends among other things to maintain obligations on Mila for price control and for cost accounting.

In the PTA market analysis, Mila Ethernet service is specified as part of the service offer which belongs to the wholesale market for trunk segments of leased lines as Ethernet service is a substitute product for trunk lines.

1.3 Facts of the case

At a meeting between the PTA and Mila 3 April 2014, the company presented a new Ethernet trunk leased line service which was in the development process and which was based on the company's MPLS-TP technical equipment. The following day Mila presented the service in question to parties to the market on its website. In the following days, Mila gave presentations to those electronic communications companies that purchase wholesale leased line service from the company.

In the above specified notification on the Mila website which was published 4 April 2014, it was stated that equipment was already installed at several locations in Mila's connection system. It was stated that the equipment gave Mila the possibility of defining a new type of packet

switched data transmission service based on Ethernet technology which had the advantage over technology used by Mila up to this point in time (SDH) of being able among other things to define packet priority, dedicated and shared bandwidth, and VLAN prioritisation and separation.

It was stated that Mila would work on further product development in step with customer requirements.

With respect to tariff, the idea was that the country would be divided into regions, that is to say on the Fibre Optic Ring around the country on the one hand and regions branching from the Fibre Optic Ring on the other. In Category 1 (the Fibre Optic Ring) 17 specified connection locations would be offered. In Category 2 (inland region of Suðurland) 14 specified connection locations would be offered. In Category 3 (Reykjanes) 6 specified connection locations would be offered. In Category 4 (Hvalfjarðarsveit) 4 specified connection locations would be offered. In Category 5 (Snæfellsnes) 7 specified connection locations would be offered. In Category 6 (Vesturland) 7 locations would be offered and 2 in Category 7 (Norðurland Vestra). It was stated that additional regions would be added in the near future.

Customers could choose between 1 Gb/s and 10 Gb/s ports with bandwidth from A to B. It would be possible to purchase what is called EIR (excess information rate). EIR could be a maximum of the guaranteed bandwidth that was purchased but never greater than 1 Gb/s. It would thus not be an option to purchase solely EIR. The price for EIR would be 10% of the tariff for guaranteed bandwidth. A setup charge would be collected for new connections.

The connections could be serial connected or star connected. Serial connections would reduce distances on the Fibre Optic Ring. Using a star connection it would for example be possible to lease one port from Selfoss and connect from that point to other locations in Suðurland.

The tariff would initially be as for E-Line service based on MEF standards. E-LAN service, where all points can talk to each other, would not be part of Ethernet service for the time being.

A temporary tariff for Region 1 (the Fibre Optic Ring) would be based on monthly charges that would include the size of the port (1 or 10 Gb/s), distance and speed. There would however be an initial maximum lease limit of 8 Gb/s between 2 locations. The setup charge would be ISK 96,000 for a new connection on the Fibre Optic Ring. The conversion fee for migration from leased lines to Ethernet service would be ISK 36,000. The price for EIR would be 10% of the tariff for guaranteed bandwidth. The maximum over-booking would be equal to the bandwidth that had been ordered as guaranteed bandwidth but never greater than 1 Gb/s.

A temporary tariff for Regions 2-7 would be based on monthly charges that would include the size of the port (1 or 10 Gb/s), distance and speed. It would be possible to request the following speeds: 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 600, 700, 800 and 900 Mb/s and 1, 2 or 3 Gb/s. The setup charge would be ISK 50,000 for a new connection. The conversion charge from leased lines to Ethernet service is ISK 36,000. The price for EIR would be 10% of the tariff for guaranteed bandwidth. The maximum over-booking would be equal to the bandwidth that had been ordered as guaranteed bandwidth but never greater than 1 Gb/s.

Finally it was stated that all criteria and numbers in the tariff were presented with the reservation of endorsement by the PTA.

1.3.1 Mila request to provide new service

Mila submitted cost analysis for Ethernet service in a letter to the PTA dated 30 April 2014. In the letter it was stated that in recent months, Mila customers had requested a tariff independent of distances. In order to meet their requests Mila had now developed a new product which should fulfil requirements for substantial bandwidth, which was continuously increasing, for greater variety in attributes of equipment and for decreased weighting of distance in the tariff. The product is called Ethernet service which would be for connections of 10 Mb/s and higher.

At a meeting with the PTA last 3 April, Mila presented the product in question to the Administration and requested that the Administration authorise the company to present the product to the market the following day. It was clear that it would take some time for the PTA to scrutinise the Mila cost analysis and tariffs for the service. It was therefore important that the PTA authorised Mila to commence provision of the service in question prior to a final PTA decision on conditions and price being available. Mila strongly emphasised that provisional prices should apply until a final PTA decision was available without adjustments having to be made subsequent to that decision. Such a situation would create great uncertainty for Mila customers. It was appropriate to point out that customers have the option of purchasing this new product while at the same time they could lease connections according to the traditional leased line tariff. The tariff would come into force on one May 2014.

In the accompanying report (Ethernet service - cost analysis 2014) the product was described and calculations for the lease price were explained.

1.3.2 PTA Decision no. 15/2014

With the PTA Decision no. 15/2014 dated 4 July 2014 Mila was authorised to commence provision of Ethernet trunk leased line service based on MPLS-TP technology prior to the PTA having made a final decision on conditions and tariff for the type of service in question. The Decision was made subsequent to national consultation.

According to the Decision Mila was to further develop the product in line with fair, normal and reasonable wishes and requirements of the company's customers. Mila was to assure full non-discrimination between electronic communications companies in this development, among other things with respect to the decision on further distribution of the service.

Mila was to submit to the PTA a special appendix containing the company's reference offer for leased lines which should include conditions that were to apply for the service in question, no later than 1 September 2014. The service description advertised on the Mila website on for April 2014 was to apply until the final PTA decision on conditions for the service was available.

The Decision prescribed that the prices in the above specified service description should apply as provisional prices until the final prices were decided by the PTA. Settlement of a possible

difference in price was to take place no later than one month subsequent to the PTA final decision on prices being available.

1.3.3 Communication regarding the Mila cost analysis

In its letter from 16 October 2014 to Mila, the PTA presented objections to the structure of the tariff that had been proposed by Mila for Ethernet connections outside the Fibre Optic Ring. The PTA considered that instead of using varying local tariffs, it would be more appropriate to use a single standardised tariff for areas outside the Fibre Optic Ring based on speed and kilometres in the same manner as had been done for the Fibre Optic Ring. A single price system should be used outside the Fibre Optic Ring which would apply to all regions. The PTA considered it normal that fibre-optic cost, which forms the bulk of cost [...] ⁴ and which is based on a charge per kilometre, be thus better reflected in the tariff which would in turn result in a clearer causal relationship between cost and price.

In addition to this the PTA pointed out that it was desirable that tariffs were easily understood and as simple as possible. The PTA also pointed out that it was important for there to be predictability in pricing and that when prices varied by region there was limited predictability when considering new regions that might be added. The same applied to development within regions, particularly for smaller regions, where changes in the number of connections had a significant impact. As this was a new product, developments in the number of connection points and of connections would be unclear and this would equally apply to the size of connections in each region. For this reason it would be inappropriate to subdivide the tariff to the extent proposed by Mila.

The PTA however pointed out that the Administration considered it desirable for the tariff to develop towards becoming independent of distance as is Mila's intention. The Administration on the other hand considered that this should not be done until experience has been gained on the impact of migration to Ethernet-TP on the cost base and on other aspects.

In its letter the PTA requested explanations on the factors that decided the minimum data transfer speeds that Mila planned to offer. The PTA also requested explanations as to why Mila estimated investments in equipment to be greater in [...] than at other locations.

In its letter dated 30 October 2014, Mila submitted a revised cost analysis for locations outside the Fibre Optic Ring.

Mila criticised the PTA for presenting this objection at such a late stage, 6 months after the calculations had been submitted. This was particularly inconvenient in the light of the fact that current prices were provisional and where it was clear that Mila would need to settle the price difference when the final tariff was decided. It was clear that with this change, prices in some regions/connections would increase significantly while others would be reduced.

⁴ Information removed for purposes of confidentiality. The same applies to information provided in square brackets here above.

Mila acceded to the PTA proposal and calculated new prices using the methodology proposed by the PTA. Mila agreed that such a tariff was simpler than the one that had been presented. Mila added 2 new areas with the calculations, Tröllaskagi and East Iceland, in addition to having added locations in Suðurland, Reykjanes and Snæfellsnes.

With respect to the PTA comments on data transfer speeds, Mila stated that the reason for not going below 100 Mb/s on the Fibre Optic Ring was that it was both expensive and not economic to deliver connections with a speed lower than 100 Mb/s. It was however decided to offer 10 Mb/s and higher outside the Fibre Optic Ring as the need for data volume was lower there than the need in the backbone layer.

Mila also stated that the cost for [...]

In a letter from the PTA dated 1 December 2014, the PTA requested more detailed information from Mila bookkeeping on investments already made by the company and on how estimates were based on this information. Then the PTA requested a breakdown of investment costs for equipment at locations outside the Fibre Optic Ring into equipment costs and installation costs. In addition to this the PTA raised objections to the calculations of hosting costs. The PTA furthermore submitted a query with respect to the multiplier coefficients for distances that were used when calculating line equivalents. In the Mila analysis the coefficients for distances between locations on the Fibre Optic Ring were 1, 1.5 and 2 but these coefficients were 1, 2 and 3 for distances between locations outside the Fibre Optic Ring.

In an email dated 2 December 2014 the PTA also requested explanations of the arrangement for conversion charges and setup charges, and also for information on the cost criteria underlying the conversion charge.

With a letter dated 5 December 2014, Mila replied to the PTA comments and submitted a recalculation of the price model for Ethernet service outside the Fibre Optic Ring. In addition to this, Mila submitted a summary of its bookkeeping for equipment and related installation costs.

In the letter from Mila it was stated that corrections had been made to real costs, in some instances an increase and in other instances a reduction of investment costs. Mila provided explanations for these corrections. Mila also submitted a revision of estimated investment costs for those locations where equipment had not yet been installed. Furthermore Mila submitted answers to PTA queries with respect to coefficients, conversion charges and setup charges.

1.4 National consultation

The Draft Decision of the cost analysis here under discussion was submitted to stakeholders for consultation on the Administration's website on 23 December 2014 and the consultation was completed last 10 February. Comments were received from Fjarskipti hf. (Vodafone) which were sent to Mila for comment. An overview of the comments received, along with the PTA position can be found in Appendix II.

2. The PTA conclusion

2.1 General

In Sections 2.2 to 2.9 here below one can find the criteria and conclusions of the PTA Decision on the Mila cost analysis for Ethernet service here under discussion. There is discussion on those factors the PTA considers important as criteria for the Administration's position when calculating a tariff for Ethernet service on the wholesale market for trunk lines. The factors in question are the following:

- Description of Mila Ethernet service
- Rate of return requirement
- Opex
- Capex
- Line equivalents
- Ports
- Setup charge and conversion charge
- Total costs

Each sub-section is structured with a description of the Mila cost analysis coming first, followed by the position of the PTA for each issue.

The PTA bases its methodology for examination of the Mila cost analysis on Article 32 of the Electronic Communications Act no. 81/2003, on Regulation no. 564/2011⁵, on the Recommendations of the EU Commission and of ESA and on the position taken by BEREC (formerly ERG) as appropriate. The Administration also takes into account decisions of the Appellate Committee for Electronic Communications and Postal Affairs, recognised information providers such as Bloomberg, Ibbotson and Cullen International in addition to assessments of local advisers and information from electronic communications companies.

The PTA bases its conclusion on the Mila cost analysis for Ethernet service at locations on the Fibre Optic Ring which was received by the PTA on 30 April 2014, and on locations outside the Fibre Optic Ring which was received by the PTA on 5 December 2014.

2.2 Description of Mila Ethernet service

In the Mila cost analysis which was presented on 30 April 2014 there is a description of the new service offered by Mila. There it is stated that the new Mila Ethernet service is based on Mila MPLS-TP equipment. The equipment would give Mila the possibility of defining a new type of packet switched data transmission service based on Ethernet technology which had the advantage over technology used by Mila up to this point in time (SDH) that it makes it possible

⁵ Regulation on bookkeeping and cost analysis in the operations of electronic communications companies.

to among other things define packet priority, dedicated and shared bandwidth, prioritisation and VLAN separation. With the development of the technical solution the work done by the Metro Ethernet Forum was taken into account and efforts made to map the thinking in that initiative to the Icelandic electronic communications environment.

It was stated that the service was suitable among other things for the following:

- Interconnection of IP networks
- Interconnection of data networks of electronic communications companies
- Data transfer, for example high-volume traffic such as high-speed file transfer
- Backbone network for mobile phones: 4G
- Carriage for Access Option 2

The advantages of the service are the following:

- Customers receive the bandwidth that they have purchased
- The service is based on division into regions and is mostly independent of distance
- Customers do not share purchased CIR traffic with other parties
- Transmission duration for data will be shorter
- Increased service on offer for fault diagnosis and the possibility for greater control of data
- The service meets strict requirements with respect to standards
- It is possible to reduce costs by purchasing shared bandwidth (EIR) along with guaranteed bandwidth (CIR)

Then it was stated that customer ports would always be Ethernet with 1 Gb/s or 10 Gb/s speed. The bandwidth that the customer subsequently purchased for interconnection of his system units was very scalable. It was possible from the same customer ports to direct data traffic to one or more ports located on the same network. This was done with VLAN tagging of traffic where the customer could in reality request that part of the data traffic entering the Mila network be delivered out of the network to all the connection points to which he was connected. In the first instance Mila would offer fixed dedicated guaranteed bandwidth between connection points and where requested would offer access to shared bandwidth (over-booking) which could be categorised as not guaranteed. Should this bandwidth be available at the moment when a need was created in the customer's network because of a sudden peak in load then the data traffic would be carried through the system. Should the bandwidth not be available then the data packets would be delayed or even lost, depending on circumstances in each instance.

The transmission system could take priority tagging of the packets into account to ensure even greater service quality, that is to say with respect to loss of packets or packet jitter, as the service to be provided through the Mila system would have varying susceptibility to these faults. Real-time service made more demands on transmission than for example browsing on the web.

2.2.1 Structure of model

The original plan was that the country should be divided into 7 regions, that is to say the Fibre Optic Ring and 6 regions branching out from the Ring. With the amendments submitted by Mila on 30 October 2014 at the request of the PTA, locations in the country are divided into 2 categories, on the one hand locations on the Fibre Optic Ring and on the other hand locations outside the Fibre Optic Ring.

As this is a new product, Mila estimates costs where appropriate where the largest cost item is fibre-optic for the system, or its equivalent. Mila allows for lease of one fibre-optic pair on all routes. In some instances, for example on the Fibre Optic Ring, Mila uses wavelength system for this service. [...]

According to the Mila analysis, Ethernet service users MPLS-TP equipment which has both IP and SDH functionality. This equipment will in all likelihood replace older SDH equipment when it is decommissioned. Initially however, MPLS equipment will mostly be used for this new product and for connections greater than 2Mb/s. Connections with less data transfer speed will continue to be on the SDH system until it is decommissioned. This process will take a number of years.

It is expected that the lease price will increase incrementally according to the distance of the connection. Three categories of distance will be used. According to the Mila analysis the categorisation is as follows:

Fibre Optic Ring:

- 0-49 km
- 50-99 km
- 100 km or greater

Outside the Fibre Optic Ring:

- 0-19 km
- 20-49 km
- 50 km or greater

In the Mila calculations the lease price is based on the number of ports and the connection (line route) between them with a specific data transfer speed. The Mila proposal allows for the difference in price between 1 and 10 Gb/s ports being greater than in ports in wholesale switches.

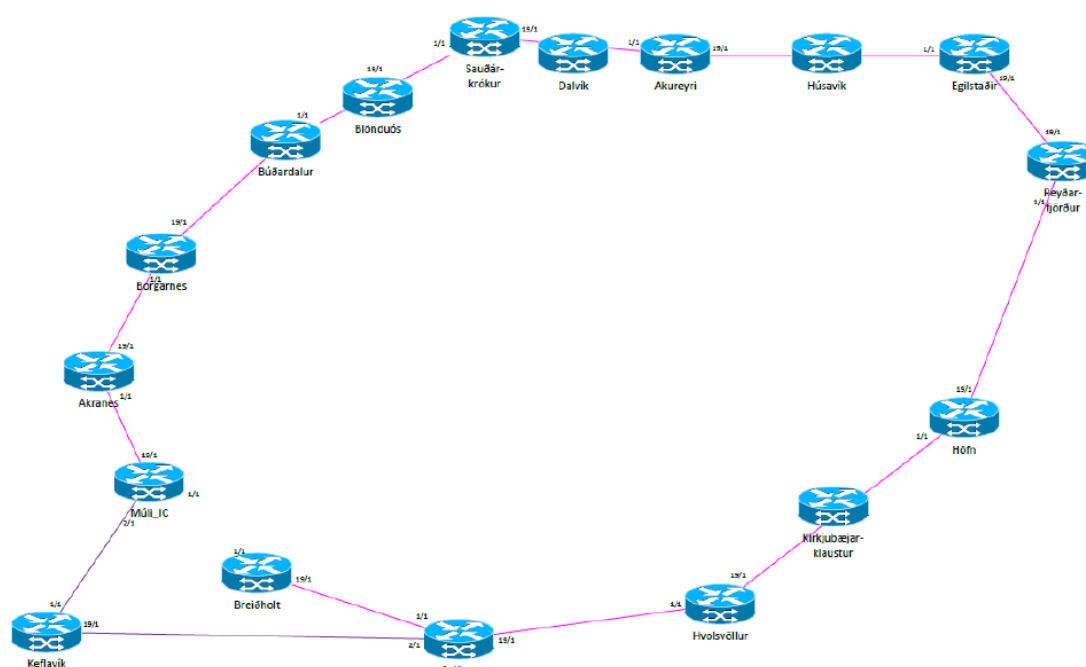
It will be possible to lease specific bandwidth with over-booking possibilities, which is called burstable bandwidth. Mila allows for over-booking being a maximum of the equivalent of leased bandwidth. Mila states that the reason for their not being more over-booking on offer is that initially there will be a significant volume of unused bandwidth. Were Mila to offer a very significant amount of over-booking the tendency would be for customers to purchase a very small amount of guaranteed bandwidth and a very large amount of burstable bandwidth.

2.2.2 Locations on the Fibre Optic Ring

Mila offers Ethernet service at the following locations on the Fibre Optic Ring:

Múli	Suðurlandsbraut 28	108 Reykjavík
Akranes	Kirkjubraut 37	300 Akranes
Borgarnes	Borgarbraut 12	310 Borgarnes
Búðardalur	Miðbraut 13	370 Búðardalur
Blönduós	Húnabraut 15	540 Blönduós
Sauðárkrókur	Við Kirkjutorg	550 Sauðárkrókur
Dalvík	Hafnarbraut 26	620 Dalvík
Akureyri	Hafnarstræti 102	600 Akureyri
Húsavík	Garðarsbraut 21	640 Húsavík
Egilsstaðir	Fagradalsbraut 9	700 Egilsstaðir
Reyðarfjörður	Búðareyri 2	730 Reyðarfjörður
Höfn	Hafnarbraut 21	780 Höfn
Kirkjubæjarklaustur	Klausturvegur 15	880 Kirkjubæjarklaustur
Hvolsvöllur	Austurvegur 2	860 Hvolsvöllur
Selfoss	Austurvegur 26	800 Selfoss
Breiðholt	Norðurfell 15	111 Reykjavík
Keflavík	Hafnargata 40	230 Reykjanesbær

The figure here below shows Mila development on the Fibre Optic Ring:



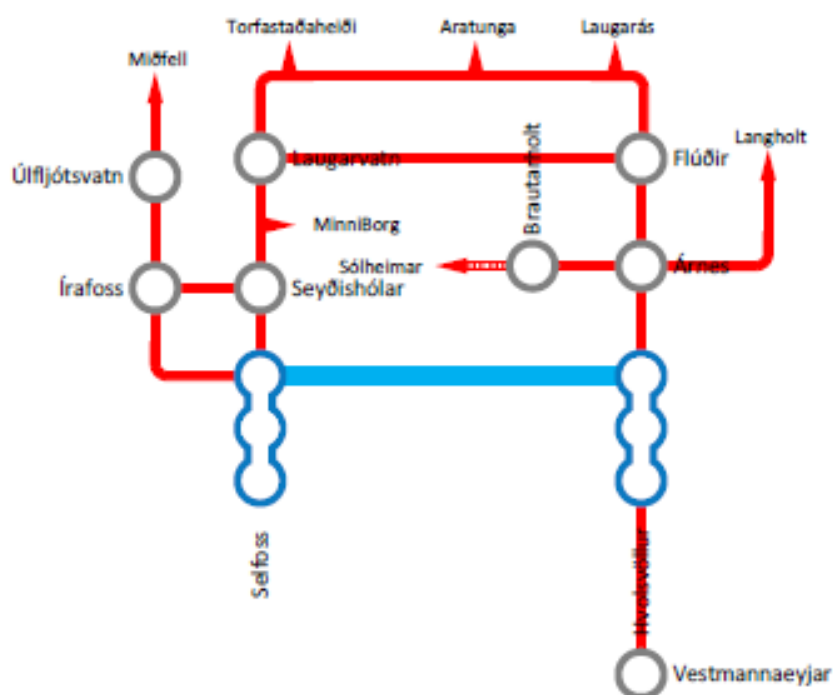
2.2.3 Locations outside the Fibre Optic Ring

Mila offers Ethernet service at the following locations outside the Fibre Optic Ring:

Suðurland

Connection points: Selfoss or Hvalsavöllur

Aratunga
Árnes
Brautarholt
Flúðir
Írafoss (Ljósafoss)
Langholt
Laugarás
Laugarvatn
Miðfell
Minniborg
Seyðishólar
Sólheimar
Torfastaðaheiði
Úlfljótsvatn
Vestmannaeyjar



Reykjanes

Connection points:

Keflavík

Garðar

Grindavík

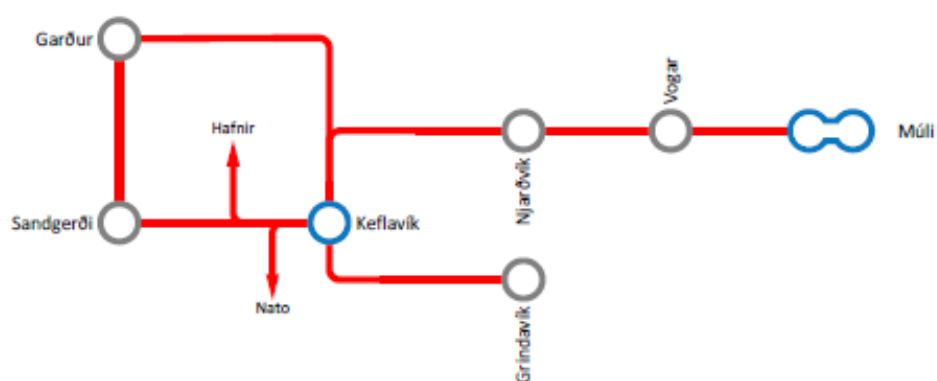
Hafnir

Njarðvík

Sandgerði

Verne

Vogar



Hvalfjarðarsveit

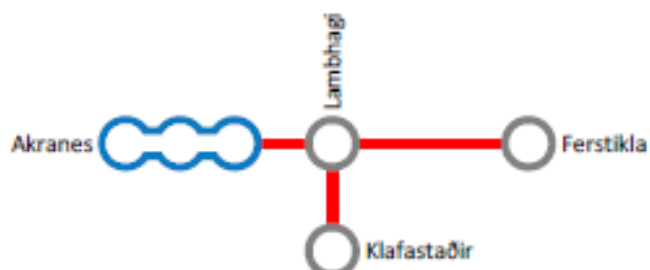
Connection points:

Akranes

Ferstikla

Klafastaðir

Stóri-Lambhagi



Snæfellsnes

Connection points: Borgarnes and Búðardalur

Axlarhólar (Öxl)

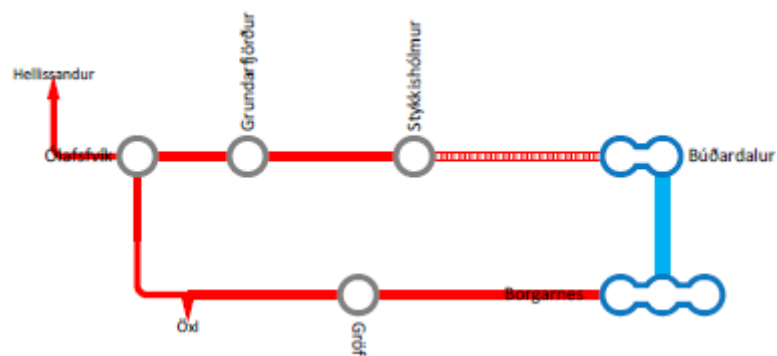
Grundarfjörður

Gröf

Hellissandur

Ólafsvík

Stykkishólmur

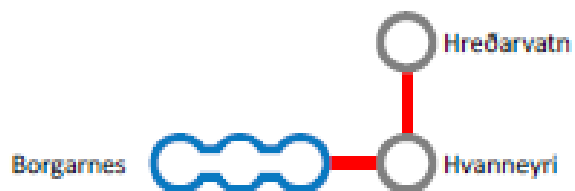


Vesturland

Connection points: Borgarnes

Hreðavatn

Hvanneyri



Norðurland Vestra

Connection points: Blönduós

Hnjúkar



Tröllaskagi

Tengipunktur: Sauðárkrókur or Dalvík

Varmahlíð

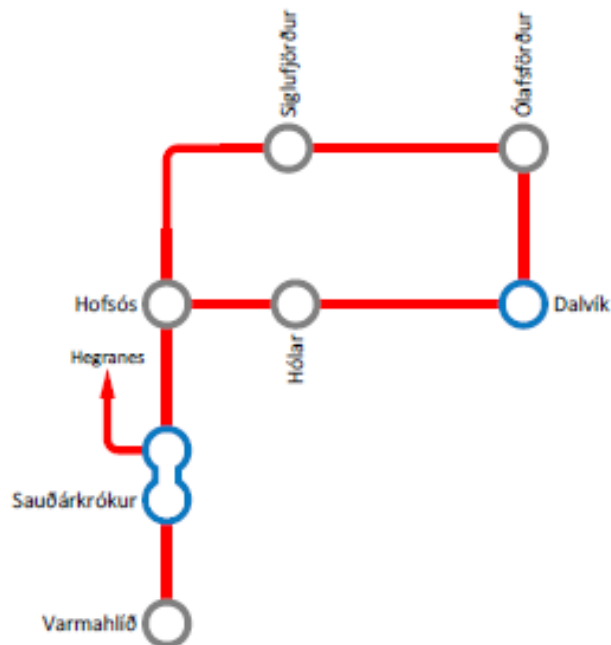
Hólar

Hofsós

Hegranes

Siglufjörður

Ólafsfjörður



Austurland

Connection points: Reyðarfjörður

Eskifjörður

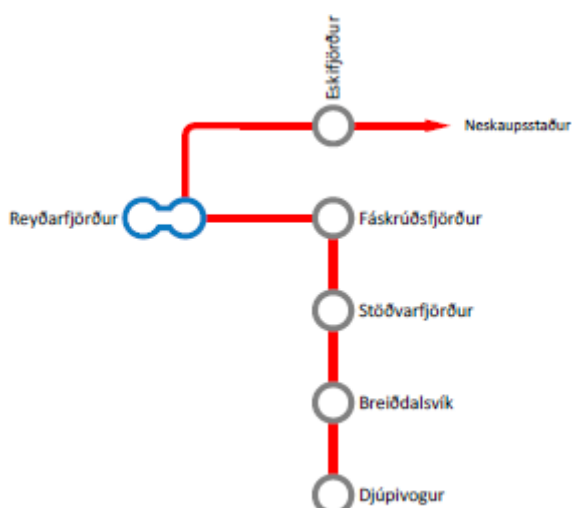
Neskaupstaður

Fáskrúðsfjörður

Stöðvarfjörður

Breiðdalsvík

Djúpivogur



2.3 Weighted Average Cost of Capital

2.3.1 Mila cost analysis

In the Mila cost analysis dated 30 April 2014 the following is stated with respect to rate of return on capital:

"Mila WACC ratio for 2013 is 7.6%. The same calculation criteria are used as in previous analyses:"

	2013
Risk free rate.....	3.13%
Risk premium.....	3%
<i>Cost of debt</i>	6.13%
Market risk premium.....	5.00%
Unlevered beta.....	0.5
Levered beta.....	0.72
Equity.....	0.65
Debts/equity.....	0.54
Other risk (alpha).....	0.00
Tax rate.....	0.20
<i>Return on equity, post-tax</i>	6.71%
<i>Return on equity, pre-tax</i>	8.38%
WACC (pre-tax)	7.59%

2.3.2 The position of the PTA

In Article 16 of Regulation no. 564/2011 on accounting and cost analysis in the operations of electronic communications undertakings it is stated that the costs of capital bound in assets that are used in connection with the provision of service or service goods shall be calculated. The rate of return shall be based on Weighted Average Cost of Capital (WACC) which is calculated from the rate of return requirement on equity and the rate of return requirement on debts in accordance with Regulation no. 564/2011. The CAPM model shall be used when calculating the rate of return on capital assets and the rate shall reflect the time value of money and the risk related to operations on the market in question. The cost of debt shall be calculated as the sum of risk-free interest and interest premium which reflects normal mark-up for companies on the market. The PTA shall decide the WACC at least once a year for specific financial markets based on market risk premium, economic gearing and the position with respect to working capital and debts.

The calculations of the WACC using the PTA criteria is shown in the table here below.

Calculation of WACC for an electronic communication company and Iceland

Weighted Average Cost of Capital	2013
Risk-free interest	3.13%
Unlevered beta	0.50
Levered beta	0.72
Debts/equity	0.54
Market premium	5.00%
Return on equity	6.71%
Risk-free interest	3.13%
Debt premium	3.00%
Cost of debt	6.13%
Interest-bearing debt%	35%
Equity%	65%
Tax rate	20%
Cost of debts, after tax	4.90%
Return on equity, pre-tax	8.38%
WACC pre-tax	7.6%

The PTA evaluation of average cost of capital (WACC real) for an electronic communications company in Iceland is 7.6% for the year 2013 in calculations of rate of return for capital tied in assets used in connection with the company's provision of services. The position with respect to working capital and debts is not taken into account in the PTA calculations in this instance.

The Mila assessment corresponds to the PTA conclusion on the average cost of capital for an electronic communications company.

2.4 Opex

2.4.1 Mila cost analysis

In the Mila cost analysis dated 30 April 2014 the following is stated with respect to opex:

"Opex for the system is divided into fibre-optic lease, hosting and electricity, service agreements for equipment, maintenance, monitoring and senior management costs.

Fibre-optic rental

By far the largest cost item within this system is the lease of the fibre-optic pair. Allowances is made for the lease of fibre-optic connection between all locations with existing fibre-optic infrastructure. At 3 locations, Miðfell, Hnjúkar and Sólheimar there is microwave connection and allowance is made for investment in microwave equipment at those locations. [...]

Hosting and electricity

Allowance is made for hosting for equipment and also for electricity consumption. There are two types of equipment. [...]

Service agreements

Service agreements have been made for the equipment. For the less expensive equipment the service agreement is for [...] while for the more expensive equipment the cost of the service agreement is [...]."

Mila mentions that the main unknown factor is the cost of material and labour, senior management and monitoring.

Mila specifies that in the Mila cost analysis of trunk lines, the cost for material and labour is [...]. Mila used the same proportion for material and labour in this analysis, [...].

Mila assesses senior management costs using the same methodology as for the calculation of labour and materials. Senior management cost for Equipment was [...].

Opex for the Mila monitoring is approximately ISK [...] The calculation of the share of MPLS-TP in this cost is based on [...]

The monitoring is thus calculated as follows: [...]

2.4.1.1 Locations on the Fibre Optic Ring

In the Mila cost analysis dated 30 April 2014, the following is stated with respect to all opex of locations on the Fibre Optic Ring:

"As has been previously stated, opex is divided into lease of fibre-optic pair, hosting and electricity, maintenance costs, monitoring and senior management costs.

The costs are divided in the following manner:

[...]

Fibre-optic rental

The fibre-optic lease is based on the tariff for fibre-optic pair in the countryside:

[...]

Service agreement and hosting and electricity

Cost of service agreements and hosting and electricity is as follows:

[...]

Maintenance costs, senior management costs and monitoring

Conclusions of cost analysis of backbone network 2013:

[...]

Maintenance costs are calculated as follows:

[...]

Senior management costs are calculated as follows:

[...]

Costs for monitoring are calculated as follows:

[...]

2.4.1.2 Locations outside the Fibre Optic Ring

In the same manner as at locations on the Fibre Optic Ring, Mila divides opex of locations outside the Fibre Optic Ring into lease of fibre-optic and into costs for service agreement, hosting and electricity, maintenance, monitoring and senior management.

In the Mila analysis dated 5 December 2014 the cost for fibre-optic was updated in accordance with the tariff for fibre-optic which is currently being reviewed by the PTA in parallel to the cost analysis here in question and market analysis of the prior Market 14. Mila allows for 15% discount and the total costs for lease of fibre-optic is ISK [...]. Hosting cost was also updated in accordance with the newest tariff and with a 15% discount.

It is stated by Mila that the service agreement for equipment outside the Fibre Optic Ring costs [...]. It is calculated that space required for equipment is [...].

The same methodology as before is also used when assessing costs for maintenance, senior management and monitoring. These costs are divided therefore in the following manner:

[...]

2.4.2 The position of the PTA

The PTA has reviewed Mila opex. It is stated that Mila opex for the system is divided into fibre-optic lease, hosting and electricity, service agreements for equipment, maintenance, monitoring and senior management costs.

Fibre-optic rental

As stated by Mila, the fibre-optic is by far the largest cost item in this system.

The fibre-optic lease is based on the tariff for fibre-optic pair in the countryside: A discount of 15% is allowed for. Annual costs are estimated at ISK [...].

[...]

Hosting and electricity

Hosting is calculated on the basis of the tariff for hosting in facilities. The cost for hosting is calculated on the basis of the dimensions of the equipment used at each location.

Electricity cost is calculated from the estimated energy consumption of the equipment used for providing this service and from the Mila tariff.

Annual costs for hosting and electricity are estimated at [...].

Maintenance, monitoring and senior management costs

Mila estimates these costs on the basis of a proportion of analogous costs in the Mila cost analysis for leased lines. In the light of the fact that this is a new product, the PTA makes no objection to the Mila methodology for the time being. When further experience has been gained on the development of this product the methodology will be reviewed.

According to the above the annual Mila opex for Ethernet service at locations on the Fibre Optic Ring is estimated at approximately ISK [...]. The division of opex is according to the following table:

[...]

According to the above the annual Mila opex for Ethernet service at locations outside the Fibre Optic Ring is estimated at approximately ISK [...]. The division of opex is according to the following table:

[...]

As can be seen in the tables above, lease of fibre-optic is by far the largest cost items. [...]

2.5 Investment costs

2.5.1 Mila cost analysis

Mila has collated capex of equipment already installed and has estimated capex for equipment yet to be installed. The investment is estimated for locations on the Fibre Optic Ring on the one hand and outside the Fibre Optic Ring on the other.

2.5.1.1 Locations on the Fibre Optic Ring

Equipment has been installed at 13 locations on the Fibre Optic Ring. The following table shows costs for equipment and its installation at these locations.

[...]

In the Mila cost analysis dated 30 April 2014 the following was stated with respect to capex for locations on the Fibre Optic Ring:

[...]

Mila estimates the cost of investments for Blönduós, Dalvík, Kirkjubæjarklaustur and Breiðholt. In this assessment there is allowance for ISK [...]

Mila allows for [...] annual depreciation and on the basis of 7.6% WACC the annual cost of capital is ISK [...].

[...]

2.5.1.2 Locations outside the Fibre Optic Ring

The Mila cost analysis for locations outside the Fibre Optic Ring was last updated with a letter from Mila dated 5 December 2014

Equipment has been installed at 19 locations and capex for equipment at other locations is estimated on the basis of experience from these installations and their cost. The following table shows costs for equipment and its installation at these locations.

[...]

As is shown in the table above, Mila allows for [...].

In a Mila letter dated 5 December 2014 the following was stated with respect to assessment of costs:

[...]

The Mila estimate for investment in Ethernet service at locations outside the Fibre Optic Ring is specified in the following table:

[...]

As stated in the table here above, the Mila estimate of capex for Ethernet service at locations outside the Fibre Optic Ring amounts to just under ISK [...] and the annual capital cost of this investment is approximately ISK [...].

Mila has furthermore specified that the equipment to be installed at [...]. It was stated in the Mila cost analysis that at Miðfell, Hnjúkar and Sólheimar there is a microwave connection and allowance is made for investment in microwave equipment at those locations. The estimate also allows for a microwave connection between Stykkishólmur and Kambsnes at Snæfellsnes. Mila also estimates that the cost at [...].

2.5.2 The position of the PTA

The PTA has examined data from Mila bookkeeping and makes no objections to the capex specified by Mila for the locations where equipment has been installed. The PTA makes no objections to the newest Mila investment estimates for locations where there is no available information on cost.

The total investment in equipment and installation at locations on the Fibre Optic Ring is ISK [...] while total investment for locations outside the Fibre Optic Ring is ISK [...]. The average investment for each location outside the Fibre Optic Ring is lower than for locations on the Fibre Optic Ring as Mila is investing in less expensive and lower capacity equipment outside the Fibre Optic Ring.

The useful life of equipment is in accordance with the criteria used for equipment in the cost analysis for leased lines.

Given a 6.67 year useful life and 7.6% WACC then the annual capital cost for Ethernet service at locations on the Fibre Optic Ring is approximately ISK [...] and ISK [...] for locations outside the Fibre Optic Ring.

2.6 Ports

Customer ports are either Ethernet with 1 Gb/s or 10 Gb/s data transfer speed. The Mila calculation is based on a monthly price for Ethernet service being comprised of lease of ports and a connection (line path) with specific data transfer speed between points.

2.6.1 Mila cost analysis

In the Mila cost analysis dated 30 April 2014 it is stated that Mila considers it necessary to have a significant price difference between 1 Gb/s and 10 Gb/s ports as otherwise customers would request 10 Gb/s ports where they were not required. Such an outcome would be expensive for Mila.

It was stated that Mila used 2 types of equipment for MPLS data transfer. On the one hand there is equipment that can serve up to 8*10 Gb/s ports if all ports are used for 10 Gb/s, or 60*1 Gb/s ports if all ports are used for 1 Gb/s. On the other hand there is significantly more expensive equipment which can serve up to 32*10 Gb/s or 160*1 Gb/s. Mila therefore believes it necessary that the price for ports should encourage customers to lease 1 Gb/s ports where they do not need 10 Gb/s which will mean more economical use of the equipment.

For this reason Mila sets the coefficient for 10 Gb/s ports at 5 and at 1 for 1 Gb/s ports.

Mila estimates that a normal basic price for 1 Gb/s is ISK 7,000 per month and the price for 10 Gb/s is therefore ISK 35,000. When calculating the lease price, expected revenue from these ports is deducted from total costs. The remainder is the basis for the price of a connection.

In a Mila letter dated 5 December 2014 the following was stated about ports:

"When a Mila customer orders a new Ethernet service, ports are installed in accordance with the order (1 or 10 Gb/s). The purchase price for 1 Gb/s has varied somewhat but a common price would be around [...]. In addition to this there is the labour involved in installing ports, travel, cost for space in the distribution frame, fibre-optic couplers and registration.

*It has a major impact on the Mila investment whether an order is made for 1G or 10G ports as the number of connections that can be set up is much fewer for 10 Gb/s than for 1Gb/s. One card in a shelf takes a maximum of 2*10 Gb/s or 10*1 Gb/s. This means that for each 10 Gb/s port it would be possible to set up 5*1 Gb/s. [...]"*

Mila estimates the number of ports at each location on the Fibre Optic Ring and outside the Fibre Optic Ring. Mila states the following with respect to ports at locations on the Fibre Optic Ring:

"As previously stated the price for a 1 Gb/s port is decided at ISK 7,000 per month and the price for a 10 Gb/s port is ISK 35,000 per month and these lease prices are allowed for in the estimate for the number of ports. The ports on the Fibre Optic Ring are to be serial connected and there are normally two ports at each location, one in each direction. The illustration in Section 4.1.1⁶ shows how the Fibre Optic Ring is structured."

"The estimated number of ports is as follows:

[...]"

According to the above Mila estimated the number of ports at 31 and their equivalents at [...]. From this Mila estimates that revenue from ports at locations on the Fibre Optic Ring is ISK [...] per annum. This amount is subtracted from total costs for locations on the Fibre Optic Ring before monthly charges for the base lease unit are calculated.

Mila estimates that the number of ports at locations outside the Fibre Optic Ring are [...]. This amount is subtracted from total costs for locations outside the Fibre Optic Ring before monthly charges for the base lease unit are calculated.

2.6.2 The position of the PTA

The Mila tariff for Ethernet service is structured in such a manner that the monthly charge for Ethernet service is composed of a charge for ports (by quantity and type of support) and the charge for a connection between connection points according to the transmission speed of the connection. The PTA accepts the Mila proposal for the structure of the tariff for Ethernet service

⁶ See illustration in Section 2.2.2 here above.

and charges for ports. The PTA considers it normal that incentives for efficient development of the Mila system are taken into consideration when deciding prices for ports. It benefits all characters if the system is developed in as economic a manner as possible. For this reason the PTA makes no objections to the ratio 1 to 5 being used when deciding prices for ports as is proposed by Mila.

The monthly charge for ports does not precisely reflect the direct investment behind the ports themselves and other related costs. They are seen as part of an overall system and their related costs are not fully separated in this cost analysis. Estimated revenue from ports is therefore deducted from total costs before the monthly price for connections is calculated.

According to the above the monthly charge for 1 Gb/s ports is ISK 7000 and ISK 35,000 for 10 Gb/s ports.

2.7 Line equivalent

2.7.1 Mila cost analysis

Mila uses a comparable methodology when deciding line equivalents as is used in the Mila cost analysis of the tariff for leased lines, which the PTA will scrutinise in parallel to the cost analysis here under discussion. The weighting of each lease unit, that is to say line equivalent, is calculated as a proportion of a base lease unit taking into account data transfer volume and distance. This is done by deciding coefficients between varying data transfer volumes and other coefficients between varying distances.

Mila uses 100 Mb/s Ethernet connections as a base unit with respect to data transfer volume where a base unit with respect to distance is a 0 to 49 km connection on the Fibre Optic Ring and a 0 to 19 km connection outside the Fibre Optic Ring. The line equivalent of 100 Mb/s Ethernet connections on the Fibre Optic Ring which have a length of 0 to 49 km is thus 1, in the same way that 100 Mb/s Ethernet connections outside the Fibre Optic Ring that have a length of 0 to 49 km have a line equivalent of 1.

The cost for each base unit is calculated and on this basis the price for other sizes of Ethernet connections is determined in accordance with their line equivalents.

In the Mila cost analysis dated 30 April 2014 following is stated with respect to exponents:

"Exponents between data transmission volumes

The exponent between bit speed is [...]. This is the same calculation formula as used for leased lines. The base unit is 100 Mb/s. The calculation formula is thus[...] where X is data transfer speed in Mb/s. Data transfer will be offered from 100 Mb/s in 100 Mb/s increments up to 1 Gb/s and from 1 to 8Gb/s in 1 Gb/s increments.

The leased line tariff uses exponents [...]. [...] In the leased line tariff the distance charge has a significant impact if added to the transmission speed. For example, according to the tariff now being reviewed by the PTA, the price difference for changing from 5 Gb/s to 6 Gb/s is about ISK 47,000 for a 120 km connection and increases incrementally. At 450 km the

difference in price is just under ISK 160,000. In these calculations the price difference in excess of 100 km is only ISK 43,000 (and does not change for longer routes) despite a higher exponent.

Exponents for varying data transfer speeds are as follows:

[...]"

"Overbooking

With this new service, Mila customers can for the first time lease burstable bandwidth (EIR) from Mila. This is for example done to handle peaks in data volume or data transfer which does not require a high level of assurance of delivery. This is for example an ideal solution for those who lease bandwidth for TV service where at certain hours there is little traffic that can however peak without warning for a short duration. This can also be economic for mobile phone services where the data volume can vary.

Mila will offer burstable bandwidth to a maximum of an equal amount to the guaranteed bandwidth on the connection in question but never exceeding 1 Gb/s.

The price for over-booking will be 10% of the tariff for guaranteed bandwidth."

2.7.1.1 Locations on the Fibre Optic Ring

In the Mila cost analysis dated 30 April 2014 the following is stated with respect to coefficients and line equivalents:

Coefficients between distances

Coefficient for distances are based on an incremental increase in price according to the length of the connection. There are 3 categories. The lowest category is for connections less than 50 km; the next category is for connections from 50 to 99 km while the 3rd category is for 100 km or more.

Mila has decided the coefficient for the shortest distance in the following manner:

[...]

Connections between locations that are greater than 100 km from each other are according to these calculations twice as expensive as connections that are within 50 km of each other. [...]"

"Line equivalent

As this is a new product it is not possible to calculate the price on the basis of status of existing connections. One therefore has to estimate the number. As the Mila tariffs normally apply for more than one year and as this is a new product, it is necessary to be forward-looking when the number of connections is estimated. The system is under development which means that not all locations have equipment installed from the outset.

It is assumed that connections that have greater data transfer speed than 2 Mb/s will migrate to the new product. [...]

Though Mila considers the time not yet right to offer a tariff independent of distances on the Fibre Optic Ring, the company considers this tariff to be a major step in that direction."

Line equivalents on the Fibre Optic Ring

"An estimate is made of the number of sold connections and ports on the Fibre Optic Ring."

"Estimated revenue from ports are deducted from the total cost of the system. The remainder is the basis for the price of connections."

*Line equivalent for the connection route is coefficient for distance*coefficient for speed.*

[...]

Allowance is made for the price for over-booking being 10% of the tariff for guaranteed bandwidth. [...]

In order to prevent customers from leasing low bandwidth and substantial over-booking, a ceiling is set on over-booking in such a manner that over-booking cannot exceed a maximum equivalent to leased bandwidth and never greater than 1 Gb/s. In addition to this the arrangement is that customers can lease a maximum of 8Gb/s on the same connection.

Calculated equivalents are based on the status of connections today and on estimated increase over the next 2 years. [...]"

"[...]"

The estimate of the number of connections is as follows:

[...]".

2.7.1.2 Locations outside the Fibre Optic Ring

Mila initially proposed that locations outside the Fibre Optic Ring would be divided into 6 regions each with a separate tariff. There was no allowance for varying coefficients for number of kilometres which meant that the tariff did not change according to the number of kilometres between locations within each region.

In a letter from Mila dated 30 October 2014, Mila submitted a new cost analysis for locations outside the Fibre Optic Ring in accordance with PTA observations. The following was stated in the letter:

"Mila has decided to divide the areas into 3 categories, connections from 0-19 km, connections from 20-49 km and connections of 50 km and greater. The price difference between the distances is up to 300%:

Category	Distance	Coefficient
1	0 -19	1
2	20 -49	2
3	50-	3

"

In a Mila reply to PTA queries with respect to coefficients for distances outside the Fibre Optic Ring dated 5 December 2014 the following was stated:

"[...]"

The Mila estimate allows for [...] ports being leased at locations outside the Fibre Optic Ring and the deduction of estimated annual revenue from ports of up to ISK [...] from total costs before the monthly charges for connections are calculated. Mila calculated line equivalents in a similar manner as on the Fibre Optic Ring with respect to coefficients for distance and speed. Mila also estimates over-booking. Mila estimates that line equivalents for connections at locations outside the Fibre Optic Ring are [...].

2.7.2 The position of the PTA

Mila uses the exponent [...] when calculating the coefficient for data transfer volume. [...] On the other hand however these tariffs are not structured in the same way. In the leased line tariff the number of kilometres has a greater effect on price as indicated by Mila.

The PTA accepts the Mila argument that the company endeavours to avoid a situation where the structure of the tariff constitutes an incentive to purchase bandwidth in excess of requirements which could result in uneconomical development of the system. It is not desirable from the point of view of efficiency to build a system with capacity far in excess of needs. The PTA conclusion is to use the exponent 0.4 in calculations of coefficients for data transfer volume.

The PTA considers it positive that there should now be data transfer connections on offer where the weighting of distance is reduced. In the opinion of the PTA, the methodology initially adopted by PTA for locations outside the Fibre Optic Ring was on the other hand not appropriate and that it was misleading to say that the tariff was independent of the number of kilometres as was stated by Mila. For example, according to Mila's first proposals, the monthly charge for a 100 Mb/s connection was ISK 89,000 in Snæfellsnes while the same kind of connection costs ISK 27,000 in Reykjanes. The reason for this was that lease of the fibre-optic, where cost is dependent on distance, is a very large part of the costs and the total number of kilometres within the Snæfellsnes region (as defined by Mila) was much larger than in the Reykjanes region while the number of equivalents was almost the same. This meant that connections were extremely expensive in Snæfellsnes compared with other regions. Furthermore this methodology, proposed by Mila at the outset, meant that it was unclear how future development would be in the event of the addition of new locations or potential new regions. Were new regions to be added they would need to be cost analysed separately. For this reason the PTA proposed that this methodology be discarded and that instead locations outside the Fibre Optic Ring would be amalgamated into one region and that coefficients would be adopted for varying distances in a similar manner to the methodology used by Mila for locations on the Fibre Optic Ring. Should Mila decide to add new locations then a tariff would be available for those locations.

The PTA makes no objections to the coefficients between distances used by Mila in calculations of line equivalents. As experience has not yet been gained of the adoption of Ethernet service, it is difficult to discern the impact of varying coefficients. For this reason it could be necessary to review the coefficients in the light of further experience of the development of this service.

The PTA makes no objections to Mila's calculations and conclusion on line equivalents. Line equivalents for locations on the Fibre Optic Ring are estimated at [...] and for locations outside the Fibre Optic Ring they are approximately [...].

2.8 Setup charge and conversion charge

2.8.1 Mila cost analysis

Mila proposes that the setup charge for these connections be ISK 96,000. In this connection Mila refers to the setup charge for high speed connections in the leased line tariff which is just over ISK 96,000. Mila points out that one does not necessarily always have to visit a location to install new connections.

Mila also proposes that the conversion charge from leased lines to Ethernet service be ISK 36,000.

Mila then refers to calculations of setup charges for leased lines which Mila submitted to the PTA on 3 October 2014 for the cost analysis of leased lines. It was stated there that the cost of installing a leased line was approximately ISK [...]. Mila allows for the same instalment cost for Ethernet service. [...]

Mila allows for [...] connections in the model. Mila estimates that the cost of installation is ISK [...], see the following:

[...]

In the Mila reply dated 5 December 2014 to a PTA query about the conversion charge the following was stated:

"[...]."

2.8.2 The position of the PTA

The PTA makes no objection to the Mila proposal for setup and conversion charges. The setup charges for Ethernet service are in accordance with setup charges for other high speed connections in the leased line tariff.

According to the above, the setup charge for Ethernet service will be ISK 96,000 and the conversion charge from leased line to Ethernet service will be ISK 36,000.

2.9 Total costs

Total costs per annum are made up of the Mila estimate for annual opex and the annual capital cost. The number of line equivalents used to calculate unit costs are based on the Mila estimate.

Figures for locations on the Fibre Optic Ring are based on the Mila cost analysis which was received by the Administration on 30 April 2014 while figures for locations outside the Fibre

Optic Ring are based on the Mila cost analysis which was received by the PTA on 5 December 2014.

2.9.1 Mila cost analysis

2.9.1.1 Locations on the Fibre Optic Ring

In the Mila cost analysis dated 30 April 2014 the following was stated with respect to total costs and calculations of unit prices for connections on the Fibre Optic Ring:

"The base price for a 100 Mb/s connection is as follows:

[...]

On the basis of the above specified criteria and calculations, the lease prices for connections in the countryside are as follows:

Price for port per month:

Speed	
1 Gb/s	7,000
10 Gb/s	35,000

Price for connections per month:

Distance		Mb/s								
(km)	Category	100	200	300	400	500	600	700	800	900
0 -50	1	52,608	69,417	81,640	91,597	100,148	107,725	114,576	120,862	126,693
50 -99	2	78,913	104,126	122,460	137,395	150,222	161,587	171,864	181,294	190,039
100-	3	105,217	138,834	163,280	183,193	200,296	215,450	229,152	241,725	253,386

Distance		Mb/s							
(km)	Category	1000	2000	3000	4000	5000	6000	7000	8000
0 -50	1	132,146	174,368	205,071	230,080	251,561	270,592	287,802	303,593
50 -99	2	198,220	261,552	307,606	345,120	377,341	405,889	431,704	455,389
100-	3	264,293	348,736	410,142	460,160	503,122	541,185	575,605	607,185

Price for over-booking per month:

Distance		Mb/s								
(km)	Category	100	200	300	400	500	600	700	800	900
0 -50	1	5,261	6,942	8,164	9,160	10,015	10,772	11,458	12,086	12,669
50 -99	2	7,891	10,413	12,246	13,739	15,022	16,159	17,186	18,129	19,004
100-	3	10,522	13,883	16,328	18,319	20,030	21,545	22,915	24,172	25,339

Distance (km)	Category	Mb/s							
		1000	2000	3000	4000	5000	6000	7000	8000
0 -50	1	13,215	17,437	20,507	23,008	25,156	27,059	28,780	30,359
50 -99	2	19,822	26,155	30,761	34,512	37,734	40,589	43,170	45,539
100-	3	26,429	34,874	41,014	46,016	50,312	54,118	57,560	60,719

Maximum over-booking is equal to leased bandwidth but never greater than 1 Gb/s."

2.9.1.2 Locations outside the Fibre Optic Ring

In the revised Mila cost analysis dated 5 December 2014 the Mila conclusion with respect to total cost and calculations of unit prices for connections outside the Fibre Optic Ring was as follows:

[...]

Mila conclusion of price calculations is as follows:

Speed	Category		
	1 0 -19	2 20 -49	3 50-
10	14,721	29,442	44,163
20	19,424	38,849	58,273
30	22,845	45,689	68,534
40	25,631	51,261	76,892
50	28,024	56,047	84,071
60	30,144	60,287	90,431
70	32,061	64,122	96,182
80	33,820	67,640	101,459
90	35,451	70,903	106,354
100	36,977	73,955	110,932
150	43,488	86,976	130,465
200	48,792	97,584	146,376
300	57,383	114,766	172,149
400	64,381	128,762	193,144
500	70,392	140,784	211,176
600	75,717	151,435	227,152
700	80,533	161,066	241,599
800	84,952	169,903	254,855
900	89,050	178,099	267,149
1000	92,883	185,766	278,648
2000	122,560	245,119	367,679
3000	144,140	288,280	432,419

2.9.2 The position of the PTA

The Mila conclusion on tariff for Ethernet service is broadly based on the methodology prescribed by the PTA with respect to other services. Amendments and observations from the Administration have been taken into account as is stated above.

2.9.2.1 Locations on the Fibre Optic Ring

The conclusion of the cost analysis is that total cost of the Ethernet service for locations on the Fibre Optic Ring is ISK [...]. It is estimated that this cost will be recouped with monthly charges for ports, total ISK [...] per annum and with monthly charges for connections, total ISK [...].

When calculating monthly charges for connections [...] line equivalents are used which means that the monthly price for a base unit is ISK [...].

The tariff for Ethernet service for locations on the Fibre Optic Ring will thus be:

Data transfer speed (Mb/s)	Monthly price (ISK)		
	0-49 km	50-99 km	100+ km
100	52,608	78,913	105,217
200	69,417	104,126	138,834
300	81,640	122,460	163,280
400	91,597	137,395	183,193
500	100,148	150,222	200,296
600	107,725	161,587	215,450
700	114,576	171,864	229,152
800	120,862	181,294	241,725
900	126,693	190,039	253,386
1000	132,146	198,220	264,293
2000	174,368	261,552	348,736
3000	205,071	307,606	410,142
4000	230,080	345,120	460,160
5000	251,561	377,341	503,122
6000	270,592	405,889	541,185
7000	287,802	431,704	575,605
8000	303,593	455,389	607,185

The above prices are on the basis of guaranteed bandwidth. The price for over-booking will be 10% of the tariff for guaranteed bandwidth.

2.9.2.2 Locations outside the Fibre Optic Ring

The conclusion of the cost analysis is that total cost of the Ethernet service for locations outside the Fibre Optic Ring is ISK [...]. It is estimated that this cost will be recouped with monthly charges for ports, total ISK [...] per annum and with monthly charges for connections, total ISK [...] per annum.

When calculating monthly charges for connections [...] line equivalents are used which means that the monthly price for a base unit is ISK [...].

The tariff for Ethernet service for locations on the Fibre Optic Ring will thus be:

Data transfer speed (Mb/s)	Monthly price (ISK)		
	0-19 km	20-49 km	50+ km
10	14,721	29,442	44,163
20	19,424	38,849	58,273
30	22,845	45,689	68,534
40	25,631	51,261	76,892
50	28,024	56,047	84,071
60	30,144	60,287	90,431
70	32,061	64,122	96,182
80	33,820	67,640	101,459
90	35,451	70,903	106,354
100	36,977	73,955	110,932
150	43,488	86,976	130,465
200	48,792	97,584	146,376
300	57,383	114,766	172,149
400	64,381	128,762	193,144
500	70,392	140,784	211,176
600	75,717	151,435	227,152
700	80,533	161,066	241,599
800	84,952	169,903	254,855
900	89,050	178,099	267,149
1000	92,883	185,766	278,648
2000	122,560	245,119	367,679
3000	144,140	288,280	432,419

The above prices are on the basis of guaranteed bandwidth. The price for over-booking will be 10% of the tariff for guaranteed bandwidth.

2.9.2.3 Coming into force

The provisions of chapter 3 in Mila's reference offer applies to the coming into force of the new tariff. There it is stated that Mila shall inform the service purchaser of amendments to the tariff with at least 60 days' notice. In this instance PTA considers it appropriate that the tariff change shall apply on the turn of a month and that the new tariff will come into force on the next turn of the month after the 60 days' notice has passed.

Currently, all PTA's decisions regarding tariff changes are subject to national consultation and consultation with ESA. As a result of this change in procedure the process time of PTA's price decisions prolonged considerably. This applies to the consultation time as well as the work involved in preparation for consultation, processing of the result of the consultation, translations, etc.

In order to take into account the interests of the parties to the market in question the PTA has allowed Mila to notify the service purchasers about the amendments to the tariff when PTA has

sent the draft decision formally to the ESA for consultation. The notification will apply as long as PTA's final decision will not alter the tariff from the draft decision. If the tariff in the final decision differs from the draft decision Mila shall notify the service purchaser of the new amendments to the tariff with the same notice as stated here above.

The Decision

The Post and Telecom Administration (PTA) endorses the Mila ehf. cost analysis for Ethernet service as last updated on 5 December 2014 in accordance with the requirements of the Administration.

Setup charges and price per month for leasing shall be in accordance with Appendix I to this Decision.

The provisions of chapter 3 in Mila's reference offer applies to the coming into force of the new tariff. There it is stated that Mila shall inform the service purchaser of amendments to the tariff with at least 60 days' notice. In this instance PTA considers it appropriate that the tariff change shall apply on the turn of a month and that the new tariff will come into force on the next turn of the month after the 60 days' notice has passed. Mila may notify the service purchasers about the amendments to the tariff when PTA has sent the draft decision formally to the EFTA Surveillance Authority (ESA) for consultation. The notification will apply as long as PTA's final decision will not alter the tariff from the draft decision. If the tariff in the final decision differs from the draft decision Mila shall notify the service purchaser of the new amendments to the tariff with the same notice as stated here above.

Mila shall further develop this service in line with fair, normal and reasonable wishes and requirements of the company's customers. Mila shall assure full non-discrimination between electronic communications companies in this development, among other things with respect to the decision on further distribution of the service. In this respect it is reasonable that the main consideration will first and foremost be efficiency and demand for services in various regions. The tariff applies to the places specified in this decision and new places that will be added by Mila.

The new tariff replaces the temporary prices set in the PTA Decision no. 15/2014. In accordance with PTA Decision no. 15/2014 a settlement of a possible difference in price shall take place no later than one month after the new tariff comes into force.

The new Mila ehf. tariff shall be part of the company's reference offer for Ethernet service.

This decision can be appealed to the Appellate Committee for Electronic Communications and Postal Affairs, see Article 13 of Act no. 69/2003 on the Post and Telecom Administration. The appeal shall have reached the Appellate Committee four weeks from the time that the party in question became aware of the Decision of the Post and Telecom Administration. Costs for an appeal are according to Paragraph 5 of Article 13 of the same Act, and in addition to this there is a special appeal charge to the amount of ISK 150,000, pursuant to Article 6 of Regulation no. 36/2009 on the Appellate Committee for Electronic Communications and Postal Affairs.

Reykjavík, XX, XX2015

Hrafnkell V. Gíslason

Óskar Þórðarson

Appendix I: Tariff for Ethernet service
Appendix II: Results of the national consultation