



PÓST- OG FJARSKIPTASTOFNUN

Decision no. xx/2021

**Review of the Míla wholesale tariff for
trunk segments of leased lines
(previously Market 14)**

Case number: 2019020057

26 March 2021

TABLE OF CONTENTS

	page
1 Introduction.....	3
1.1 PTA Decision no. 21/2015	3
1.2 PTA decisions currently in force on wholesale tariffs on market 14/2004	6
1.2.1 Míla wholesale tariff for trunk segments of leased lines.....	6
1.2.2 Míla wholesale tariff for Ethernet service.....	8
1.2.3 Míla wholesale tariff for temporary connections	10
1.2.4 Míla wholesale tariff for Metropolitan Data Highway.....	11
1.3 Facts of the case.....	12
2 General	14
3 Weighted average cost of capital	14
4 Cost analysis for trunk segments of leased lines	14
4.1 Cost model structure	14
4.2 Capex.....	16
4.2.1 Míla cost analysis	16
4.2.2 The position of the PTA	17
4.3 Opex.....	18
4.3.1 Míla cost analysis	18
4.3.2 The position of the PTA	19
4.4 Total costs and calculation of unit prices	20
4.4.1 Míla cost analysis	20
4.4.2 The position of the PTA	21
5 Tariff for 100 Gb/s on the Fibre Optic Ring	22
5.1 Míla tariff.....	22
5.2 The position of the PTA	27
6 The PTA conclusion	28

1 Introduction

- (1) Míla ehf. cost analysis (Míla) for trunk segments of leased lines here under discussion is based on the obligations imposed on the company with the Decision of the Post and Telecom Administration (PTA) no. 21/2015, 12 August 2015, on the designation of a company with significant market power and on the imposition of obligations on the wholesale market for trunk segments of leased lines.
- (2) The Míla products dealt with in this cost analysis are leased lines, fibre-optic lines, MDH (Metropolitan Data Highway), Ethernet service (MPLS-TP) and temporary connections. The price for TV and radio channels is also discussed, but this service is no longer offered by Míla for new connections. These products 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 (Market 14/2004).
- (3) The PTA opened a national consultation on the preliminary draft to the Decision here under discussion on 29 October and the consultation ran until 13 November 2020. Comments were received from Nova hf. (Nova) and Gagnaveita Reykjavíkur (GR) and are specified in Appendix III together with Míla's response and the PTA position.
- (4) The following Sections cover the legal grounds, methodology and calculations that led to the PTA conclusion. The text of the Draft Decision describes the intended PTA position which can be subject to amendment until the final Decision is made, among other things as a result of comments from stakeholders. The wording of the Draft should be read with this in mind.

1.1 PTA Decision no. 21/2015

- (5) On 12 August 2015 the PTA made Decision no. 21/2015 on the designation of companies with significant market power and on the imposition of obligations on the wholesale market for trunk segments of leased lines (Market 14/2004).
- (6) The PTA has come to the conclusion that the definition of Market 14 to be found in the ESA Recommendation¹ 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 14/2004).
- (7) With the authority of Article 32 of the Electronic Communications Act the PTA imposed the obligation on Míla for a cost oriented wholesale tariff for trunk segments of the company's leased lines. When deciding prices for terminating segments of leased lines, the cost analysis

¹ See the EFTA Surveillance Authority recommendation on the relevant markets from 14 July 2004.

methodology shall be used which is based on historical costs allocated to the relevant service (HCA FAC).

(8) When implementing its cost analysis Míla shall base its methodology on Chapter IV of Regulation no. 564/2011 on bookkeeping and cost analysis in the operations of electronic communications companies, such as on evaluation of operational assets, useful life and ROI requirement. Furthermore, account shall be taken of the PTA position on criteria and calculations in the PTA Decision no. 14/2011 with respect to cost analysis for trunk segments of leased lines.

(9) If the Míla cost analysis for trunk segments of leased lines returns a conclusion that the PTA considers unacceptable when one considers price development, the PTA can require a review of that conclusion. The Administration will in such instances request that Míla review the criteria used for evaluating the investments needed to provide the service in question, in order to return a conclusion which harmonises with the views and objectives of the EU Commission with respect to supporting competition and improving the investment environment on the electronic communications market.

(10) The Míla cost analysis for wholesale tariff for trunk segments of leased lines shall be based on the following main criteria:

- Allocation of costs shall be based on separation of accountancy for the trunk line network, on Míla asset bookkeeping and on costs from Míla's bookkeeping system where operational costs are entered in bookkeeping accounts.
- The cost base shall be Míla historical costs (HCA).
- Operational costs shall be based on the preceding financial year in each instance. The methodology shall be based on allocating all costs to the service in question (FAC).
- When evaluating investments for leased lines, the reference shall be indexed booked cost 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.
- The annuity method shall be used to calculate annual investment costs.
- The cost of the trunk line network shall be captured, including share of common costs, management, IT and senior management in accordance with separation of accountancy.

- The required rate of return used shall be based on weighted average cost of capital² (WACC real) from capital tied in assets used in connection with provision of service where the risk premium reflects the risk related to operations on the relevant market.
- The number of lines shall be calculated taking into account line equivalents. In assessment of line equivalent coefficients 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 connection routes, shall be calculated from allocated operational and investment costs divided by number of lines or their line equivalents.

(11) 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.

(12) Mila is authorised to offer regional tariffs if those are based on cost reference and if there is non-discrimination between parties.

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

- They shall be based on costs and on objective criteria such as distance and capacity.
- They shall take into account all service items included in the relevant service.
- They shall in general be divided into: Setup 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.

(14) It was stated in the Decision that the Mila tariff for leased lines is now generally divided into setup charge, subscription charge per month and kilometre charge per month. Exceptions to this rule are that the lease of dark fibre is based solely on a setup charge and the distance charge (divided into urban and rural) and the tariff for Metropolitan Data Highway (MDH) is

² In accordance with Article 16 of Regulation no. 564/2011 the PTA decides on an annual basis the weighted average cost of capital (WACC) which electronic communications companies shall use as a reference in their calculations.

based on a setup charge and then a subscription charge per month. The PTA considers that Mila should in the coming years aim towards amendments in its tariffs such that there will only be a price for a subscription charge per month independent of distance where possible and based on capacity and on the service items included in the service in question.

(15) It was then prescribed that the new wholesale tariffs for trunk segments of leased lines would not come into force prior to endorsement by the PTA subsequent to national consultation and consultation with ESA in each instance.

(16) Concurrently with the Decision of the PTA no. 21/2015, decisions were published by the Administration on wholesale tariffs on the relevant market, i.e. PTA Decisions nos. 22, 23, 24 and 25/2015.

1.2 PTA decisions currently in force on wholesale tariffs on market 14/2004

(17) The existing Mila tariff for the trunk line market is based on the following PTA decisions:

- PTA Decision no. 8/2018, Review of Mila wholesale tariff for trunk segments of leased lines dated 29 May 2018.
- PTA Decision no. 26/2019 on, Mila wholesale tariff for 100 Gb/s MDH connections on the market for trunk segments of leased lines dated 19 November 2019.

1.2.1 Mila wholesale tariff for trunk segments of leased lines

(18) The following table shows the Mila tariff for trunk segments of leased lines pursuant to the PTA Decision no. 8/2018:



<i>Service product</i>	<i>Price ISK line</i>	<i>Price ISK km.</i>	<i>Service product</i>	<i>Price ISK line</i>	<i>Price ISK km.</i>
64 kb/s	3,331	112	Ethernet 2 Mb/s	15,676	527
64 kb/s, protected connection	4,996	168	Ethernet 4 Mb/s	21,414	720
128 kb/s	4,550	153	Ethernet 6 Mb/s	25,700	864
128 kb/s, protected connection	6,825	230	Ethernet 10 Mb/s	32,342	1,088
256 kb/s	6,215	209	Ethernet 20 Mb/s	35,094	1,180
256 kb/s, protected connection	9,323	314	Ethernet 26 Mb/s	38,469	1,294
512 kb/s	8,491	286	Ethernet 28 Mb/s	39,480	1,328
512 kb/s, protected connection	12,736	428	Ethernet 30 Mb/s	40,445	1,360
2 Mb/s	15,676	527	Ethernet 40 Mb/s	44,729	1,504
2 Mb/s, protected connection	19,595	659	Ethernet 46 Mb/s	46,971	1,580
2 Mb/s interconnection feeds	7,838	527	Ethernet 48 Mb/s	47,676	1,604
45 Mb/s	46,611	1,568	Ethernet 50 Mb/s	48,362	1,627
45 Mb/s, protected connection	69,917	2,352	Ethernet 60 Mb/s	51,549	1,734
155 Mb/s	65,872	2,216	Ethernet 80 Mb/s	57,010	1,918
622 Mb/s	104,193	3,505	Ethernet 100 Mb/s	57,002	1,917
2,5 Gb/s	388,005	13,051	Ethernet 150 Mb/s	65,163	2,192
			Ethernet 200 Mb/s	71,652	2,410
Fibre-optic, one pair rural		8,645	Ethernet 300 Mb/s	81,910	2,755
Fibre-optic, one pair urban		20,301	Ethernet 400 Mb/s	90,067	3,029
Fibre-optic, one thread rural		7,363	Ethernet 0.5 Mb/s	96,950	3,261
Fibre-optic, one thread urban		17,290	Ethernet 1 Gb/s	121,868	4,099
			Ethernet 2 Gb/s	153,189	5,153
			Ethernet 3 Gb/s	175,121	5,890
			Ethernet 4 Gb/s	192,561	6,477
			Ethernet 5 Gb/s	207,276	6,972
			Ethernet 6 Gb/s	220,129	7,404
			Ethernet 7 Gb/s	231,617	7,790
			Ethernet 8 Gb/s	242,052	8,141
			Ethernet 9 Gb/s	251,645	8,464
			Ethernet 10 Gb/s	260,548	8,764

(19) The above tariff will be based on geodesic distance between endpoints of trunk lines on the cable path in question. The distance is to be measured as the shortest distance between the locations that the line reaches.

(20) Other charges for trunk segments of leased lines are:

- Setup charge: ISK 96,386.
- Transfer charge: ISK 48,193.

- Change of speed: ISK 28,164.

1.2.2 Mila wholesale tariff for Ethernet service

(21) According to PTA Decision no. 8/2018, Mila is authorised to collect the following charges for its Ethernet service (MPLS-TP):

Monthly charge

Price for connection

Locations on the Fibre-optic Ring

Data transfer speed (Mb/s)	Monthly price (ISK)		
	0-49 km	50-99 km	100+ km
100	51,983	77,975	103,967
200	68,592	102,889	137,185
300	80,670	121,005	161,340
400	90,508	135,762	181,016
500	98,958	148,437	197,916
600	106,445	159,667	212,890
700	113,215	169,822	226,429
800	119,426	179,139	238,852
900	125,187	187,781	250,375
1,000	130,576	195,864	261,152
2,000	172,296	258,444	344,592
3,000	202,634	303,951	405,268
4,000	227,346	341,019	454,692
5,000	248,572	372,858	497,144
6,000	267,377	401,066	534,754
7,000	284,383	426,574	568,765
8,000	299,985	449,978	599,970
9,000	314,457	471,685	628,913
10,000	327,992	491,989	655,985

*Locations not on the Fibre-optic Ring*

Data transfer speed (Mb/s)	Monthly price (ISK)			
	0-19 km	20-49 km	50-84 km	85+ km
10	15,334	30,669	46,003	61,338
20	20,234	40,468	60,701	80,935
30	23,797	47,593	71,390	95,186
40	26,699	53,397	80,096	106,795
50	29,191	58,383	87,574	116,765
60	31,400	62,800	94,199	125,599
70	33,397	66,794	100,191	133,587
80	35,229	70,458	105,687	140,917
90	36,929	73,857	110,786	147,715
100	38,518	77,036	115,555	154,073
150	45,300	90,601	135,901	181,202
200	50,825	101,650	152,475	203,300
300	59,774	119,549	179,323	239,097
400	67,064	134,128	201,192	268,256
500	73,325	146,651	219,976	293,301
600	78,873	157,745	236,618	315,491
700	83,889	167,778	251,667	335,556
800	88,492	176,983	265,475	353,966
900	92,761	185,521	278,282	371,042
1,000	96,753	193,507	290,260	387,014
2,000	127,667	255,334	383,001	510,667
3,000	150,146	300,293	450,439	600,585
4,000	168,457	336,915	505,372	673,830
5,000	184,185	368,370	552,555	736,740
6,000	198,119	396,238	594,358	792,477
7,000	210,720	421,440	632,159	842,879
8,000	222,281	444,562	666,843	889,124
9,000	233,004	466,008	699,012	932,016
10,000	243,034	486,067	729,101	972,134

Price for port

Data transfer speed	Monthly price (ISK)
1 Gb/s	7,000
10 Gb/s	35,000

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

Sync – Ethernet

(23) Monthly price for Sync-Ethernet: ISK 313.

Other charges

(24) Other charges for Ethernet service are:

- Setup charge: ISK 96,000.
- The conversion fee from leased lines to Ethernet service is ISK 36,000. ISK 36,000.

1.2.3 Mila wholesale tariff for temporary connections

(25) According to PTA Decision no. 8/2018, Mila is authorised to collect the following charges for temporary connections:

Temporary connections for individual transmissions from specific locations

	Capital City	Countryside (ISK)		
	Area (ISK)	0-49 km	50-99 km	100+ km
First 24 hours	62,122	121,375	161,062	200,750
Per day in excess of 1	12,849	31,750	47,625	63,500
Order within 10 working days	36,000	36,000	36,000	36,000
Order within 2 working days	60,000	60,000	60,000	60,000

Agreements on transmissions at specific locations

	Capital City	Countryside (ISK)		
	Area (ISK)	0-49 km	50-99 km	100+ km
First transmission per connection location	40,098	82,700	114,450	146,200
Each additional transmission	10,279	25,400	38,100	50,800

Other temporary connections

Price for first-day	Capital City	Countryside (ISK)		
	Area (ISK)	0-49 km	50-99 km	100+ km
Ethernet 30 Mb/s	111,722	122,650	135,782	148,914
Ethernet 150 Mb/s	121,094	138,701	159,859	181,016
Fibre-optic lines	128,508	175,761	215,448	255,136



Price for additional day	Capital City	Countryside (ISK)		
	Area (ISK)	0-49 km	50-99 km	100+ km
Ethernet 30 Mb/s	6,134	10,506	15,758	21,011
Ethernet 150 Mb/s	9,883	16,926	25,389	33,852
Fibre-optic lines	19,276	26,364	32,317	38,270

(26) If implementation cost for these connections exceeds ISK 100,000, Mila will collect the difference separately.

1.2.4 Mila wholesale tariff for Metropolitan Data Highway

(27) According to PTA Decision no. 8/2018 and 2018/2019, the Mila tariff for Metropolitan Data Highway connection is as follows:

Monthly price for MDH connections

Data transfer- speed	Monthly price < 50 km (ISK)	Monthly price ≥100 km (ISK)
1 Gb/s	63,791	-
10 Gb/s	105,830	-
100 Gb/s	424,404	848,808

(28) Setup charge ISK is 107,000 per connection.

1.3 Facts of the case

(29) In the PTA Decision no. 8/2018, Review of Mila wholesale tariff for trunk segments of leased lines dated 29 May 2018, it was stated that Mila was obliged to submit a revised cost analysis for leased lines, no later than 1 April 2019.

(30) In an email from Mila to the PTA dated 06 February 2019, Mila submitted a plan for delivery of available cost analyses. According to the plan, Mila intended to submit cost analysis for trunk segments of leased lines by 1 July 2019. In an email to Mila dated 8 February 2019, the PTA endorsed the Mila plan for delivery of cost analyses.

(31) In an email from Mila to the PTA dated 13 June 2019, Mila requested postponement to submit the cost analysis for the trunk line network until 1 September 2019, because of pressure of work [...] ³. On the 14 June 2019, the PTA accepted Mila's request for postponement.

(32) On 2 September 2019, Mila requested an additional postponement until the end of September, which was granted by the PTA.

(33) On 3 October 2019, Mila submitted cost analysis for leased lines, fibre-optic, MDH, Ethernet service (MPLS-TP), temporary connections and TV and radio channels.

(34) The PTA and Mila exchanged a number of emails in January 2020 where the impact of changes on customers, number of connections, 100 Gb/s connections, the weighting of kilometres in the tariff and calculations in the cost model were discussed. There is more detailed discussion on these issues in the appropriate sections here below.

(35) On 16 January 2020, Mila submitted an revised cost analysis where the improvements were taken into account that were made in accordance with comments from the PTA.

(36) On 7 February 2020, Mila submitted a cost model for 100 Gb/s on the fibre-optic ring.

(37) On 27 May, Mila requested the addition of 1.5 Gb/s for Ethernet service outside the fibre-optic ring. The price was calculated in the same manner as other speed categories.

(38) In the mail dated 22 September 2020, the PTA requested a more detailed breakdown of investments in equipment. Mila submitted this information in an email dated 24 September 2020.

(39) On 21 October 2020, the PTA requested explanations for the price difference between 100 Gb/s MDH and 100 Gb/s Ethernet connections on the fibre-optic ring. The reply came from Mila on 26 October 2020, see further in section 5.1 here below. Then Mila requested that it

³ The [...] indicates that the text included confidential information.



could offer 1 Gb/s, MDH connections to the data centre at Blönduós, i.e. at twice the price for connections under 50 km.

(40) As stated in Annex III, comments from GR and Nova were submitted in a national consultation and by letter dated, 1 December 2020, Mila responded to the comments received. In its response, Mila proposed a change in distance categories for 100 Gb/s (as well as for 25 Gb/s and 50 Gb/s), see discussion in section 5 below.

(41) Following comments in the national consultation on Mila's agreements with Farice ehf. the PTA also sent an inquiry to Farice and Mila regarding their agreement. The result of that correspondence was that the PTA does not consider it necessary to change the Mila tariff for 100 Gb/s connections.

(42) After an inquiry from ESA, PTA requested an additional information on volumes and a division of the investment cost into legacy and Ethernet services from Mila in an mail, dated 10 March 2021. In a mail, dated 12 March 2021 Mila provided the requested information in an Excel file and on 31 March 2021 Mila provided a corrected version of the file.

2 General

(44) In the sections here below one can find the criteria and conclusions of the PTA on the cost analysis here under discussion. Discussion on the cost analysis is divided into sections according to Mila services on this market. For each service there is discussion on the main aspects that the PTA considers important as criteria for the position taken by the Administration on tariff calculations for the service in question. The factors in question are the following:

1. Opex
2. Capex
3. Total costs and calculation of tariff increases.

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

(46) The same rate of return is used for all Mila services.

3 Weighted average cost of capital

(47) In its calculations, Mila allows for 6.9% weighted average cost of capital (WACC) for the year 2018. This is consistent with the PTA recommendation, and in this connection references made to Appendix I. On 6 November 2019 the Commission issued a Notice on the calculation of the cost on capital for legacy infrastructure (2019 / C 375/01). The current draft decision falls under the transitional period mentioned in recital 71 of the Notice but the PTA expects to follow the Notice more closely at the next price review in 2022.

4 Cost analysis for trunk segments of leased lines

4.1 Cost model structure

(48) Mila requested a change of methodology for calculating tariff for the company's trunk line network. Mila considered it appropriate to retain the same tariff structure and to have equal changes to all monthly charges on the trunk line network. The calculation of the cost base is as before and in all significant aspects based on the same methodology as in previous analyses.

(49) Mila arguments are as follows:

“The base layer of all service provided by Mila on this market is fibre-optic, which is deployed around the whole country, to the West Fjords and to other locations in the country.

In addition to this, Mila has wireless systems where fibre-optic is not available. On the Fibre Optic Ring there are also dense wavelength division multiplexing (DWDM) systems. By far the largest part of costs for service provided by Mila's in fibre-optic, DWDM systems, wireless and control network in this base layer is used for all Mila trunk line network services. In addition to this, when renewing old SDH equipment, the practice is normally to purchase equipment that can be used for MPLS-TP service (used by Ethernet service) and for SDH (that is used by traditional leased lines).

When cost analysing Ethernet service and MDH, the lease of a fibre pair has been allowed for, rather than a share of the base layer. Dividing costs between service items can be very much a matter of judgement, as for example, the same fibre pair may often be used for leased lines and Ethernet service. From the time that Ethernet service was offered, in 2014, until the end of 2018, income from traditional leased lines has dropped by about ISK [...] million per month to about ISK [...] million, while against this, income from Ethernet service is now about ISK [...] million per month. Traditional leased lines are on the decline with Mila where Ethernet service is offered.

The PTA has now endorsed a specific structure for tariff for leased lines, Ethernet service and MDH and this structure has worked well for customers. In recent years, customers have reduced the number of connections, while on the other hand they have purchased greater data volume at the similar price, and in addition to this there has been migration from traditional leased lines to Ethernet service. In the opinion of Mila, this is a very positive development, both for Mila and the company's customers.

If, Mila submits an analysis using the same methodology as before, this will lead to significant price increases for some service items while others will decrease in price. In the opinion of Mila, this is unfortunate as these products use the same base layer, and even the same equipment.

It is in the opinion of Mila, negative for customers that there should be significant fluctuations in tariffs, as the use of leased lines to develop their own systems."

(50) For this reason, in this cost analysis for Mila trunk line product prices increase equally. Price changes are however not foreseen for one-time charges, Sync-Ethernet, ports and special agreements, for example, with Farice, the Ministry of Foreign Affairs and other parties.

(51) Mila also provided information about the development of number of connections and average Mb/s sold per month for the years 2016-2018, divided into Ethernet service and leased lines. The result is summed up in the following table:

Year	Average number of connection per month	Average Mb/s per month
2016	[...]	[...]
2017	[...]	[...]
2018	[...]	[...]

4.2 Capex

4.2.1 Mila cost analysis

(52) Mila states that the historical initial costs should be indexed in the same manner as in previous analyses. Changes however made from the prior analysis to the effect that all MPLS-TP equipment has an 8 year useful life. In previous analyses, the investment base for this equipment was divided between traditional leased lines and Ethernet service, where the part belonging to Ethernet service was evaluated as having an 8 year useful life while the part that belong to SDH was estimated as having a 6.67 year useful life. Mila considers there to be no reason to divide this equipment in this manner and now uses an 8 year useful life for the equipment.

The following table shows the investment cost, indexed to the year 2018: [...]

(53) The conclusion of calculations is that the investment base is as follows:

	Investment cost	Annuity
Fibre-optic.....	[...]	[...]
MPLS-TP.....	[...]	[...]
MDH.....	[...]	[...]
Equipment.....	[...]	[...]
Control network.....	[...]	[...]
Wireless.....	[...]	[...]
Connections.....	[...]	[...]
	[...]	[...]

(54) Indexed investment cost is according to this ISK [...].

(55) Annual capital costs are ISK [...].

(56) According to Míla the MPLS-TP equipment is used for both Ethernet services and traditional leased lines. Míla does no longer invest in SDH equipment, when upgrading equipment where the Ethernet service product is not available, the same equipment is installed. Although the number of connections is decreasing, the volume of data transfer is increasing. When renewing equipment at a specific location, it does not matter if the number of connections

decreases except to a limited extent. This is a central equipment that can serve from one connection to a certain number of connections. As Iceland is a sparsely populated country, the connections are not many and therefore lower investment costs are not achieved to the same extent as in more densely populated areas. The following table show the annuities divided between legacy services and Ethernet services:

Annuity	
Fibre optic	[...]
Ethernet service	[...]
Legacy	[...]
Other	[...]
Total	[...]

(57) Mila points out that the investment base increases by just over ISK [...] million while the annuity on investments nevertheless decreases by approximately ISK [...] thousand. The historical initial cost for fibre-optic increases by about ISK [...] million while against this, equipment, decreases by about ISK [...] million, with the biggest reduction in microwave equipment and MDH. As the useful life of fibre-optic is 35 years and the useful life of equipment is 5-10 years, there will be a reduction in annuity on investments.

Other tied capital

(58) Mila states that in prior analyses, equipment in Mila stocks had not been taken into account, and there is significant value in stocks. In the opinion of Mila, it is normal to calculate the cost of capital tied in stocks, which is part of costs for the trunk line network. In the year 2018, the average price of equipment was ISK [...] million:

	31/12/2017	31/12/2018	Average status	Annuity
Spare parts.....	[...]	[...]	[...]	[...]
Other material in stock.	[...]	[...]	[...]	[...]
	[...]	[...]	[...]	[...]

(59) Calculation of capital tied in stock is according to Mila ISK [...] million. Allowance is not made for depreciation of spare parts stock in these calculations.

4.2.2 The position of the PTA

(60) The PTA has compared Mila investments with the last cost analysis. The PTA particularly examined the years 2017 and 2018, which have been added since the last analysis. For the sake of comparison, the PTA also has data on separation of accountancy which Mila provided for these years.

(61) In an email dated 15 January 2020, the PTA requested correction of Mila calculations of annuity on investments. In a revised Mila cost analysis dated 16 January 2020, the calculations were corrected.

(62) On 22 September 2020, the PTA requested a more detailed breakdown of investments in MPLS-TP and other equipment, in the light of varying years of useful life. On 24 September 2020, Mila submitted an Excel document which gave more detailed information about investments in equipment and about the division between MPLS-TP and other equipment. Given the information provided there, the PTA made no objections to the investments categorised with MPLS-TP and that have an 8 year useful life.

(63) In the light of the above the PTA makes no objections to the Mila capex. The PTA therefore agrees that adjusted capex is ISK [...] and that annuity on investments is ISK [...].

4.3 Opex

4.3.1 Mila cost analysis

(64) In the Mila cost analysis, the following table shows opex for the year 2018 and comparison with opex for 2017 and 2016.

	2018	2017	2016	Changes 2016-8
Fibre-optic.....	[...]	[...]	[...]	[...]
Equipment.....	[...]	[...]	[...]	[...]
Control network.....	[...]	[...]	[...]	[...]
Wireless.....	[...]	[...]	[...]	[...]
Connections.....	[...]	[...]	[...]	[...]
Senior management and support department costs.	[...]	[...]	[...]	[...]
	[...]	[...]	[...]	[...]

(65) As can be seen in the table here above, costs, increase by about [...] % between the years 2016 to 2018.

(66) The following was stated in the explanatory text to the Mila cost analysis:

“Opex increases less than price levels, for the same period the consumer price index increased by 4.6%. Senior management costs increased by about [...] % which equates to approximately ISK [...] million, while against this costs for connections decreased by about ISK [...] million. Lower costs for connections against higher senior management costs can be attributed to the fact that employees have not delegated their work as much in 2018 as they did in 2016, but in 2016 substantial profits were generated by a number of departments where employees had sold too much of the work to operational units. This meant that senior

management costs for these departments were negative for the trunk line network in the year 2016.

Costs for microwaves increased significantly during the years 2016 to 2018. The increase can be attributed to more transferred work to microwaves. The rental cost is ISK [...] million higher in 2018 than in 2016, which can be attributed to the fact that in 2016 rental cost from previous years was credited. The rental cost is in fact lower in 2018 than in 2016.

Opex is divided in the following manner into cost categories:

	2018	2016	Change
Cost price of sold services.....	[...]	[...]	[...]
Office and management costs.....	[...]	[...]	[...]
Sales and marketing costs.....	[...]	[...]	[...]
Housing costs.....	[...]	[...]	[...]
Access to 48 V.....	[...]	[...]	[...]
Internal work and transport....	[...]	[...]	[...]
Hosting.....	[...]	[...]	[...]
Senior management and support departments.....	[...]	[...]	[...]
Other costs.....	[...]	[...]	[...]
	[...]	[...]	[...]

Rental cost increased by about ISK [...] million between the years 2016 and 2018. As stated here above, rental cost that had been overcharged during prior periods was credited in 2016. Rental cost has in reality decreased since 2016.

When one considers internal work and transport on the one hand and senior management and support departments on the other, here are increases of ISK [...] million, from ISK [...] million to ISK [...] million. The increase is [...]%. At the same time the consumer wage index increased by approximately 13%. One could say that there is a real reduction in costs here.”

4.3.2 The position of the PTA

(67) Opex is based on Mila's real costs for the trunk line network for 2018. As stated by Mila, opex has increased less than indices have increased. It varies between types of service, whether the number of sold units have increased or decreased. There is a decrease in traditional trunk lines while there is an increase in Ethernet service. As can be seen in Mila's table in chapter 4.1, the number of connections sold have decreased from 2016 to 2018. Operation cost per unit sold has therefore increased. On the other hand the average Mb/s sold have increased from 2016 to 2018 and the operation cost per Mb/s has decreased over this period.

(68) The PTA makes no objections to Mila opex. The conclusion is that opex for the year 2018 is about ISK [...] million. Of this, senior management and support department costs are about ISK [...] million.

4.4 Total costs and calculation of unit prices

4.4.1 Mila cost analysis⁴

(69) It was stated in the Mila cost analysis that the total cost for calculation of the lease price for leased lines and for fibre-optic in the trunk network was as follows:

(70) Opex is ISK [...] not counting senior management costs. Senior management costs were divided in the same proportion as the total opex and annuity on investments. Total costs for trunk line network therefore amounted to ISK [...]. In the cost analysis that was endorsed in 2018, total costs amounted to ISK [...] of which costs had been reduced by approximately ISK [...] million, as it had been hoped that Mila would achieve cost economies. The actual costs between the years 2016 and 2018 increased by about [...], ([...] if capital tied in stocks is not included). If the ISK [...] million was deducted from the actual costs, the increase would be [...]. At the same time prices increased by about 4.5%. It was therefore clear that in 2018, the cost economies that had been allowed for were not achieved but there was nevertheless a real reduction in costs.

(71) It was stated by Mila that revenue which would not be subject to price changes was deducted from costs. Other costs amounted to ISK [...] million, of which ISK [...] million were operation agreements, ISK [...] million were agreements on short-term connections and revenue from cross connects and multiplexing was ISK [...] million. Having deducted the above revenue, costs for calculation of the Mila tariff would be ISK [...].

(72) When calculating an increase in lease price, Mila uses revenue in December 2018 on an annual basis. Mila monthly revenue was ISK [...], or ISK [...] on an annual basis. The tariff for the Mila trunk network therefore needed to be increased by about 2.59% to achieve annual revenue of ISK [...].

(73) Calculations allow for the price of a 100 Gb/s MDH increasing by approximately 2,59% from the prior tariff⁵, and the price for MDH for a data centre at Blönduós would be twice as high for a 100 Gb/s MDH which is less than 100 km.

⁴ In this text from Mila, numbers have been corrected in accordance with the corrected cost analysis.

⁵ Prior to increase, pursuant to PTA Decision no. 26/2019.

4.4.2 The position of the PTA

(74) As stated here above, Mila proposes that the methodology for calculating a tariff for the companies trunk line network be changed. Mila considers it appropriate that the structure of the tariff be unchanged and that the main monthly charges on the trunk line network change equally. Calculations for the cost base are nevertheless based in all significant aspects on the same methodology as in previous analyses.

(75) As Mila points out, businesses being moved from traditional leased lines to Ethernet service. There is a risk that the structure of the tariff will be disrupted if each service is calculated separately, as the line equivalents decreased in some service items but increase on the other hand for other service items. Then there is always the question of how to divide costs between service items.

(76) The following table shows the development of connections and average Mb/s sold per month for the year 2016-2018, divided into Ethernet service and traditional leased lines:

Year	Average number of connection per month			Average Mb/s per month		
	Ethernet service	Leased lines	Total	Ethernet service	Leased lines	Total
2016	[...]	[...]	[...]	[...]	[...]	[...]
2017	[...]	[...]	[...]	[...]	[...]	[...]
2018	[...]	[...]	[...]	[...]	[...]	[...]

(77) As can be seen in the table the sales in traditional leased lines are decreasing, both in average number of connections and in Mb/s while the opposite is true for the Ethernet service. In total the average number of connections are decreasing while the Mb/s is increasing.

(78) In the light of the above the PTA makes no objections to the tariff increasing proportionately. The PTA however proposed that the weighting of kilometres be reduced against the fixed charge in leased lines, such that instead of a flat increase the kilometre dependent prices would increase less and in turn, the fixed charge would increase more. Mila was not prepared to embark on this change at that point in time. One can however note that the kilometre weighting has, to some extent decreased with the advent of Mila Ethernet service (MPLS-TP), where distance categories are used instead of kilometres.

(79) The PTA therefore agrees that the monthly charges in the Mila tariff on the trunk line market increase by 2.59%. The increase therefore does not cover one-off charges, monthly charges for Sync-Ethernet and for ports and special agreements. However, the PTA considers it appropriate that in the next revision of the tariff in this market, the cost model will be reviewed in its entirety. Then it will probably be clearer how the demand has developed for the new

products that Mila has been adding to its service offering. Mila shall submit a revised cost model to the PTA no later than 1 April 2022⁶. The cost model shall be in accordance with the criteria set in PTA's Decision no. 21/2015, dated 12 August 2015.

5 Tariff for 100 Gb/s on the Fibre Optic Ring

5.1 Mila tariff

(80) On 7 February 2020, Mila submitted a proposal for 100 Gb/s connections on the Fibre Optic Ring.

(81) The following was stated in a letter from Mila:

Mila customers have now increasingly requested that Mila offer 100 Gb/s on the Fibre Optic Ring. Mila has examined this possibility and is interested in offering 100 Gb/s from Mila technical spaces at the following locations:

- *Múlastöð*
- *Breiðholt*
- *Hvolsvöllur*
- *Selfoss*
- *Akureyri*
- *Egilsstaðir*

Mila considers it most appropriate to offer 100 Gb/s as part of the tariff for Ethernet service, despite the fact that technically this is not entirely the same product. These connections however use Mila DWDM system in the same manner as MPLS-TP equipment which is used for Ethernet service, and in addition to this, equipment is installed at each location.

As equipment offers line cards with 25 Gb/s and 50 Gb/s data transfer speed, it is possible that Mila will offer 25 Gb/s and 50 Gb/s from the year 2021. Mila requests agreement from the PTA that the Administration also endorse the price for these data transfer speeds in order that Mila does not need to seek formal permission when and if Mila decides to offer these data transfer speeds.

⁶ Unless a new market analysis decision is published before that time and provides otherwise.

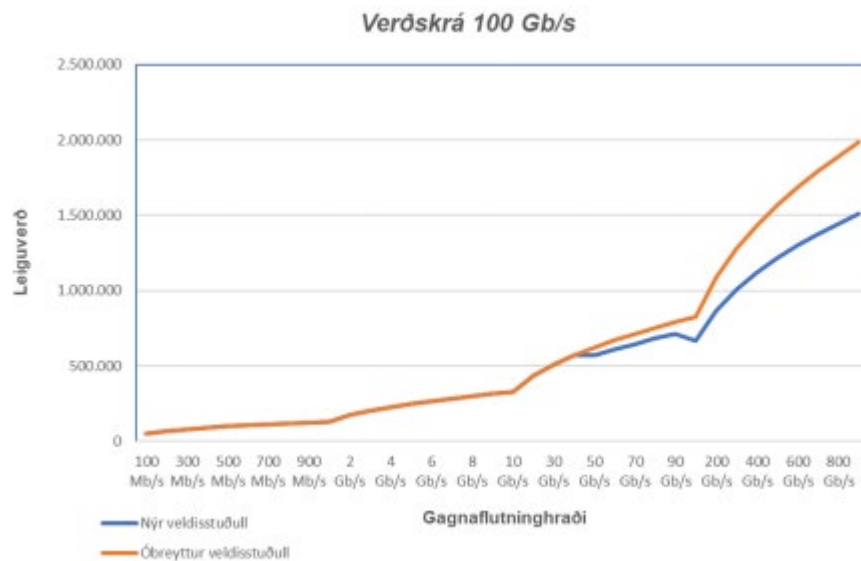
Tariff

Mila intends to offer 100 Gb/s on the Fibre Optic Ring in the product category “Ethernet service.”. The equipment to be installed is the same kind as for MDH, and in the opinion of Mila, 100 Gb/s is a normal continuation of the Ethernet service tariff as these connections on the Fibre Optic Ring like Ethernet service on the Fibre Optic Ring, and in addition to this there is the fact that the idea behind the product was that it would be “technology independent”, i.e. that the product would be based on data transfer speed and not on type of equipment. Mila expects to update technical conditions in its reference offer.

The MDH is on the other hand, designed as a service in the capital city area and particularly to data centres, so that tariff is not appropriate for general service on the Fibre Optic Ring.

Mila calculates the prices in the same manner as for other data transfer speeds in the tariff for Ethernet service apart from the following:

- ***The exponent is slightly reduced, i.e. to 0.37 (0.385 for 50 GB/s).*** In the opinion of Mila, it is normal to reduce the exponent so that the price difference between 10 Gb/s and 100 Gb/s is not too great. As can be seen in the illustration here below, the price difference between speeds increases significantly (in order to get a better idea of the tariff in the illustration, it is assumed that 20-90 Gb/s and 100 Gb/s - 900 Gb/s is on offer but it is appropriate to note that 20 Gb/s and more is not on offer) and it is not planned to offer 200 Gb/s according to these calculation formulae, but only 2*100 Gb/s will be on offer. Mila expects that in the future 100 Gb/s will in reality correspond to 10 Gb/s today and that 10 Gb/s will correspond to 1 Gb/s today.



- The distance category for + 100 km will be changed to 100-200 km and a fourth category will be added for +200 km distance. This category will be 2.5 times more expensive than the price in category 0-50 km. Mila considers it necessary to add this category as the service will only be on offer at 6 locations which means that distances will be much longer than generally is the case for Ethernet service. Ethernet service is in fact designed to connect urban areas and it is therefore expected that lessees will lease lower data transfer speed between smaller locations and will lease 100 Gb/s to connect regions of the country.

Given the above criteria, the tariff for Ethernet service will be as follows:



	Current tariff				New tariff			
	1 0-50	1.5 50-100	2 100-200	2.5 200-	1 0-50	1.5 50-100	2 100-200	2.5 200 ⁷ -
100 Mb	51,983	77,975	103,967		53,330	79,994	106,659	
200 Mb	68,592	102,889	137,185		70,369	105,553	140,738	
300 Mb	80,670	121,005	161,340		82,759	124,139	165,519	
400 Mb	90,508	135,762	181,016		92,852	139,279	185,705	
500 Mb	98,958	148,437	197,916		101,521	152,282	203,042	
600 Mb	106,445	159,667	212,890		109,202	163,803	218,403	
700 Mb	113,215	169,822	226,429		116,147	174,221	232,294	
800 Mb	119,426	179,139	238,852		122,519	183,779	245,039	
900 Mb	125,187	187,781	250,375		128,430	192,645	256,860	
1 Gb	130,576	195,864	261,152		133,958	200,937	267,916	
2 Gb	172,296	258,444	344,592		176,759	265,138	353,517	
3 Gb	202,634	303,951	405,268		207,882	311,823	415,764	
4 Gb/s	227,346	341,019	454,692		233,235	349,852	466,469	
5 Gb	248,572	372,858	497,144		255,010	382,515	510,020	
6 Gb	267,377	401,066	534,754		274,302	411,453	548,604	
7 Gb	284,383	426,574	568,765		291,748	437,622	583,496	
8 Gb	299,985	449,978	599,970		307,755	461,632	615,510	
9 Gb	314,457	471,685	628,913		322,601	483,902	645,202	
10 G	327,992	491,989	655,985		336,487	504,731	672,975	
25 G	473,195	709,792	946,389	1,182,986	485,450	728,176	970,901	1,213,626
50 G	568,810	853,215	1,137,620	1,422,025	583,542	875,313	1,167,084	1,458,856
100 G	669,675	1,004,512	1,339,349	1,674,186	687,019	1,030,529	1,374,038	1,717,548

The first column shows price according to the tariff now in force and the 2nd column shows price according to the tariff being processed by the PTA. The price for a port is to be ISK 35,000.

Mila requests that the tariff for 100 Gb/s (and 25 Gb/s and 50 Gb/s), be decided at the same time as the decision on tariff for trunk sections of leased lines.

(82) In an email to Mila dated 21 October 2020, the PTA requested explanations on the prices that would be in the tariff for 100 Gb/s MDH and Ethernet service.

(83) In the reply from Mila dated 26 October, the following was stated:

“It is true that there is quite a significant price difference between MDH products and Ethernet service products. This also applies to 1 Gb/s and 10 Gb/s.

⁷ Changed to 250 km in Mila's letter, dated December 1, 2020

MDH 1 Gb/s costs for example, ISK 63,791 while a corresponding 1 Gb/s in Ethernet service costs ISK 130,576, more than twice as much.

This means that offering 100 Gb/s as Ethernet service at ISK 1,339 per month, while a corresponding MDH product would be ISK 818,000 fits perfectly in the framework of the existing product offer. Mila has not received comments about this price difference from its customers.

The MDH product is intended solely for substantial data transfer to specialised service and only reaches a limited number of locations, in the capital city area and at Reykjanes and to a data centre at Blönduós. As Mila is offering, MDH to the data centre at Reykjanes, Mila did not consider it justifiable, other than to offer MDH at similar terms to Blönduós. But the MDH product was intended for companies on the retail market that need substantial data transfer capacity and not for the development of electronic communications networks for electronic communications companies, as is the intention with Ethernet service. Electronic communications companies lease Ethernet service connections and use them in a variety of electronic communications services, such as mobile phone, fixed line telephone and data transfer. Mila considers these products not to be comparable today.

Development of 100 Gb/s on the Fibre Optic Ring needs furthermore to be viewed in the context of development of the trunk line network as a whole. The offer of 100 Gb/s to selected locations can cause a reduction in revenue in the short term, at least where the party in question may, in return, cancel connections with less bandwidth.

Development of the lease price therefore depends on demand and on the impact on revenue from existing leased line connections. Mila aims to increase its offer of high speed connections, but at the same time has to take into account that when a customer leases, for example 100 Gb/s, this could lead to cancellation of a number of smaller connections."

(84) In Mila's reply to comments received in the national consultation, dated 1 December 2020, Mila proposed changes to the distance category for 25 Gb/s, 50 Gb/s and 100 Gb/s data transfer speeds, the following was stated in Mila's letter:

"Following the comments from GR and Nova, Mila has reviewed the price list for 100 Gb/s with a view to whether the company can reduce the price for this product. Mila considers it possible to change the distance categories for 100 Gb/s so that category 3 will be 100-250 km and in category 4 there will be connections in excess of 250 km. As a result, the route between Reykjavík and Akureyri will be significantly reduced. Mila will continue to examine the price list structure for 100 Gb/s and offer lower prices (with the PTA approval) if the demand is such that there is room for a reduction. As has been stated, Mila must assess the impact of major changes in the range of services or the tariff on the company's current revenue. "

5.2 The position of the PTA

(85) The PTA considers it positive that Mila is meeting the increased need of electronic communications companies for connections with increased data transfer speed. The PTA also agrees with Mila about the necessity to reduce the exponent in order to prevent there being an excessive price increase between data processing speeds.

(86) The PTA therefore raises no objections to the planned Mila tariff for 25 Gb/s, 50 Gb/s and 100 Gb/s data transfer speed.

(87) The PTA furthermore raises no objections to the addition of a distance category 25 Gb/s, 50 Gb/s and 100 Gb/s data transfer speed in the light of the fact that there will be longer distances. These distance categories only apply however to these data speeds.

(88) Mila is therefore authorised to offer this increased data transfer speed when the company is ready to provide the service. Mila shall inform about the offer of this service with the required notice pursuant to the companies reference offer.

6 The PTA conclusion

(89) The PTA has now reviewed the Mila cost analysis of the market for trunk line segments of leased lines, which was previously Market 14 pursuant to the ESA Recommendation from 2004. The PTA bases its review on the obligations imposed on Mila with the Administration's Decision no. 21/2015.

(90) Mila requested that the tariff as a whole be changed in accordance with changes to the underlying costs for the trunk line network, instead of updating the cost model for varying services. This will neither impinge on the structure of tariffs now in force, nor with consistency between tariffs.

(91) The PTA accepts that the tariff be updated in this manner at this point in time, as there is a risk that there could be inconsistency in the price of service items as a result of the changes that have taken place after Mila offered its Ethernet service (MPLS-TP) on and outside the Fibre Optic Ring. Demand for this service has increased at the cost of traditional leased lines, and the number of sold units has a significant impact on unit price which means that this migration between service categories could cause inconsistency between tariffs. However, the PTA considers it appropriate that in the next revision of the tariff in this market, the cost model will be reviewed in its entirety. Then it will be clearer how the demand has developed for the new products that Mila has been adding to its service offering. Mila shall submit a revised cost model to the PTA no later than 1 April 2022⁸. The cost model shall be in accordance with the criteria set in PTA's Decision no. 21/2015, dated 12 August 2015.

(92) The current increase only covers monthly charges which will increase by about 2.59%, while one-off charges, monthly charges for Sync-Ethernet and for ports remain unchanged. Nor does the increase cover special agreements.

(93) The tariffs are published in total in Appendix II.

(94) Mila is authorised to add data transfer speeds that are not specified in the tariffs published in Appendix II without submitting a new cost analysis to the PTA, given that the price for the service is calculated in accordance with the method and the criteria used in the PTA Decision no. 8/2018. The tariff for Ethernet service also applies to locations that Mila may add before the next revision of cost analysis of the market for trunk line segments of leased lines. Mila is also authorised to offer 1 Gb/s and 10 Gb/s, MDH connections to the data centre at Blönduós at a price that is reached using the same calculation rule with respect to distance as was used when deciding the price for 100 Gb/s, MDH connections to the data centre at Blönduós. Mila

⁸ Unless a new market analysis decision is published before that time and provides otherwise.



must however respect time limits for notifications of new service offers in accordance with the leased line reference offer.

(95) Following comments in the national consultation on Mila's agreements with Farice ehf. The PTA sent an inquiry to Farice and Mila regarding their agreement. The result of that correspondence was that the PTA does not consider it necessary to change the Mila tariff for 100 Gb/s connections.

(96) The PTA has commenced analysis of the market for trunk segments of leased lines and it is expected that a conclusion from that analysis will be available later this year or the next year. The PTA will subsequently review the obligations that now rest on Mila on this market, including the obligation for price control on which this decision is based. If the obligation for price control is maintained on this market, it is likely that there will be a total review of Mila tariff for this market.

The Decision

- (1) The Post and Telecom Administration endorses the Mila ehf. cost analysis for trunk line segments of leased lines as last revised on 16 January 2020 with the amendments submitted on 7 February, 27 May and 1 December 2020.**
- (2) Setup charges and price per month for leasing shall be in accordance with Appendix II to this Decision.**
- (3) The tariff comes into force on xx. xx 2021, and Mila is required to notify on the coming into force with the required notice.**
- (4) The new Mila ehf. tariff shall be part of the company's reference offer for leased lines from the same date**
- (5) 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 within 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. Pursuant to paragraph 4 of Article 13 of the same Act, a party can also refer it decision from the Post and Telecom Administration directly to the courts without the case being 1st put to the Appellate Committee. Such cases shall be brought within 3 months from the time that the party in question received information about the decision made by the Administration. Appeal does not postpone the legal impact of decisions by the Administration. Appeal direct to the courts hinders the Appellate Committee from accepting a case for processing.**

Reykjavík, XX XX 2021

Hrafnkell V. Gíslason, Director

Hulda Ástþórsdóttir

Appendix I: Weighted average cost of capital (WACC)

Appendix II: Tariff for wholesale market for trunk segments of leased lines

Appendix III: Comments from national consultation