PÓST- OG FJARSKIPTASTOFNUN

Draft Decision

Review of the Míla wholesale tariff for copper local loops (Market 4/2008)

27 April 2017

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1 Introduction

Míla ehf. tariff (Míla) for access to copper local loops and distribution frames here under discussion is based on the obligations imposed on the company with the Decision of the Post and Telecom Administration (PTA) no. 21/2014.

The products covered by the Míla tariff belong to the market for wholesale network infrastructure access at a fixed location which is Market 4 (Market 4/2008) according to the EFTA Surveillance Authority (ESA) Recommendation from 2008[1].

The PTA preliminary draft Decision on review of Mila wholesale tariff for copper local loops was submitted for national consultation which lasted from 23 December 2015 until 29 January 2016. This preliminary draft was based on the Mila initial cost analysis as revised on 21 December 2015. PTA then initiated an additional consultation on amendments to the Draft Decision on 26 April, which lasted until 16 May 2016. The comments received as well as Mila's response to the comments and the position of the PTA are stated in Appendix I.

Concurrent to the PTA review of cost analysis on market 4/2008, PTA reviewed Mila proposed tariffs based on cost analysis for terminating segments of leased lines (market 6/2008) and bitstream access (market 5/2008). Because of the interdependence of these tariffs it is necessary that they enter into force at the same time. The PTA will therefore publish the Decisions on the review of these tariffs at the same time.

PTA examined the cost models and Mila's tariff structures in these three markets (4/2008, 5/2008 and 6/2008). Furthermore, stakeholders have had an opportunity to comment on the methodologies used to calculate the prices and the tariff structures. However, as the initial cost models used costing information from 2014 the PTA requested that Mila would upgrade the cost models in these markets with costing data from the 2016 financial year.

In accordance with the PTA request, Mila submitted on 9 March 2017 an updated cost model which is now based on 2016 cost data. The calculated price for an access to the copper local loop is based on operating cost (opex) for the year 2016. Capital expenditure (capex) in the model is based on the Mila investments up to 2016 and the Mila investment plans for 2017 and 2018.

As a result of the updated cost information the monthly charge for access to the copper local loop is ISK 1,406.

The PTA revised the draft decision in accordance with the update of the cost model with 2016 data and that draft decision was submitted for an additional national consultation which lasted from 31 March 2017 until 19 April 2017. The PTA did not receive any comments from the stakeholders during this consultation.

The following Sections cover the events of the case, legal grounds, methodology and calculations that led to the PTA conclusion. The text of the Draft Decision describes the planned 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] ESA has now issued a new Recommendation on wholesale markets for electronic communications services: EFTA Surveillance Authority Recommendation of 11 May 2016 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with the Act referred to at point 5cl of Annex XI to the EEA Agreement (*Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services).*

1.1 National consultation

The PTA opened a national consultation on 23 December 2015 on the planned draft to a Decision on review of the Mila wholesale tariff for copper local loops. The draft planned for significant amendments to the structure of the tariff for access to copper local loops in accordance with PTA Decision no. 21/2014 dated 13 August 2014.

In the draft it was stated that pursuant to PTA Decision no. 21/2014, fully unbundled access to the local loop should be deemed basic access (base price) for a local loop, and not the lower frequency range alone, which has been the case up to this point in time. This meant that in all instances payment should be made for fully unbundled access to the whole loop, regardless of usage, that is to say, independent of whether the upper or lower frequency ranges were used or both frequency ranges. It was also stated that when access to the copper local loop is divided between two different electronic communications companies then the party which has access to the upper frequency range of the local loop shall pay for shared access while the other party shall pay for access to the lower frequency range which would be the charge for fully unbundled access less the fee for shared access. Where only the lower frequency range is used ("voice telephony only") then payment is made for fully unbundled access. The same applies if only the upper frequency range is used ("naked DSL").

It was also stated that the Decision in question had prescribed an amended division of costs between the upper and lower frequency ranges of local loops, that is to say in the case of shared access. In the opinion of the PTA the division of the lease fee should be based on total use of the Míla copper local loops in each instance, which would be in accordance with general practice in cost analysis based on historical costs. Access prices should thus be calculated by dividing the total number of leased accesses to the lower and upper frequency ranges of the local loops into the allocated costs with the addition of reasonable profit on the local loops in question. Given information available at that time, the Administration considered it appropriate to allow for the lower frequency range carrying 60% of local loop cost against 40% for the upper frequency range and that the tariff should be based on this. The above meant in effect that the upper and lower frequency ranges would share costs in accordance with use of the local loop.

In PTA Decision no. 21/2014 it was also specified that Mila should prepare a tariff for access to copper sub loops in its street cabinets, that is to say from interconnection of copper local loops to street cabinets to users' demarcation boxes.

In the Decision it was stated that one could expect the following impact on the wholesale tariff for local loop lease[2]:

- The wholesale charge for fully unbundled access would decrease.
- The wholesale charge for the upper frequency range (DSL) would increase when the lower frequency range is used in parallel.
- The wholesale charge for the lower frequency range would decrease when the upper frequency range is used in parallel.
- The wholesale charge would increase when only the lower frequency range is used.
- The wholesale charge for naked DSL would decrease.

[2] This planned impact assumed that there would be no other changes, that is to say that the cost base was unchanged and that the number of local loops was the same.

It should be noted in this connection that Mila was the only electronic communications company which made comments on this amendment when the draft to Decision no. 21/2014 was submitted to national consultation. As stated here above, the PTA explained in that consultation, in general terms, the impact that the amendments would have on price for access to the local loop and this was in accordance with what came to light in the Draft Decision in question. On the other hand, precise calculations of how this amended structure would affect individual items in the Mila tariff were not shown. Nor was it established what the impact would be of differentiating between local loops and sub loops, that is to say local loops to street cabinets.

In accordance with PTA Decision no. 21/2014, Mila submitted cost analysis with the amendments to the structure of the tariff as prescribed.

Subsequent to processing of the Mila cost analysis by the Administration, which is described in more detail in the following sections, the PTA endorsed the cost base for calculation of tariff items pursuant to those amendments that had been prescribed. The table here below shows the price rise offered in the consultation on 23 December 2015, and how planned changes to the tariff had had varying impact on individual tariff items.

Access	New equivalents	New Price	Equivalents according to older methodology	New price - older methodology	Increase/ decrease from changes	Price before - older methodology
Fully unbundled access.	1.00	1,495	1.33	1,537	-42	1,386
Access solely to the lower frequency range.	1.00	1,495	1.00	1,155	340	1,042
Access solely to the upper frequency range.	1.00	1,495	1.33	1,537	-42	1,386
Local loop - upper frequency range (lower frequency range in use)	0.40	598	0.33	381	217	344
Local loop - lower frequency range (upper frequency range in use)	0.60	897	1.00	1,155	-258	1,042
Local loop to street cabinet - fully unbundled access	0.85	1,271	1.33	1,537	-266	1,386
Local loop to street cabinet - upper frequency range (lower frequency range in use)	0.34	508	0.33	381	127	344
Local loop to street cabinet - lower frequency range (upper frequency range in use)	0.51	762	1.00	1,155	-393	1,042

The national consultation in question lasted until last 29 January.

The following parties submitted comments on the Preliminary Draft.

- Míla ehf. - hereafter named Mila
- Snerpa ehf. - hereafter named Snerpa
- Fjarskipti hf. - hereafter named Vodafone
- Síminn hf. - hereafter named Siminn
- 365 Miðlar ehf. - hereafter named 365
- Hringiðan ehf. - hereafter named Hringiðan

Comments from the parties can be mainly categorised into four groups, that is to say on the structure of the tariff for copper local loops, Mila costs, price for setup charges and access to distribution frames and also on the coming into force of the tariff. Furthermore, Siminn objected to the price control obligation being maintained on Mila.

Míla, Vodafone, Síminn, 365 and Hringiðan commented on the amendments to the structure of the tariff as published in the Draft Decision. As stated here above, this amendment was decided by the PTA with the Administration's Decision no. 21/2014, dated 13.08.2014, and Mila was the only company which commented on this issue in the Decision.

It was then pointed out in comments from the electronic communications companies that Siminn had informed electronic communication companies about the company's intention to decommission the PSTN telephone system during the next years, and to replace it with a VoIP voice system. This would result in a substantial change in the use of copper local loops as the lower frequency range of local loops had been used for this service.

There is further discussion on the comments received in the consultation in Appendix I

1.2 Additional consultations on amendments to the PTA Draft Decision

As stated here above, the PTA received comments from 6 electronic communications companies in the national consultation on the PTA Draft Decision. Of these there were 5 electronic communications companies that commented on the amendments to the tariff structure as prescribed in the PTA Decision no. 21/2014.

The main criticisms were that the tariff was too complex and not transparent for consumers. In addition to this there was opposition to the increase in cost share in the upper frequency range, which would be reflected in higher charges for bitstream access. There was furthermore, opposition to the large increase for those parties that only use the lower frequency range.

Because of the comments received on the planned tariff structure and the changed circumstances since the PTA Decision no. 21/2014 was published, the PTA decided in consultation with Míla to make a proposal for amendment of the structure of the Mila tariff for copper local loops and to submit amendments to the draft Decision to stakeholders in an additional consultation. The objective with the amendment was to simplify the tariff and to make local loop charges more transparent in accordance with the comments received. In addition to this, the change that has taken place in recent months with respect to service provider collection of separate access or line charges for local loops, was taken into account. These changes furthermore met the technical development planned on the voice telephony market.

The PTA amendments were submitted to consultation on 26 April 2016 and this consultation lasted until 16 May 2016. The consultation was limited to those parts of the draft Decision that related to structure of the tariff for access to local loops and to setup charges.

In addition to the views presented in comments from the electronic communications companies, it is also among other things necessary to take into account the fact that structure of the tariff should result in that costs incurred in an efficient operation is recouped along with reasonable profit and furthermore that the amount recouped should not be in excess of the estimated cost.

The arrangement is such today that a base charge is paid to the amount of ISK 1,042 for access to the lower frequency range of the local loop, which is used for voice telephony. In instances where only the upper frequency range is used then the monthly charge is ISK 1,386. Also, if both the upper and lower frequency ranges are used then a total of ISK 1,386 is paid for the whole local loop. In this instance, the upper frequency range is considered to be shared access and the company which purchases such access pays ISK 344. In today's situation it is usually the Mila [3]Access System which is the purchaser of access to the upper frequency range, that is

[3] Mila department which among other things sells bitstream access.

to say that this is Míla internal sales. This charge thus appears as a cost in the calculation of access charges for bitstream access through Access Options 1 and 3 on Market 5/2008. On the other hand, Mila collects a base charge for the lower frequency range directly from electronic communications companies and if the lower frequency range is used then it is the company that provides voice telephony that pays the base charge. If however, the lower frequency range is not used, then it is the company that provides Internet service which pays the base charge.

One can therefore say that with the current arrangement, the base charge is linked to voice telephony. Should the user on the other hand cease to purchase voice telephony (PSTN) but continue to purchase Internet service, the base charge is transferred to that service. If voice telephony and Internet service are provided by distinct parties, then Mila must transfer the charge to the Internet service party when this takes place and it is then the Internet service provider that collects the base charge from the user instead of the voice telephony provider.

Electronic communications companies currently collect a special charge at retail level from consumers which is variously called a line charge, access charge or local loop charge, and this has been linked to the voice telephony, like the Mila-base charge (lower frequency range of the local loop). The PTA examined this charge at Siminn, Vodafone, Símafélagið, Hringdu, Hringiðan and 365 and it proved to be between ISK 1,900 and ISK 2,987[4] per month including VAT. Items included in this charge in excess of the Mila base charge, vary between electronic communications companies.

Other electronic communications companies which offer access to fibre-optic local loops, such as Gagnaveita Reykjavíkur, will normally collect a local loop charge directly from the consumer while Mila only provides wholesale service to electronic communications companies.

It is now established that Siminn intends to gradually decommission its PSTN system over the next 3 years pursuant to an announcement from Siminn to electronic communications companies dated 29 January 2016. This will mean that telephone service will be moved from traditional voice telephony to service using IP communication protocol (VoIP). This service will be provided through fibre-optic or copper (xDSL) while lease of the lower frequency range for voice telephony will be phased out gradually, and Siminn projections indicate that the PSTN system will be fully decommissioned in the year 2020.

In order to take changed circumstances and comments from electronic communications companies into account, the PTA decided to prescribe that the tariff for local loop lease be significantly simplified. One local loop charge would be collected, regardless of whether the local loop ended in a street cabinet or telephone exchange.

There will therefore no longer be a special charge for the upper and lower frequency ranges and the charge for the upper frequency range will therefore no longer be included in the price for bitstream in Access Options 1-3. The current charge for Access Options 1-3 must therefore take this into account and the PTA's draft Decision on the tariff for bitstream access which takes this into account has been published for national consultation. Mila's new tariff for bitstream access will enter into force at the same time as the new tariff for access to the copper local loop.

In order to achieve this simplification of the tariff, the PTA decided to withdraw the proposed distinction in charges for local loop to street cabinet on the one hand and telephone exchange on the other. In this respect the charges will remain unchanged.

[4] These prices are as advertised on the websites of the companies in question during the period when the PTA conducted the additional consultation.

In recent years Mila's roll-out of VDSL has been extensive. As the length of the local loop in VDSL is limited to 400 m the average length of local loops has been decreasing in those areas. Siminn's plans to close the PSTN service will also contribute to this effect. Furthermore, with the state aid project now in place for fibre local loops in rural areas it can be expected that the longest copper local loops (found in rural areas) will continue to be replaced by fibre local loops. The length of copper local loops is therefore decreasing as well as the difference in length from a street cabinet on the one hand and the telephone exchange on the other hand. Given that the main cost driver is the length of the duct, the difference in cost in accessing the copper loop from a street cabinet compared to telephone exchange is therefore decreasing.

Mila has also introduced vectoring in some places where VDSL is on offer, which prevents the possibility of offering access to the local loop to street cabinet. Instead of this, Mila will provide VULA access or another kind of bitstream access. The PTA considers it unlikely that demand for local loop to street cabinet from other electronic communications companies will increase in the light of recent developments on the local loop market.

Circumstances have changed somewhat in this respect from the time when the PTA proposed that Mila be required to offer a separate price for access to the local loop to street cabinet with the PTA Decision no. 21/2014. The PTA deems that there could be considerable economies in simplifying the tariff for local loops which would balance the potential disadvantage faced by individual companies subsequent to the removal of a special charge for local loop to street cabinet. In addition to this, Mila has not provided cost arguments that demonstrate that a lower line equivalent should apply to local loop to street cabinet than to telephone exchange. The line equivalent formerly used by Mila was based on comparison with other countries.

The PTA therefore proposed that the local loop charge (for the whole local loop) would be fixed to the lower frequency range, that is to say that the party providing voice telephony would pay the local loop charge to Mila. Electronic communications companies could then collect the local loop charge from users of this service in the form of a separate line or access charge. This is in accordance with current practice and will therefore cause less disturbance.

In those instances, where consumers are not purchasing voice telephony, that is to say where only the upper frequency range is used, then the party that provides Internet service will pay the local loop charge to Mila in the same manner as is currently done with the base charge for local loop. The Internet service provider can then collect the local loop charge in the form of a line or access charge from the user of the service.

Only Símafélagið submitted a comment on this in the additional consultation. Símafélagið was generally positive towards the arrangement for collecting a line charge being simplified in the manner proposed by the PTA. Símafélagið however requested further explanations regarding the manner in which the monthly charge would be collected and this issue is covered in discussion on the Símafélagið comments in Appendix I.

As mentioned in the introduction above, the PTA requested that Míla would update the cost model for local loop leasing with data from the 2016 financial year. In accordance with PTA's request, Mila submitted an updated cost model based on 2016 cost data. The PTA opened an additional national consultation on a revised draft Decision based on this update. The consultation ran from 31 March 2017 until 19 April 2017. The PTA did not receive any comments from the stakeholders during this consultation.

The PTA undertook another extraordinary consultation meeting This update was March 31, 2017 and was consulted until 19 April 2017. No comments were received from the PTA in that consultation.

1.3 PTA Decision no. 21/2014

With the PTA Decision no. 21/2014 dated 13 August 2014, the PTA designated Mila as a company with significant market power on the market for wholesale network infrastructure access at a fixed location (Market 4/2008) and on the market for wholesale broadband access (Market 5/2008).

With the authority in Article 32 of the Electronic Communications Act the PTA imposed on Mila an obligation for price control for wholesale access to the company's copper access networks at a fixed location with related facilities, but did not impose an obligation for price control on Mila fibre-optic local loops. Pursuant to Paragraph 4 of Article 32 of the same Act it was prescribed that the tariff for the access in question provided through copper local loops shall be cost-oriented.

Pursuant to the above specified PTA Decision, the breakdown of monthly rental for access to copper local loop shall be as follows:

- Fully unbundled loop[5]. This includes both access to the lower and upper frequency ranges of the local loop (basic access).
- Shared unbundled loop[6]. Access for an electronic communications company to the upper frequency range of the local loop with DSL or other analogous technology while access to the lower frequency range of the local loop is used by another electronic communications company at the same time for telephone services.
- Access solely to the lower frequency range. Access for an electronic communications company solely to the lower frequency range for telephone services, while the upper frequency range is not being used at the same time.
- Access solely to the upper frequency range (naked DSL[7]). Access for an electronic communications company to the upper frequency range of the local loop for xDSL services while the lower frequency range is not being used at the same time.
- Access to facilities, related to access to copper local loops, such as facilities in telephone exchanges and technical spaces.

It was also stated in the relevant Decision that when access to the copper local loop is divided between two different electronic communications companies then the party which has access to the upper frequency range of the local loop shall pay for shared access while the other party shall pay for access to the lower frequency range for fully unbundled access less the fee for shared access. Where only the lower frequency range is used ("telephone only") then payment is made for fully unbundled access. The same applies if only the upper frequency range is used ("naked DSL").

[5] "Fully unbundled loop".
[6] "Shared unbundled loop".
[7] "naked DSL".

This decision on structure of the tariff differs from the existing one. It was prescribed that the tariff should use fully unbundled loop as the base access (base price) to the local loop and not solely the lower frequency range as has been the case. This means that full price is always paid for a local loop in use regardless of how it is used, and not with differing price depending on whether the lower or upper frequency ranges are in use as is the case currently. Fully unbundled access is considered to be 1 line equivalent instead of 1.33 as before.

The PTA decided to make changes to the criteria for pricing of the lower frequency range of the local loop on the one hand and the upper frequency range on the other. The existing arrangement allows for pricing of the upper frequency range (for xDSL services) being calculated with a 33% price weighting on the price for the lower frequency range (base price) which is the equivalent of the upper frequency range bearing a 25% share of the rental price for fully unbundled access. However in Míla cost analyses it has not been considered possible to demonstrate that this proportion is based on specifically identified local loop costs for its upper frequency range. The rule for division of costs between the lower and upper frequency ranges dates back to the year 2000 when the introduction of DSL was in its infancy. Since then, use of the upper frequency range has increased enormously and the situation at the time when the PTA submitted its draft to Decision no. 21/2014 was that in about two thirds of copper local loops in use the upper frequency range was used for xDSL service concurrently with telephone service or without.

The PTA therefore decided to review the division of costs between the upper and lower frequency ranges of local loops, that is to say in the case of shared access. In the opinion of the PTA the division of the lease fee should be based on total use on the Míla copper local loops in each instance, which would be in accordance with general practice in cost analysis based on historical costs. Access prices should thus be calculated by dividing the total number of leased accesses to the lower and upper frequency ranges of the local loops into the allocated costs with the addition of reasonable profit on the local loops in question. Given information available at that time, the Administration considered it appropriate to allow for the lower frequency range carrying 60% of local loop cost against 40% for the upper frequency range and that the tariff should be based on this. The above meant in effect that the upper and lower frequency ranges would share costs in accordance with use of the local loop.

It was furthermore stated in the Decision that the Míla cost analysis for access to copper local loops, to copper sub-loops and to fibre-optic to street cabinets, with associated facilities such as street cabinets, should be based on the following main criteria:

- The cost base shall be Míla historical costs (HCA) based on the preceding financial year in each instance.
- The methodology shall be based on allocating all costs to the service in question (FAC).
- Allocation of costs is based on separation of accountancy for local loop leasing, on Míla asset bookkeeping and on costs from Míla's bookkeeping system where operational costs are booked in bookkeeping accounts.
- Assessment of investment shall be based on the book value of operational equipment in Míla's asset bookkeeping where the historical cost of investments is adjusted to price levels of the year being analysed in each instance.
- 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 number of lines shall be calculated with reference to line equivalent where the above specified changes in definition of access are taken into account when assessing their equivalent.
- The cost of the local loop network shall be captured, including share of joint 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 capital[8] (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.
- Funds tied in current assets to the amount of average inventory for operations and development of the access network shall be taken into account.
- Average unit cost for the whole country is calculated from allocated operational and investment costs divided by number of lines or line equivalents.

It was also stated in the Decision that the Administration was authorised to reject prices that were outside the price range proposed by the EU Commission at any given time, see the EU Commission Recommendation on the application of consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment for next generation access networks (NGA).[9]

The Míla tariff shall be reviewed annually in accordance with annual updating of the cost analysis.

As stated in Section 1.2 here above, the PTA decided to deviate from the tariff structure prescribed in PTA Decision no. 21/2014 with respect to the charge for access to the upper and lower frequency ranges of local loops and sub loops. The main amendment however stands that a charge is always collected for a whole local loop regardless of how it is used, as was prescribed in the Decision.

1.4 The Míla tariff for access to copper local loops

The current Míla tariff is based on the PTA Decision no. 15/2013, dated 30 July 2013 and Decision no. 30/2011, dated 30 November 2011. The existing Míla tariff for local loop leasing will remain in force until it is replaced by a new tariff according to this Decision. The existing tariff is as follows:

Type of access	***Monthly charge***
Base price for local loop (lower frequency range)*	ISK 1,042
Fully unbundled access to local loop	ISK 1,386
Shared access to local loop (upper frequency range)	ISK 344
Access to wholesale distribution frame	ISK 905

**The base price is always collected for access to local loop.*

[8] In accordance with Article 16 of Regulation no. 564/2011 the PTA decides the weighted average cost of capital (WACC) which electronic communications companies should use as a reference in their calculations.

[9] Commission Recommendation of 11.9.2013 on Consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment.

The setup charge for local loop is ISK 3,166 for each connection. According to the current Míla tariff there is no distinction made as to whether the local loop reaches a street cabinet or a telephone exchange.

1.5 Written communications with Mila

With an email dated **5 January 2015**, Míla requested a postponement on delivery of its cost analysis of Market 4. This would enable the company to update the model with bookkeeping information from 2014. Míla requested a further postponement to March to deliver the cost analysis to which the PTA raised no objection.

On **3 February 2015**, Mila submitted a description of its cost accounting, along with a report from an independent auditor in accordance with the PTA Decision on Markets 4, 5 and 6.

In a letter from Nova to the PTA dated 27 March 2015 Mila submitted cost analysis for access to copper local loops. In the cost analysis the monthly rate for access to local loops, access to local loops to street cabinets, access to distribution frame and the setup charge for local loops was calculated. In the Míla letter it was stated that price calculations for virtual access to the local loop (VULA) would accompany the cost analysis of bitstream access. It was stated by Míla that the price for related facilities would be based on the price for hosting and that this would be calculated in a separate cost analysis of hosting in accordance with prior practice. Míla then pointed out that fibre-optic to street cabinets was part of the Míla local loop system. Fibre-optic local loops were, according to the PTA Decision, not subject to price control obligations and the same must apply to fibre-optic to street cabinets. For this reason Míla did not submit calculations of the price for fibre-optic lines to street cabinets.

In a letter dated **16 April 2015** the PTA raised objections to the Míla interpretation of PTA Decision no. 21/2014 with respect to fibre-optic to street cabinets. In its letter the PTA referred to Paragraph no. 762 in Decision no. 21/2014:

> *"For access to street cabinets Míla shall also prepare a tariff for fibre-optic from the telephone exchange to the street cabinet on the one hand and between street cabinets on the other hand." "This is a tariff for fibre-optic threads that are used for bitstream services with the VDSL technology."*

Then the PTA also referred to Paragraph no. 764:

> "*Pursuant to Paragraph 4 of Article 32 of the Electronic Communications Act, the tariffs for the relevant access to copper local loops, copper sub-loops and fibre-optic to street cabinets and access to related facilities shall be cost-oriented.*"

It was therefore perfectly clear that Míla was obliged to submit cost analysis of fibre-optic to street cabinets. The PTA pointed out that this product was the basis for providing VDSL service and that the price of this service had been used in the price calculations in the cost analysis for VDSL service in Access Options 1 and 3.

It was also clear that fibre-optic to street cabinets was not the same as fibre-optic local loop and for this reason it could in no way be concluded that the obligation for price control did not apply to fibre-optic to street cabinets on the grounds that there was no price control obligation on fibre-optic local loops.

The PTS required that Míla submit cost analysis for fibre-optic to street cabinets in accordance with the Administration Decision no. 21/2014.

The PTA also raised objections to the weighted average cost of capital (WACC) calculation used by Míla in its cost analysis. The WACC calculations can be found in Section 2.2 here below.

In a letter from Míla to the PTA dated 2**1 April 2015**, it was stated that Míla considered that price calculations for fibre-optic to street cabinets were more applicable to fibre-optic to companies in Market 6. For this reason Míla proposed that cost analysis of fibre-optic to street cabinets be submitted with cost analysis of Market 6.

In its reply, Míla submitted a cost analysis that had been re-calculated according to changes in weighted average cost of capital.

During the period **22 May 2015** until **7 August 2015**, the PTA and Míla exchanged a number of letters with respect to equivalents and investments in street cabinets.

On **26 June 2015** Míla submitted a communication to the PTA regarding categorisation of fibre-optic on the market according to the market analysis. In that communication Míla reiterated its view that the company was not obliged to submit cost analysis for fibre-optic to street cabinets.

In a letter from the PTA to Míla, dated **19 August 2015**, the PTA reiterated that Míla was obliged to submit a cost analysis for fibre-optic to street cabinets in accordance with the price control obligation imposed on the company for Market 4. In addition to this the PTA raised objections to the Míla discussion on opex and pointed out that a real increase had taken place in costs since the previous analysis, while the number of equivalents had decreased. The PTA also requested explanations on opex belonging to the categories Internal services, Internal computer services costs and Internal telephone costs.

The PTA also raised objections to the division of capex for the street cabinet conversions from copper to fibre-optic. The PTA proposed that in the division of costs for the labour component, the proportion of material costs should be used as a guide instead of using a Míla estimate. This would mean that the fibre-optic proportion would be 30% instead of 20%. The PTA also proposed that Mila examine in more detail, whether part of the costs for cabinets should be attributed to fibre-optic local loops. The PTA also proposed that instead of using 8 year useful life of investments related to migration to fibre-optic a 10 year useful life period should be used.

In a letter from Míla dated **10 September 2015** it is stated with respect to *fibre-optic to street cabinets* that Míla had examined more carefully the definitions of products on Market 6 and also the relationship with Markets 4 and 5. Míla considers that fibre-optic in Access network belongs to Market 4. Míla had sent a letter to the PTA on 26 June 2015 explaining Míla's view on the market definition of fibre-optic in Access network.

Fibre-optic to street cabinets is technically identical to other fibre-optic in Access network in all respects other than that it does not reach all the way to users. It is therefore the opinion of Míla that if fibre-optic in Access network is defined as part of Market 4 then the same should apply to fibre-optic to street cabinets. Míla points out that in Europe, price control obligations have generally been lifted in what are called next generation networks. Fibre-optic to street cabinets is used as a sub-layer for VDSL and VDSL belongs to next generation networks pursuant to the EU definition.

In Paragraph 764 of the PTA Decision no. 21/2014 (Appendix A) on the designation of a company with significant market power and on the imposition of obligations on the wholesale market for local loops (M4) and bitstream (M5), the following is stated:

> *Pursuant to Paragraph 4 of Article 32 of the Electronic Communications Act, the tariffs for the relevant access to copper local loops, copper sub-loops and fibre-optic to street cabinets and access to related facilities shall be cost-oriented. The PTA is authorised, when calculating costs, to take into account comparable service considered to be operated in an efficient manner. Furthermore the PTA is authorised to make price comparison on the basis of cost analysis of tariffs in comparable competition markets such as in the EEA.*

Pursuant to the above specified Paragraph one must understand that fibre-optic to street cabinets is subject to price control without there being a need to provide specific arguments as to why they are subject to price control. Paragraph 772 deals on the other hand with fibre-optic local loops:

> *772) The PTA does not at this stage impose an obligation on Míla for price control for access to fibre local loops, among other things because currently the company's development of fibre-optic local loops is not at an advanced stage. The number of Míla fibre-optic local loops in use was [...] at the end of 2013 which is about [...] of the total number of fibre-optic local loops in use which is [...] of the total number of local loops in use.*

As can be seen in Paragraph 772 in Decision no. 21/2014, the PTA has not imposed an obligation for price control for access to fibre-optic local loops but in Paragraph 764 an obligation has been imposed that the price for fibre-optic to street cabinets shall be cost oriented. In the opinion of Míla these paragraphs are contradictory as the fibre-optic system in Access Network is in reality one comprehensive fibre-optic local loop system even though delivery of lines varies depending on whether it is fibre-optic to companies or in the Míla GPON system.

In the opinion of Míla it is extremely inappropriate to impose price control obligations on fibre-optic to street cabinets while other types of fibre-optic service are not subject to price control obligations. The rental price for fibre-optic to street cabinets today is 50% of the price for fibre-optic in Access network. Given this method of calculating the rental price, one is effectively imposing price control on fibre-optic in Access network if price control is imposed on fibre-optic to street cabinets and vice versa.

Míla furthermore points out that the spirit of the market analysis suggests that anything connected with copper should continue to be subject to price control obligation while the fibre-optic network should not be subject to price control obligation. As fibre-optic to street cabinets is a procurement for Míla VDSL service, the PTA appears to be imposing an obligation for price control on that part. In the opinion of Míla this is contrary to the spirit of the European Directive on next generation networks (Digital Agenda) where price control obligations have been widely lifted in order to support migration to fibre-optic. VDSL is categorised as next generation network which means that fibre-optic to street cabinets is an essential part of migration to fibre-optic in Iceland.

Míla will therefore not submit a cost analysis for fibre-optic to street cabinets until this issue is resolved. Míla emphasised that the company's submission from 26 June 2015 be answered before further steps are taken.

Míla then presented more detailed explanations with respect to *opex* which are discussed further in Section 2.3 here below.

With respect to the PTA objections regarding *capex*, Míla pointed out that the company had specifically examined the labour component in these investments with the help of Míla's main experts in this field. They had concluded that the appropriate fibre-optic share of the labour

component would be [...][10]. Despite this fact, Míla accepted the use of a [...] split in the cost analysis as proposed by the PTA. Míla submitted a recalculated cost analysis in accordance with this split.

With regards to the share of fibre-optic local loops in the investment in cabinets, Mila points out that the company has previously stated that the future configurations have not yet been decided but it is probable that fibre-optic local loops will in some instances be connected in cabinets. It has been specifically stated that fibre-optic local loops will then replace copper local loops. There is therefore no allowance made for additional connections (thus no revenue). Fibre-optic local loops are not being connected to street cabinets and there is complete uncertainty as to the degree to which this will be done. In many instances there will be no space in existing street cabinets for fibre-optic local loops and in other instances Mila will probably come to the conclusion that it is most economical to connect fibre-optic local loops in handholes.

Mila proposed that the replacement cost of connection cabinets would be calculated in the next cost analysis and that the investment would be shared between fibre-optic local loops and copper local loops. The division would be based on the proportion of connected fibre-optic local loops and copper local loops in the cabinets. This is the same methodology as is used in the cost model for bitstream access (division of ISAM between GPON and xDSL connections).

As there are currently no fibre-optic local loops connected in Mila connection cabinets, it is unnecessary to calculate replacement cost in this analysis as all costs are allocated to copper local loops.

With regards to the PTA comments concerning *useful life* of investments related to migration to fibre-optic, Míla considers it unwise to use a [...] year useful life. [...]. In the light of the above, Míla considers it important to use an [...] year useful life rather than the [...] year useful life proposed by the PTA. [...] It is also possible to review this useful life period should criteria change.

In a letter from the PTA to Míla dated **25 November 2015** regarding categorisation of fibre-optic on the market pursuant to the market analyses, Míla's submission from 26 June 2015 was answered.

With respect to fibre-optic to street cabinets, the PTA referred to the fact that it had been specifically stated in the PTA Decision no. 21/2014, that fibre-optic to street cabinets was subject to an obligation for price control. Fibre-optic connections from street cabinets to end users were on the other hand exempt. In the opinion of the PTA this was clear in the Decision in question.

The PTA then referred to the Míla request that the Administration make a Decision supported by arguments as to how one should understand which types of fibre-optic belonged to Market 4 on the one hand and to Market 6 on the other. The PTA pointed out in this connection that Míla had not appealed PTA Decisions, neither on Market 4 nor on Market 6. The PTA pointed out that there was no uncertainty regarding interpretation of these issues which were discussed in the Míla submission. In the next round of market analyses of the markets in question, the company can present its views on this issue and can appeal the PTA Decision to the Appellate

[10] Information removed for purposes of confidentiality. The same applies to information provided in square brackets here below.

Committee for Electronic Communications and Postal Affairs or can refer it to the courts if the company is unhappy with the Decision.

The PTA reiterated that Míla was obliged to submit a cost analysis for fibre-optic to street cabinets without unnecessary delay and gave Míla notice until 9 December 2015 to provide the cost analysis.

During the period **19 November 2015** until **09 December 2015** the PTA and Míla exchanged a number of letters with respect to equivalents, costs for distribution frames and costs for inventory.

Míla submitted a revised analysis **4 December 2015** and it is on this analysis that the PTA Draft Decision which was submitted for consultation 23 December 2015, is based.

Subsequent to national consultation and to the comments received, Mila and PTA communicated on amended structure of the tariff which could deal with the comments received.

Mila subsequently submitted a reviewed cost analysis on **30 March 2016**. This analysis contained the monthly price for access to the local loop, recalculated on the basis of the cost base endorsed by the PTA in accordance with the amendment where only one monthly charge would be collected for access to local loop and that the setup charge would remain unchanged. The local loop price under this amendment was published for consultations on April 26, 2016 which lasted until May 16, 2016. The consultation was limited to the aspects of Mila cost analysis relating to the structure of the tariff for the local loop access and the setup fee.

On **27 February 2017**, PTA requested that Mila updated the cost analysis with cost data from 2016 and on 7 March 2017 Mila submitted the updated cost model, which was then corrected on 9 March 2017. This is the analysis, on which the PTA conclusion is based.

2 The position of the PTA

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 cost analysis here under discussion. There is discussion on the main aspects that the PTA considers important as criteria for the Administration's position when calculating a tariff for lease of local loops. The factors in question are the following:

1. Weighted average cost of capital
2. Operational costs
3. Investment costs
4. Setup and access charges
5. Access to distribution frame
6. Number of lines
7. Calculation of lease price

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. In Section 2.9 the PTA Decision is then summarised before the wording of the Decision is given.

The position taken by the PTA is based on authority granted to the Administration in the Electronic Communications Act where reference is particularly made to Article 32 on price control and to Article 31 on separation of accountancy and to PTA Decision no. 21/2014.

Mila has submitted a description of the company's cost accounting, along with a report from an independent auditor. Míla has also submitted an analysis of costs for the company's leasing of copper local loops, along with further explanations at the request of the PTA. The PTA conclusion is based on Míla cost analysis from 27 March 2015, along with the updates submitted by the company, most recently on 9 March 2017.

2.2 Weighted average cost of capital

2.2.1 Mila cost analysis

In the Míla cost analysis dated 9 March 2017 the Weighted Average Cost of Capital (WACC) is calculated in the following table:

	2016
Risk-free rate	2.57%
Debt premium.....	3.00%
Cost of debt	*5.57%*
Market premium.....	5.00%
Unlevered beta.....	51.00%
Unlevered beta.....	72.97%
Equity.....	65.00%
Liabilities/Equity.....	53.85%
Other risk (alpha).....	0.00%
Tax rate.....	20.00%
Required rate of return after tax	*6.22%*
Required rate of return pre-tax	*7.77%*
WACC pre-tax	7.00%

2.2.2 The position of the PTA

In Article 16 of Regulation no. 564/2011 on accounting and cost analysis in the operations of electronic communications companies, it is stated that the costs of initial capital tied 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 rate of return shall be calculated as the sum of risk-free interest and interest premium which reflects normal mark-up by companies on the market. The PTA shall decide at least once a year the Weighted Average Cost of Capital (WACC) for specific financial markets based on market mark-up, economic indebtedness and the position with respect to working capital and debts.

Weighted average cost of capital (WACC) using the PTA criteria is shown in the table here below. The WACC is for the year 2016 which is the base year in Mila cost analysis.

Rate of return requirement	*2016*
Risk-free interest	2,57%
Unlevered beta	0,51
Levered beta	0,73
Debts/equity	0,54
Market premium	5,00%
Required rate of return on equity	**6,22%**
Risk-free interest	2,57%
Debt premium	3,00%
Cost of debt	**5,57%**
Interest-bearing debt%	35%
Equity%	65%
Tax rate	20%
Cost of debts after tax	4,46%
Required rate of return pre-tax	7,77%
WACC pre-tax	**7,0%**

In line with the above the PTA proposes that pre-tax WACC should be 7.0%.

Calculations based on data on comparison companies from the Bloomberg database indicate that the beta value for electronic communications companies lies in the range 0.48-0.52. The PTA decided to use the value 0.51.

The PTA considers it appropriate to set the risk-free interest at the rate of return on HFF 1506 2044 30 Housing Financing Fund bonds instead of on HFF 1504 2034 as the former bonds today best reflect the payment flow being converted to current value when one takes into account the duration of useful life.

There has however been uncertainty recently about the future of the Housing Financing Fund and in the opinion of analysts a risk weighting has developed on top of the indexed Housing Financing Fund bonds. This indicates that the rate of return on HHS bond issues no longer reflects risk-free interest on the market. In order to evaluate risk-free interest, the PTA takes into account an adjustment to the amount of estimated "Housing Financing Fund weighting" in each instance.

Given the above specified criteria the average risk-free rate for the last 5 years is 2.57%.

In accordance with the above it is the opinion of the PTA that weighted average cost of capital (WACC real) for an electronic communications company in Iceland is 7.0% for the year 2016 in calculations of rate of return for capital tied in assets used in connection with the company's provision of services.

Míla raised no objections to this assessment by the PTA and the revised cost analysis takes this into account.

2.3 Opex

2.3.1 Mila cost analysis

"As was stated in the report on the structure of Mila cost accounting, which was sent to the PTA last 3 February, Mila separates its bookkeeping according to the nature and purpose of operational units. Operation of Míla copper local loops is recorded separately and the opex is divided into several main cost categories:

- *Copper*
- *Microwave connections*
- *Access multiplexers*
- *Faults*
- *Connections*
- *Distribution frames*

Each category is further categorised depending on the location in the country where the costs originate.

In addition to this there are several cost centres that are not related to any specific region and they are as follows:

- *Access networks*
- *Line allocation*
- *NMS system*
- *Service desk*
- *Development projects*
- *Access multiplexing equipment*

Opex per cost category

On 9 March 2017 Mila updated the breakdown of operational cost items as shown in the following table:

	2011	2012	2013	2014	2016
Access networks.....	[...]	[...]	[...]	[...]	[...]
Copper.....	[...]	[...]	[...]	[...]	[...]
Access multiplexers.....	[...]	[...]	[...]	[...]	[...]
Microwave connections.....	[...]	[...]	[...]	[...]	[...]
NMS system.....	[...]	[...]	[...]	[...]	[...]
Faults.....	[...]	[...]	[...]	[...]	[...]
Connections.....	[...]	[...]	[...]	[...]	[...]
Distribution frames.....	[...]	[...]	[...]	[...]	[...]
Service desk.....	[...]	[...]	[...]	[...]	[...]
Line allocation.....	[...]	[...]	[...]	[...]	[...]
	[...]	[...]	[...]	[...]	[...]

Breakdown of opex by type

In the Mila cost analysis, the division of Opex into types is shown in the following manner:

	2011	2012	2013	2014	2016
Material	[...]	[...]	[...]	[...]	[...]
Transferred labour	[...]	[...]	[...]	[...]	[...]
Licence fees	[...]	[...]	[...]	[...]	[...]
Purchased services	[...]	[...]	[...]	[...]	[...]
Mechanical equipment	[...]	[...]	[...]	[...]	[...]
Other costs	[...]	[...]	[...]	[...]	[...]
Office costs	[...]	[...]	[...]	[...]	[...]
Travel costs	[...]	[...]	[...]	[...]	[...]
Housing costs	[...]	[...]	[...]	[...]	[...]
Vehicle costs	[...]	[...]	[...]	[...]	[...]
Computer and software costs	[...]	[...]	[...]	[...]	[...]
Written off lost claims	[...]	[...]	[...]	[...]	[...]
Senior management and support department costs	[...]	[...]	[...]	[...]	[...]
Costs pre-interest income tax and depreciation	[...]	[...]	[...]	[...]	[...]

Mila stated that opex has decreased considerably. The decrease can be attributed to cancellation of outsourced services, reduced activity in the system and that Mila has stopped dismantling loops at service termination.

2.3.2 The position of the PTA

Míla provided a breakdown of information on the company's copper local loop network opex in 2014 and 2016 as well as on the development of individual cost items since the last cost analysis was made on the basis of 2012 operations. The PTA uses information supplied by Mila in its assessment. The PTA also builds on data that shows financial separation in Mila's operations in accordance with the obligation for separation of accountancy.

The following table shows the division of opex from 2012 by cost category:

	2012	2013	2014	2016	Change from 2012
Access networks	[...]	[...]	[...]	[...]	[...]
Copper	[...]	[...]	[...]	[...]	[...]
Access multiplexers	[...]	[...]	[...]	[...]	[...]
Microwave connections	[...]	[...]	[...]	[...]	[...]
NMS system	[...]	[...]	[...]	[...]	[...]
Faults	[...]	[...]	[...]	[...]	[...]
Connections	[...]	[...]	[...]	[...]	[...]
Distribution frames	[...]	[...]	[...]	[...]	[...]
Service desk	[...]	[...]	[...]	[...]	[...]
Line allocation	[...]	[...]	[...]	[...]	[...]
Total	**[...]**	**[...]**	**[...]**	**[...]**	**[...]**

Comparison of opex between 2012 and 2016 shows that opex has [...]. During the same period the building cost index has increased by about 14% while at the same time the number of local loops has decreased.

PTA believes it is normal to expect a decrease in opex to some extent with the decrease in equivalents, as part of opex is variable according to the number of local loops being leased.

The following table shows the development of opex for each line equivalent[11]. The table is for average line equivalent for each year.

Year	Opex	Average line equivalent	Cost per line equivalent	Changes between Years
2009	[...]	[...]	[...]	[...]
2010	[...]	[...]	[...]	[...]
2011	[...]	[...]	[...]	[...]
2012	[...]	[...]	[...]	[...]
2013	[...]	[...]	[...]	[...]
2014	[...]	[...]	[...]	[...]
2016	[...]	[...]	[...]	[...]

As can be seen in table here above, line equivalents have [...]

Opex per line equivalent has increased by about [...] since 2009 and by about [...] since 2012. Compared with the development of the building cost index it has increased by about 34% from 2009 and by about 14% from 2012. This means that opex per equivalent has increased less than the building cost index and has therefore decreased in real terms.

Given the above, the PTA considers that the development of Míla opex is favourable. The development of the Mila opex shows that despite decrease in line equivalents and the

[11] On the basis of calculations of equivalents according to the older methodology, see Section 2.7.

disadvantage that can be expected from that the cost per equivalent has not increased more than price levels and has in fact decrease in real terms.

Míla also categorises opex by type. The following table shows how the share of each type in total cost has developed:

Category	2012	%	2013	%	2014	%	2014	%
Material	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Transferred labour	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Licence fees	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Purchased services	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Mechanical equipment	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Other costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Office costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Travel costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Housing costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Vehicle costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Computer and software costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Written off lost costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Senior management and support department costs	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Costs pre-interest income tax and depreciation	**[...]**	**[...]**	**[...]**	**[...]**	**[...]**	**[...]**	**[...]**	**[...]**

The share in total costs remains relatively stable between years in most categories. [...]

In calculations of the monthly rate for local loops the PTA uses information from Míla on operational costs for the access network during the year 2016. The PTA considers that Míla has submitted adequate explanations of individual factors where there are deviations.

The PTA conclusion is thus that the Míla operational costs for the year 2016 used as a basis for calculation of local loop leasing amount to a total of ISK [...].

2.4 Investment costs

2.4.1 Mila cost analysis

In the Míla cost analysis dated 27 March 2015 the following is stated with respect to capex:

"Overview of investments

The historical investment cost is calculated using the same calculation methodology as before. [...]

With a letter from Míla to the PTA dated 10 September 2015, Míla agreed to use a [...] division between fibre-optic and copper for the introduction of street cabinets in the cost analysis as proposed by the PTA. Míla submitted a recalculated cost analysis in accordance with this split.

On 27 February 2017, PTA requested that Mila updated the cost analysis with cost data from 2016 and on 7 March 2017 Mila submitted the updated cost model including investments up to 2016. The cost model was corrected on 9 March 2017 upon which PTA's conclusion is based.

Investments in copper system at nominal price:

Year of purchase	User lines	VDSL - copper	Microwaves	Machines and equipment	Distribution frames	NMS	Total
2016	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2014	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2013	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2012	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2011	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2010	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2009	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2008	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2007	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2006	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2005	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2004	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2003	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2002	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2001	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2000	[...]	[...]	[...]	[...]	[...]	[...]	[...]
1999	[...]	[...]	[...]	[...]	[...]	[...]	[...]
1998	[...]	[...]	[...]	[...]	[...]	[...]	[...]
1997	[...]	[...]	[...]	[...]	[...]	[...]	[...]
1996	[...]	[...]	[...]	[...]	[...]	[...]	[...]
1995	[...]	[...]	[...]	[...]	[...]	[...]	[...]
1994	[...]	[...]	[...]	[...]	[...]	[...]	[...]

With respect to indexed investment cost Mila states that the capex has been calculated in the same manner as in previous analyses. Investments in distribution frames and in copper local loops are indexed from the year 2002 using the building cost index. The average useful life of these investments is 20 years.

Assessment of investments in copper from the year 2001 is based on investment costs as calculated in the cost analysis from 2002. The investment cost was ISK [...] where a 20 year useful life of investment is used. This is calculated proportionately on the basis of the required number of years to cover the investment lifetime.

In a letter dated March 8, 2017, Mila stated that company consider it appropriate to take into account in the calculations that for the next few years there will be a drop in the investment in the copper local loops. According to the Mila budget, investment in copper local loop in 2017 is only expected [...] kr., as well as the VDSL roll-out will be largely completed in 2017. The following years the focus will be on fibre local loops in both the capital area and in the countryside. Investment in the copper network will therefore be largely related to investments maintenance. Míla therefore suggests that in the calculation of the investment cost estimated investments in the copper access network in 2017 and 2018 will be included. In turn investments in the copper network in 1997 and 1998 will be omitted.

In the assessment of investments from 1999 until 2001 Mila uses the ratio 3/20 of [...] kr. the Mila investment cost is indexed to the average price level of 2016.

Here below is an overview of indexed investment cost for the copper system according to the cost analysis submitted by Míla on 9 March 2017:

Base index	Year of purchase	Copper	VDSL - copper	Machines and equipment	Distribution frames	NMS	Total
	2018	[...]	[...]	[...]	[...]	[...]	[...]
	2017	[...]	[...]	[...]	[...]	[...]	[...]
652.8	2016	[...]	[...]	[...]	[...]	[...]	[...]
628.0	2015	[...]	[...]	[...]	[...]	[...]	[...]
602.3	2014	[...]	[...]	[...]	[...]	[...]	[...]
593.2	2013	[...]	[...]	[...]	[...]	[...]	[...]
573.1	2012	[...]	[...]	[...]	[...]	[...]	[...]
539.4	2011	[...]	[...]	[...]	[...]	[...]	[...]
508.5	2010	[...]	[...]	[...]	[...]	[...]	[...]
488.9	2009	[...]	[...]	[...]	[...]	[...]	[...]
428.8	2008	[...]	[...]	[...]	[...]	[...]	[...]
371.6	2007	[...]	[...]	[...]	[...]	[...]	[...]
339.7	2006	[...]	[...]	[...]	[...]	[...]	[...]
313.9	2005	[...]	[...]	[...]	[...]	[...]	[...]
297.9	2004	[...]	[...]	[...]	[...]	[...]	[...]
285.9	2003	[...]	[...]	[...]	[...]	[...]	[...]
276.7	2002	[...]	[...]	[...]	[...]	[...]	[...]
257.5	-2001	[...]	[...]	[...]	[...]	[...]	[...]
	Base	[...]	[...]	[...]	[...]	[...]	[...]
	Total	[...]					

In the Míla cost analysis dated 27 March 2015, the following is stated with respect to annual capital cost:

"Annual capital costs "

Annual capital costs are calculated in the same manner as in previous analyses. A useful life of 20 years is used for the copper system and for distribution frames, 5 years useful life for microwave connections and 10 year useful life for NMS and technical equipment. A useful life of 8 years is used for investments related to the introduction of fibre-optic. [...]

The following table was updated in the cost analysis submitted by Míla on 9 March 2017 and uses 7.0% WACC:

Annual capital costs:

Investments	Indexed investment cost	Lifetime	Annual capital cost
Copper.....	[...]	20	[...]
Fibre-optic, copper.....	[...]	8	[...]
Microwave connections.....	[...]	5	[...]
NMS system.....	[...]	10	[...]
Equipment.....	[...]	10	[...]
Distribution frames.....	[...]	20	[...]
	[...]		[...]

The table shows the results of Mila calculation of indexed investments cost for the years 1999-2016 and estimated investment cost in 2017 and 2018.

2.4.2 The position of the PTA

In PTA Decision no. 21/2014 it is stated that capital expenditure (CAPEX) shall be assessed on the basis of the booked value of operational assets in Míla asset accounts indexed to the price level of the year that is being analysed in each instance.

The Míla cost analysis uses the booked value of operational assets as in the company's accounts, for investments 2002 - 2016. For investments for the period 1999-2001, the average investment per annum, on the basis of 2001 capex is used. Míla uses the same methodology as the PTA accepted in its Decision no. 13/2009 and reference is made to this Decision with respect to further discussion on the PTA criteria and conclusion. PTA Decision no. 13/2009 stated which methodology the Administration considered appropriate for calculating Míla investments over the last 20 years. The longest useful life of investments is 20 years and assets with a 20 years lifetime are assessed in accordance with investments over a 15 year period, 2002 until 2016, while older investments are assessed using the proportion 3/20 of the investment base of 2001. Assets with a 10 year useful life or shorter are assessed on the basis of Míla investments for the years 2007 - 2016.

According to Mila, the company's investment strategy is changing. Mila's investments in copper system in the medium term will be mostly related to investment maintenance. Mila has already begun investment in fibre local loops in the capital area and in the future, intends to focus on fibre network in place of the copper network. Accordingly, Mila has proposed that their investment plan in copper network over the next two years will be taken into account in investment base and instead older investments will be omitted. The effect of this is similar to shortening the lifetime of the copper network, in view of the uncertainty about the future of the copper network.

PTA does not object to this forward-looking view of investments in the copper network when defining the investment cost. Changes are evident in the access network in this country where fibre local loops are constantly increasing and hence copper local loops decreasing that can yield high unit price from the cost model. PTA believes it is important to try to maintain price stability of copper local loops and this approach for the calculation of investment base promotes price stability.

The categorisation of investments in the Míla cost analysis is changed from that used in the previous analysis in order to separate fibre-optic costs in the Míla introduction of street cabinets. Material and equipment was booked on the one hand on copper and on the other hand on fibre-optic. The PTA proposed a change in the division of the labour component in these investments to which Míla agreed, which resulted in a division where [...] of the labour component was allocated to fibre-optic and [...] to copper.

As stated here above, the PTA proposed an examination of whether part of the investment for street cabinets should be allocated to fibre-optic local loops. It was stated by Míla that fibre-optic local loops were not being connected to street cabinets and that there was complete uncertainty as to the degree to which this would be done. In the light of the above the PTA considers it appropriate that this should be examined in more detail in the next cost analysis of this market when the use of fibre-optic local loops in these cabinets is established.

Míla indexes investments to the year 2016 using the year's average building cost index.

The PTA conclusion is thus that the Míla investment costs indexed to the year 2016 as well as investments forecasts for 2017 and 2018 which are used as a basis for calculation of local loop leasing amount to a total of ISK [...].

The useful life of investments is unchanged from the last cost analysis, except with respect to investments in the Mila introduction of street cabinets where Mila proposed that an 8 year useful lifetime should be used. [...]. The PTS can accept the Míla argument that the useful life of investments for the Míla introduction of street cabinets should be 8 years. In addition to this the Administration has referred to the analyses of other regulatory bodies with respect to useful life.

The following table shows the conclusion of calculations of annual capital cost.

Investments	**Indexed historical cost**	**Lifetime**	**Annual capital cost**
Copper	[...]	20	[...]
Fibre-optic, copper	[...]	8	[...]
NMS system	[...]	10	[...]
Equipment	[...]	10	[...]
Distribution frames	[...]	20	[...]
	[...]		**[...]**

Annual capital cost used as a basis for calculation of copper local loop lease is ISK [...].

2.5 Setup charges

According to a reviewed Mila cost analysis after the first national consultation on this draft decision, no allowance was made for an increase in setup charges which shall therefore remain unchanged at ISK 3,166. Annual revenue from setup charges in 2016 were ISK [...]. This amount is deducted in the cost base used for calculating the monthly charge for access to copper local loops.

The PTA makes no objection to the Mila proposal for setup charges.

2.6 Access to distribution frame

2.6.1 Mila cost analysis

In the Míla cost analysis dated 27 March 2015 it is stated that revenue for access to distribution frames was as follows for the year 2014: [...]

Míla also submitted calculations for costs for distribution frames.

[...]

Mila's updated cost analysis dated 9 March 2017 shows that Mila's income for access to distribution frames in 2016 amounted to [...] ISK. With 22% increase in the access fee for distribution frames the deduction for estimated income from this access is [...] ISK.

2.6.2 The position of the PTA

Estimated annual revenue from distribution frames is deducted from costs used in the calculation of the monthly charges for access to local loops.

The PTA accepts that the increase of the monthly charge for access to distribution frames will be in accordance with increase in local loop prices from 2011, or 22%. The monthly charge for access to distribution frames was last decided in 2011 and the increase is in accordance with the increase in local loop lease from that time.

In accordance with the above, the price for access to distribution frames will increase from ISK 905 to ISK 1,104 per month for 100 connections panel. Revenue for the charges for access to distribution frames is in the same way estimated 22% higher than revenue of monthly charges for the year 2016, that is to say ISK [...]. This amount is deducted from the cost base used for calculating the monthly charge for access to copper local loops.

2.7 Number of lines

With the changes proposed in the additional consultation (see Section 1.2 here above). The access charge to the local loop is no longer divided into upper and lower frequency ranges and there is no longer provision for varying charge depending on whether the local loop is in a street cabinet or telephone exchange. For this reason, it is no longer necessary to allow for varying equivalences of local loops. For this reason, calculations of monthly charges are based on the total number of leased local loops. The number of local loops in use at the end of 2016 was [...].

2.8 Calculation of lease price

2.8.1 Mila cost analysis

The Mila revised cost analysis dated 9 March 2017 contains the following table which shows the total cost of the Mila copper system less revenue from setup charges, distribution frames and other one-off costs:

	2012	2014	2016
Annual capital cost.....	[...]	[...]	[...]
Opex.....	[...]	[...]	[...]
Inventory cost.....	[...]	[...]	[...]
Deduction for access to distribution frame.....	[...]	[...]	[...]
Deduction for setup charges.....	[...]	[...]	[...]
Deduction for other revenue.....	[...]	[...]	[...]
	[...]	[...]	[...]

In its calculations of the inventory cost Mila took into account the inventory levels at the end of 2016.

The Mila conclusion is that the copper local loop costs that are collected through monthly charges amount to about ISK [...]. In accordance with this, the number of local loops in use is [...] which means that the monthly charge for access to local loop is ISK **1,406**.

2.8.2 The position of the PTA

The position taken by the PTA is based on the initial cost model submitted by Míla on 27 March 2015. The model was updated several times during PTA processing of the cost analysis and the model from last 9 March is Míla's final conclusion after PTA requested an update of the model with 2016 data.

The main criteria of the updated Míla cost model are as follows:

- Operational costs are based on operations of 2016.
- Investments were indexed using the building cost index to the average price of 2016 while investment forecast for 2017 and 2018 were also included.
- The number of units is based on the number of leased local loops at the end of 2016.
- The weighted average cost of capital (WACC) is 7.0% for the year 2016.

In accordance with the above, the PTA endorses the Míla conclusion on opex, annual capital cost, setup charges, monthly charges for access to distribution frames and number of lines, pursuant to the updated Míla cost analysis dated 9 March 2017.

Míla calculates that the cost of capital tied in inventory in 2016 is ISK [...] given a 7.0% weighted average cost of capital (WACC). Míla inventory status was ISK [...] at the end of 2016. The PTA refers to the ruling of the Appellate Committee for Electronic Communications and Postal Affairs no. 4/2009, dated 15 January 2010 with respect to cost analysis for open access to local loops. The ruling prescribes that the PTA take into account Míla funds that are tied in operating capital, which amount to the average position of inventory that relate to the operation and development of the access network. According to an email from Mila dated last 16 March the average inventory status was ISK [...]. According to this, the cost of capital tied in inventory is ISK [...] for the year 2016.

The following table shows the total cost of the Míla copper system less revenue from setup charges, distribution frames and other one-off costs:

	2016
Annual capital costs	[...]
Opex	[...]
Inventory cost	[...]
Deduction for access to distribution frame	[...]
Deduction for setup charges	[...]
Deduction for other revenue	[...]
	[...]

According to the above the annual cost for the company, including reasonable profit, which is recouped with monthly charges for access to local loops, is approximately ISK [...]. By comparison this cost was a little under ISK [...] in 2012, which therefore represents an decrease of approximately [...]. [...] It is estimated that Mila annual revenue will increase by approximately 5%.

As stated in Section 2.7 here above, the number of local loops were [...] in December 2016. According to this the monthly charge for full access to the local loop is **ISK 1,406**. This is fully unbundled access to the local loop, as no other configuration will be offered. Fully unbundled access to the local loop now costs ISK 1,386, which represents an increase of about 1%. There is however quite a significant increase in base access to the local loop, that is to say solely to the lower frequency range, which now costs ISK 1,042, which is an increase of about 35%. It should be noted in this connection that this type of access, that is to say solely voice telephony access, has been decreasing through the years and is not a large part of leased local loops today. Such access will virtually disappear when the Siminn PSTN system has been decommissioned and Siminn allows for this system being phased out with this process commencing soon and being completed in 2020. Siminn has by far the largest PSTN system in this country and it is likely that PSTN systems of other electronic communications companies will subsequently be decommissioned.

There will therefore no longer be a special charge for the upper and lower frequency ranges and the charge for the upper frequency range will therefore no longer be included in the price for bitstream in Access Options 1-3. The prices for Access Options 1-3 has therefore been recalculated accordingly.

The local loop charge (for the whole local loop) will in the future be collected in the same manner as for the lower frequency range of the local loop (the PSTN service). If on the other hand the lower frequency range of the local loop is not being used then the party using the upper frequency range will pay for the local loop, that is to say the Internet service provider. If the local loop is neither used to provide Internet service nor PSTN service, then the party, providing IP-TV service pays the local loop charge and if VoIP service is solely provided through the local loop then this party will pay the local loop charge. In other words, the ranking of the service paying the local loop charge is as follows: PSTN, Internet, IP-TV and VoIP. PTA believes that these arrangements will cause minimum disruption compared to the current practice.

2.8.3 Price range pursuant to Recommendation from the EU Commission

As stated here above, it was stated in PTA Decision no. 21/2014 that the Administration was authorised to reject prices which lay outside the price range proposed by the EU commission at

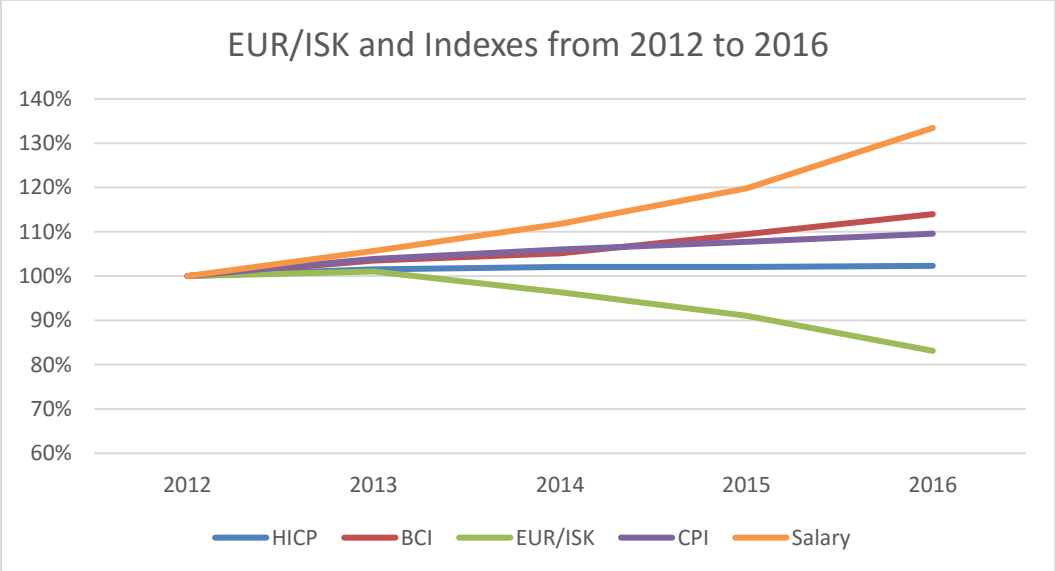
any given time, see the EU Recommendation on the application of consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment for next generation access networks (NGA).

As is stated in Appendix A to the PTA Decision no. 21/2014, the price band specified in the Recommendation is €8 - €10 given the price level of 2012. There it is also stated that should the PTA decide to reject conclusions of the cost analysis on access to copper local loops, the Administration will decide price on the basis of the average of those access prices that are decided by the regulatory authorities on comparable competition markets and that are in accordance with the above specified Recommendation. It is also stated in the Decision that PTA may accept a price for access to the local loop which is outside the price band specified in the Recommendation under exceptional circumstances in the case. Such conditions may e.g. be created by the great fluctuation in exchange rate of the Icelandic krona.

This means that the PTA is obliged to examine whether the price should be decided for local loop lease on the basis of the Míla cost analysis or on benchmarking.

The initial cost analysis was submitted by Mila in March 2015 and at the time the PTA calculated the price band and found that it would be ISK **1,222** to ISK **1,533**.

The PTA has now recalculated the price brand. In order to index the price range to the year 2016 the PTA uses the Harmonised Index of Consumer Prices (HICP)[12] and the € average exchange for 2016. According to this the indexed price band was €8.18 - €10.23 in 2016 price levels or ISK 1,093 to ISK 1,367. It is clear that the local loop price which was within the price band in 2015 is now outside this recalculated price band. If the price band €8 to €10 as it was presented in 2012 is on the other hand converted to ISK at the average exchange rate in 2012 and then indexed to 2016 prices using Building Cost Index (BCI) the price band would become ISK 1,466 to ISK 1,832. The reason for this divergence is best seen if one examines the development of the exchange rate and indices in this country and in Europe since 2012[13].



Clearly, the krona has strengthened in recent years while the HICP in Europe remains virtually unchanged. That has contributed to the decline in the price band using the HICP together with

[12] Information on HICP can be found on the Eurostat site (http://ec.europa.eu/eurostat).
[13] The graph is based on data from Eurostat, the Central Bank of Iceland and Statistics Iceland. The graph shows the value as a percentage of the base values in 2012.

the exchange rate of 2016. Although the purchasing prices of imported goods have decreased to importing companies, domestic indexes have not declined correspondingly which to a great extent is due to the raise in national wages. As a result, the same price band calculated by using Building Cost Index evolved in the opposite direction.

Míla has requested that the monthly price for access to a local loop be ISK 1,406. This price does not fall within the price band calculated using HICP and the average exchange rate in 2016, i.e. ISK 1,093 kr. to 1,367. PTA refers to what is stated in the aforementioned Decision no. 21/2014:

> *"The PTA can however endorse prices for access to local loops that lie outside the price band specified in the Recommendation in the event of special circumstances. Such circumstances could for example result from very significant changes to the exchange rate of the ISK."*

PTA believes that this exception applies now and will therefore use the result of Míla cost analysis instead of benchmarking to decide the monthly price for the copper local loop. In light of the price development in this country and comparison of prices for fibre local loops that are available in this country, PTA believes that it would not contribute to price stability to decide the local loop prices on the basis of benchmarking this time. Price comparison would lead to a decrease in the monthly price for access to copper local loops in this country that could distort the competitive position of fibre local loops and could also lead to that Mila would not be able to recover the company's cost, plus a reasonable profit, of the copper network.

2.9 The PTA conclusion

In PTA Decision no. 21/2014 the Administration imposed an obligation for price control on Míla for wholesale access to the company's copper access networks provided at a fixed location and related facilities, with the authority of Article 32 of the Electronic Communications Act. Pursuant to Paragraph 4 of Article 32 of the same Act it was prescribed that the tariff for the access provided through copper local loops should be cost-oriented having fulfilled specific conditions.

Pursuant to the PTA Decision, Míla submitted its initial cost analysis for access to Míla copper local loops and distribution frames on 27 March 2015. The cost analysis was based on historical costs from 2014.

Concurrent to the PTA review of cost analysis on market 4/2008, PTA has been reviewing Mila proposed tariffs based on cost analysis for terminating segments of leased lines (market 6/2008) and bitstream access (market 5/2008). Because of the interdependence of these tariffs it is necessary that they enter into force at the same time and the PTA will therefore publish Decisions on the review of these tariffs at the same time.

PTA has now examined the cost models and Mila's tariff structures in these three markets (4/2008, 5/2008 and 6/2008). Furthermore, stakeholders had an opportunity to comment on the methodologies used to calculate the prices and the tariff structures. However, as the cost models used costing information from 2014 the PTA requested that Mila would upgrade the cost models in these markets with costing data for the 2016 financial year.

In accordance with the PTA request, Mila has submitted updated cost model and it is now based on 2016 cost data. The calculated price for an access to the copper local loop is based on

operating cost (opex) for the year 2016. Capital expenditure (capex) in the model is based on the Mila investments up to 2016 as well as the Mila investment plans for 2017 and 2018.

As stated here above, the PTA has examined whether the Míla conclusion on the monthly price for fully unbundled access to the copper local loop is within the price range specified in the PTA Decision no. 21/2014. It came to light that the price band had decreased considerably because of the development in the rate of exchange of the Icelandic krona and therefore the Míla conclusion from the cost model was not within the price band. As stated in section 2.8.3 above the PTA conclusion is that prices for access to copper local loops should be based on Mila's cost model although the result of the model is a local loop price which is higher than the price band.

During processing of the cost analysis by the PTA, the Míla cost model was updated on several occasions and the PTA endorses the conclusion in the cost model from last 9 March which shows the Míla final conclusions.

In accordance with the criteria discussed here above, the PTA endorses the Mila conclusion that the monthly charge for access to the copper local loop shall be **ISK 1,406** ex VAT, irrespective of whether access is to a telephone exchange or to a street cabinet. The setup charge for local loops will furthermore remain unchanged at ISK 3,166 while access to distribution frame will be ISK 1,104/month for each 100 lines.

In the following table the new prices are compared to Mila's current tariff:

Monthly charge	**Current price**	**New price**	**Change in %**
Local loop - fully unbundled access	1,386	1,406	1%
Local loop - lower frequency range	1,042	1,406	35%
Local loop - upper frequency range	1,386	1,406	1%
Local loop - shared access to upper frequency range	344	0	-100%
Local loop - shared access to lower frequency range	1,042	1,406	35%
Access to distribution frame (each 100 lines)	905	1,104	22%

Setup fee	**Current price**	**New price**	**Change in %**
Setup fee for a local loop	3,166	3,166	0%

It is assumed that Mila total revenue from monthly charges of copper local loops will increase by about 5.3%, according to the new tariff in accordance with the increase in Mila costs and reduction in number of local loops.

A decision on the review of the Mila wholesale tariff for copper local loops will be published at the same time as PTA decisions on its review of the wholesale tariffs for Mila bitstream and terminating segments of leased lines.

Pursuant to the PTA Decision no. 21/2014, the price control obligation on Míla will also cover fibre-optic to street cabinets. Mila has submitted cost analysis for fibre-optic to street cabinets with a cost analysis of fibre-optic to companies on Market 6 and this analysis is being processed by the PTA.

It is also stated in the PTA Decision no. 21/2014 that the tariff should be reviewed annually in accordance with the annual update of the cost analysis in accordance with the cost model which has now been approved. Accordingly, Mila shall submit an update on the cost model before 1 April 2018. If no major changes occur in the cost model PTA expects that the authority will publish a decision on the new charges before the end of 2018. It should be noted in this context that the PTA has begun the analysis of markets 3a and 3b according to the new ESA recommendation from 2016 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation, these markets include similar services as markets 4/2008 and 5/2008. After the Authority has analysed these markets it will be decided whether the obligations that were imposed on Mila in accordance with the PTA Decision no. 21/2014 will be maintained.

The Decision

The Post and Telecom Administration endorses the Míla ehf. cost analysis dated 9 March 2017.

The monthly charge for access to copper local loop shall be ISK 1,406 ex VAT irrespective of whether access is to telephone exchange or street cabinet. The setup charge for local loops will furthermore remain unchanged at ISK 3,166 while access to distribution frame will be ISK 1,104/month for each 100 lines.

Prices are ex VAT.

The new tariff shall come into force concurrently with the new Mila tariff for bitstream access. Míla ehf. shall notify the coming into force of the new tariff with at least 60 days' notice. Míla shall also update its reference offer for open access to the local loop no later than on the coming into force of the above specified price changes.

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 XX 2017

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Hrafnkell V. Gíslason

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Óskar Þórðarson

Appendix I: Results of the national consultation