

Decision on designation of providers with significant market power and imposition of specific obligations in the markets for voice call termination on the public telephone network at a fixed location (Market 1)

Case no. 1705298

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Summary

Based on the analysis of the relevant markets for call termination on the public telephone network provided at a fixed location (hereinafter call termination on fixed networks, Market 1), pursuant to Section 3-3 of the Electronic Communications Act, the Norwegian Communications Authority (Nkom) designates Altibox AS, Broadnet AS, eRate AS, ICE Norge AS, NextGenTel AS, Orange Business Norge AS, Puzzel AS (formerly Intelcom Group AS), Telenor ASA, Telia Norge AS¹ and Verizon Norway AS as providers with significant market power in their respective termination markets.

Nkom has identified a number of competition problems within the relevant markets for call termination on fixed networks, of which excessive pricing is the most central. The competition problems are largely due to the existence of absolute entry barriers in the relevant markets. At present it is not possible to offer competing products in other providers' termination markets, nor is it likely that this will happen within a reasonable time horizon. Each provider thus has a monopoly on termination on its own fixed network. Combined with the calling party pays (CPP) principle, absolute entry barriers mean that the providers have little incentive to set efficient prices for call termination on their own fixed network. Excessive pricing in the wholesale market for termination may have an anti-competitive effect if the excessive price is passed on to the retail market.

In light of the above, Nkom regulates the markets for call termination on the basis of Principle 2 in Nkom's remedies document. This means that the interests of consumers shall be protected, since replication of infrastructure will not be able to remedy the competition problems in question.

Nkom has assessed the appropriateness and proportionality of the remedies available and has concluded that all providers with significant market power must accommodate any reasonable request for interconnection in the form of termination on the providers' fixed networks. Telenor will additionally be directed to accommodate any reasonable request for co-location if this is requested along with the termination product.

Nkom furthermore imposes a non-discrimination requirement on all of the regulated providers. With regard to transparency obligations, Telenor is directed to prepare and publish reference offers, while the other providers only are directed to publish their termination rates.

The objective of Nkom's regulation of the termination rates is that all providers of termination shall have prices based on costs of an efficient operator, which means that prices will also be symmetric. Based on the updated cost models, Nkom imposes the following price cap regulation on all providers designated as having significant market power in the markets for termination on fixed networks:

	From 1 July 2019	From 1 January 2020	From 1 January 2021
Maximum price for termination per minute (øre)	0.5	0.5	0.4

Table 1 Maximum price per terminated minute within interconnection area, stated in øre excluding VAT.

¹ In July 2018, Telia Company AB acquired Get TDC Norge. The merger was approved by the Norwegian Competition Authority on 5 October 2018.

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Annex 1: Analysis of the wholesale markets for call termination on public telephone networks provided at a fixed location (Market 1)

Annex 2: Model documentation for LRIC core model, version 2.3F

Annex 3: LRIC core model (Excel file)

Annex 4: Comments from ESA

1 Introduction and background

1.1 Introduction

1. Section 3-2 of the Act of 4 July 2003, no. 83, concerning electronic communications (the Electronic Communications Act) requires Nkom to define relevant markets for products and services and geographical markets in accordance with the recommendation of the EFTA Surveillance Authority (ESA) concerning relevant markets (the Recommendation). Pursuant to Section 3-3 of the Electronic Communications Act, Nkom must analyse the various markets for electronic communication and identify providers with significant market power. If one or more providers is(are) designated as having significant market power, at least one of the specific obligations provided for in Chapter 4 of the Electronic Communications Act must be imposed. Specific obligations are imposed on the basis of concrete assessment of competition problems in the relevant market and the position of the relevant provider(s) in this market.

2. Nkom has undertaken several rounds of analysis of the markets for call termination on public telephone networks provided at a fixed location, hereinafter referred to as the markets for call termination on fixed networks. Previous analyses have been based on the applicable market definitions recommended by ESA. In the 2004 Recommendation, the market for call termination on fixed networks was designated as Market 9. The market was retained in the ESA Recommendation from 5 November 2008, but was now referred to as Market 3. The definition of the market remained unchanged.

3. ESA has conducted a further revision of the list of relevant markets and adopted a new recommendation on 11 May 2016.² The wholesale markets for call termination on fixed networks are still included in this list, but are now referred to as Market 1.

4. The Commission adopted new guidelines for analysis and assessment of significant market power, 26 April 2018. It is expected that ESA will adopt equivalent guidelines, and on practical grounds, the basis applied is the Commission's new guidelines (hereinafter referred to as the SMP Guidelines)³.

5. The previous analyses from Nkom are dated 24 March 2006, 8 April 2008, 1 August 2011 and 22 January 2016, respectively. The table below provides an overview of Nkom's decisions and providers that have been designated as having significant market power:

² EFTA Surveillance Authority Recommendation 11 May 2016 (<http://www.eftasurv.int/media/decisions/College-decision---Revision-of-ESA-Recommendation-on-Relevant-Markets-susceptible-to-ex-a.pdf>)

³ EU SMP guidelines 26. April 2018 (<https://ec.europa.eu/digital-single-market/en/news/communication-smp-guidelines>)

Nkom's decisions	Providers designated as having significant market power
24 March 2006	Consorte AS, Equant Norway AS, MCI WorldCom AS, NetCom AS, NextGenTel AS, Priority Telecom Norway AS, TDC Song AS, Tele2 Norge AS, Telenor ASA, Telio AS, Ventelo Norge AS
8 April 2008	Altibox AS
1 August 2011	Altibox AS, Hafslund Telekom AS, Intelecom Group AS, Network Norway AS, NextGenTel AS, Orange Business AS, TDC AS, Tele2 Norge AS, Telenor ASA, TeliaSonera Norge AS, Telio Telecom AS, Ventelo AS, Verizon Norway AS
22 January 2016	Altibox AS, Intelecom Group AS, Intelligent telecom services AS, NextGenTel AS, Orange Business AS, Phonero AS, TDC Get, Telenor ASA, TeliaSonera Norge AS, Verizon Norway AS

Table 1 Providers with significant market power in the markets for call termination on fixed networks.

6. Nkom has conducted a new analysis of the markets for call termination on fixed networks (Annex 1). In the analysis, Nkom concludes that Altibox AS, Broadnet AS, eRate AS, ICE Norge AS, NextGenTel AS, Orange Business Norway AS, Puzzel AS (formerly Intelecom Group AS), Telenor ASA, Telia Norge AS⁴ and Verizon Norway AS have significant market power in their respective termination markets.

7. The draft decision was submitted for national consultation during the period from 5 November to 28 November 2018. Nkom did not receive any consultation responses. Nkom prepared a draft decision and presented an English translation of the documents for ESA notification, cf. Framework Directive article 7 and ESA's recommendation on Article 7⁵.

8. ESA did not have any comments in their letter of 11 March 2019 on the proposed marked definition, the designation of providers with significant market power or the proposed obligations.

9. The decision has a time horizon of two to three years.

1.2 Legal basis

10. The regulatory framework for electronic communication is based on five directives adopted by the European Union (EU).⁶ The directives have been implemented in Norwegian law through the Electronic Communications Act and associated regulations, including the Regulation of 16 February 2004 on electronic communications networks and services (the Electronic Communications Regulation).

⁴ In July 2018, Telia Company AB acquired Get TDC Norge. The merger was approved by the Norwegian Competition Authority on 5 October 2018.

⁵ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.C_.2011.302.01.0012.01.ENG

⁶ Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services (Framework Directive); Directive 2002/20/EC on the authorisation of electronic communications networks and services (Authorisation Directive); Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive); Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive); Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

11. According to these regulations, the obligations for providers with significant market power are determined individually on the basis of a market analysis and with a limited forward-looking time horizon.⁷ Particular attention must be paid to the expected pro-competitive effect of the relevant remedies.

12. In choosing specific obligations, Nkom has taken into account the considerations contained in Nkom's revised remedies document of 12 June 2009.⁸ This document is based on the "Revised ERG Common Position on the Approach to remedies in the ECNS regulatory framework", prepared by the European Regulators Group for electronic communications networks and services (ERG).⁹ The guidelines and principles embodied in the ERG remedies document are intended to stimulate the development of the single market for electronic communications networks and services as well as facilitate a uniform and consistent regulatory practice in the various member states.

1.3 Structure of the document

13. This decision consists of a main document, containing the background and reasoning behind the obligations that are being imposed, and three annexes. Annex 1 presents an analysis of the wholesale markets for call termination on public telephone networks provided at a fixed location. Annex 2 contains model documentation for the LRIC model, version 2.3F. The LRIC model is included as Annex 3 and consists of a separate Excel file. Annex 8 contains ESA's comments to Nkom's draft decision.

14. In Chapter 2, providers with significant market power in the termination markets are identified on the basis of the market analysis in Annex 1. Chapter 3 presents an overview of the regulatory starting point for the choice of remedies, while Chapter 4 gives an overview of current specific obligations in the markets for call termination on fixed networks. Chapter 5 provides a description of potential competition problems in the termination markets. Chapter 6 discusses general principles for the use of remedies. Based on the preceding chapters and the attached market analysis, in Chapter 7 Nkom discusses the choice of specific obligations. The specific obligations that are being imposed are presented in Chapter 8, while the relationship to the existing obligations is described in Chapter 9. Chapter 10 contains information on when the decision will enter into force and appeal options.

2 Designation of providers with significant market power

15. On the basis of the analysis of the markets for call termination on fixed networks (Annex 1) and pursuant to Section 3-3 of the Electronic Communications Act, Nkom designates the following as providers with significant market power in the respective markets:

- Altibox AS
- Broadnet AS
- eRate AS
- ICE Norge AS

⁷ See further details about the time horizon in the ESA guidelines for market analyses and assessment of significant market power, paragraph 20.

⁸ The document is published on Nkom's website <http://www.nkom.no/> under the SMP menu item.

⁹ In 2009, ERG was replaced by the Body of European Regulators for Electronic Communications (BEREC). This document was revised in May 2006, and is published on BEREC's website: <http://www.erg.eu.int/>

- NextGenTel AS
 - Orange Business Norge AS
 - Puzzel as (formerly Intelecom Group as)
 - Telenor ASA
 - Telia Norge AS
 - Verizon Norway AS
16. For further details of the justification, see Annex 1.

3 Regulatory basis for the choice of remedies

17. Pursuant to Section 3-4(1) of the Electronic Communications Act, one or more specific obligations in accordance with Sections 4-1, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9 and 4-10 shall be imposed on an undertaking with significant market power. The relevant obligations for termination on fixed networks are:

- Access obligations, cf. Sections 4-1, 4-2, 4-4 and 4-5 of the Electronic Communications Act.
- Obligation of non-discrimination, cf. Section 4-7 of the Electronic Communications Act.
- Obligation to publish standard reference offers, cf. Section 4-6 of the Electronic Communications Act.
- Obligation of transparency, cf. Sections 4-6 and 4-8 of the Electronic Communications Act.
- Obligation of accounting separation, cf. Section 4-8 of the Electronic Communications Act.
- Price controls and obligation of cost accounting (cf. Section 4-9 of the Electronic Communications Act)

18. Pursuant to Section 3-4(2) of the Electronic Communications Act, obligations may in special cases be imposed beyond what follows from these provisions. In such cases, the consultation procedure in Section 9-3 of the Electronic Communications Act is to be followed.

19. In its remedies document, Nkom has reviewed the principles that in general will guide Nkom in its choice of remedies:

Principle 1: Substantiated decisions shall be prepared in accordance with the national regulatory authority's obligations pursuant to the directives.

Principle 2: The interests of consumers shall be protected when duplication of infrastructure is not assumed to be feasible.

Principle 3: In markets where Nkom considers it likely that duplication of infrastructure may be attained over time, Nkom will ensure that its use of remedies supports the transition to a market characterised by sustainable competition.

Principle 4: Remedies shall be designed to incentivise compliance.

20. In accordance with the general principles of administrative law and the proportionality principle in European Community law, any obligations Nkom imposes on providers with significant market power shall be appropriate to furthering the purposes of the Electronic

Communications Act. The main objectives of the Electronic Communications Act are stated in Section 1-1, which reads:

“The purpose of the Act is to secure good, reasonably priced and future-oriented electronic communications services for the users throughout the country through efficient use of society’s resources by facilitating sustainable competition, as well as fostering industrial development and innovation.”

21. In addition to Section 1-1, a special purpose provision has been included in Section 3-4(3). This provision lays down requirements for the use of specific obligations:

“Obligations pursuant to the first and second paragraphs that are imposed in the individual case shall be appropriate to promote sustainable competition as well as facilitate national and international development in the market. The Authority may amend obligations imposed.”

22. ESA published its Recommendation on the regulation of termination rates in fixed and mobile networks on 13 April 2011.¹⁰ In the design of the price regulation, Nkom has taken account of the guidance given there.

4 Current specific obligations

23. All of the providers subject to this decision, except eRate AS, Broadnet AS and ICE Norge AS, are currently required to comply with specific obligations pursuant to Chapter 4 of the Electronic Communications Act.

24. In accordance with Nkom's decision of 22 January 2016, the following specific obligations apply to Telenor in the termination market:

- The obligation to accommodate reasonable requests for interconnection in the form of termination, including co-location where this is requested together with the termination product. The obligation to negotiate such agreements without undue delay, cf. Sections 4-2(3), 4-1 and 4-4(3) of the Electronic Communications Act. On request, Telenor must be able provide the other party with documentation of time spent.
- The maximum price for termination within the interconnection area is NOK 0.006/minute, cf. Section 4-9 of the Electronic Communications Act.
- An obligation to set reasonable interconnection rates, cf. Section 4-9 of the Electronic Communications Act.
- Co-location charges shall be cost-oriented, and Telenor shall keep cost accounts, cf. Section 4-9 of the Electronic Communications Act.
- Non-discrimination obligation related to call termination on fixed networks. This obligation applies both between external operators and between internal and external operators, cf. Section 4-7(1) and (2) of the Electronic Communications Act.
- An obligation to formulate and publish a reference offer for interconnection, cf. Section 4-6 of the Electronic Communications Act. Notice shall be given of changes disfavouring the other contractual partners at least two months before they are implemented.

¹⁰ EFTA Surveillance Authority Recommendation of 13 April 2011 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EFTA States, see: <http://www.eftasurv.int/media/internal-market/ESAs-Recommendation-on-termination-rates.pdf>

25. In accordance with Nkom's decision of 22 January 2016, the following specific obligations apply to Altibox AS, Intelcom Group AS, Intelligent telecom services AS, NextGenTel AS, Orange Business AS, Phonero AS, TDC Get, Telia Norge AS og Verizon Norway AS, respectively, which are all designated as providers with significant market power in the termination market:

- Obligation to accommodate reasonable requests for interconnection and to negotiate such agreements without undue delay, cf. Sections 4-2(3), 4-1 and 4-4(3) of the Electronic Communications Act. On request, the provider must also be able to present the other party with documentation of time spent.
- The maximum price for termination within the interconnection area is NOK 0.006/minute, cf. Section 4-9 of the Electronic Communications Act.
- An obligation to set reasonable interconnection rates, cf. Section 4-9 of the Electronic Communications Act.
- Non-discrimination obligation related to call termination on fixed networks. This obligation applies both between external operators and between internal and external operators, cf. Section 4-7(1) and (2) of the Electronic Communications Act.
- An obligation to publish its own termination rates, including the criteria for any rebates, cf. Section 4-6 of the Electronic Communications Act. Notice shall be given of changes disfavouring the other contractual partners at least two months before they are implemented.

5 Competition problems

5.1 Competition problems in general

26. A provider with significant market power would be able to conduct itself with the purpose or intention of driving competitors out of the market, preventing potential competitors from entering the market and/or exploiting consumers. Such behaviour is referred to as competition problems.

27. Nkom's remedies document contains a general description of potential competition problems within the relevant markets. Based on the practical experience of the national regulatory authorities in Europe¹¹, the document identifies 27 standard competition problems.

28. Specific obligations imposed on providers designated as having significant market power must be suitable to remedy actual or potential competition problems in the relevant market. The imposition of specific obligations is not conditional on the abuse of market power actually taking place. It is sufficient that a competition problem might potentially arise under given conditions.

29. The primary cause of the competition problems in the termination markets is that providers of fixed telephony with their own customer access network, and/or that control the possibility for call termination, have a de-facto monopoly for termination of calls to customers connected to these networks. Within the time horizon of the market analysis, new technical solutions that change this problem cannot be expected. As long as the person who calls pays for the call ("calling party pays" or CPP), the possibility of functioning competition is very limited. This factor can be characterised as the core problem in the market for call termination.

¹¹ See Nkom's remedies document of 12 June 2009, clause 2.2.

30. The competition problems that Nkom has identified are in principle relevant for all termination in the fixed network. However, the fact that Telenor accounts for a large share of the overall termination in the fixed network means that some of the competition problems largely relate to Telenor's call termination service rather than the other providers' call termination services. For the competition problems where it is natural to distinguish between Telenor and other providers of termination services, this is commented on explicitly below.

31. Nkom notes that due to the structure of the markets, the competition problems in the termination markets are the same for PSTN/ISDN telephony and broadband telephony.

32. In the following, competition problems are discussed in connection with the markets for call termination on fixed networks. The point of departure for the assessment of competition problems is a "modified greenfield approach", namely a requirement that the relevant market was not subject to ex ante regulation. The competition problems in this chapter largely correspond to the competition problems Nkom identified in its previous decision. In Nkom's view, there have been no market or technological changes in the relevant market that might change the terms of competition, so that these potential competition problems still apply to the markets for call termination on fixed networks.

5.2 Denial of interconnection

33. In most cases a provider will have an incentive to offer interconnection in the form of termination. The utility value of a network increases with the number of users connected to it, which suggests that providers will want to enter into interconnection agreements with other providers.

34. Providers with few end-users will normally find it beneficial to terminate calls from providers with large retail volumes. In this way more people will have the opportunity to contact the smaller provider's end-users, making the smaller provider's service more attractive.

35. For larger providers, it may be less important to enter into an agreement on interconnection with small providers. There will be less appreciable loss of quality of their mobile service if the provider's own end-users cannot be called by the smaller provider's customers. Such a denial of interconnection could represent a significant competition problem, since it will complicate and potentially make it impossible for the affected provider(s) to engage in competitive activities. In addition, such behaviour might result in reduced consumer welfare in that the objective of any-to-any connectivity is not attained.

36. Section 4-2 (3) of the Electronic Communications Act requires providers with significant market power to accommodate reasonable requests for interconnection within those areas in which the provider has significant market power. This provision thus reduces the competition problems related to denial of interconnection, since the obligation to offer call termination on their own networks is authorised directly in the Electronic Communications Act for all the providers covered by this decision.

37. As the obligation in Section 4-2(3) is limited to call termination agreements with the provider's own end-users, the providers in question will also have an incentive to refuse to enter agreements regarding the purchase of termination from other providers. A denial of interconnection, in the form of refusing to buy termination from others, can therefore potentially be used to harm competitors that are smaller or of an equal size. If fewer callers can communicate with their network, the service becomes far less attractive to the customer. Such behaviour will also be in conflict with the goal of any-to-any connectivity.

38. A provider that does not have an incentive to conclude interconnection agreements can make the conclusion of such agreements difficult by resorting to various forms of delaying tactics. This method is closely related to a denial of interconnection. Typically, such a practice

may be resorted to where there is an obligation to meet reasonable requests for interconnection, but where nothing has been decided on how efficient the negotiations are to be in terms of the time spent. Thus, delaying tactics may represent a not-insignificant competition problem, even if the access obligation is enshrined in law.

5.3 Excessive pricing

39. Excessive pricing is the main competition problem in the relevant termination markets. The calling party or network owner with which the call originates has no control over which network the called end-user is connected to. The network owner who originates the call therefore in reality has no choice but to carry out the call and then pay the price required by the terminating provider (the CPP principle). This creates a monopoly situation for the receiving network owner, where it has the opportunity to demand an excessive price for termination on its network. Undertakings with significant market power in the markets for call termination on fixed networks thus have the incentive and opportunity to set termination rates that are higher than those they could charge in a market with functioning competition.

40. In a market with competition, it is not likely that providers would have been able to sell their product if it was priced well above other established providers' comparable products. In the call termination markets, however, there is no competition in offering termination on the respective networks, and providers are therefore not forced to take such issues into consideration. In markets where termination rates are set substantially higher than underlying efficient costs, pricing in the long term could have adverse consequences in terms of resource use. Excessive pricing of termination results in costs being shifted to other providers and ultimately their end-users. In Nkom's view, this is an unfortunate distortion of competition.

41. High and asymmetrical prices among providers can also lead to differentiated rates for calling to or between the different fixed networks. In Nkom's view, such a development is unfortunate given the need for transparency in the retail market.

42. Both Telenor and the other providers will have incentives to impose excessive charges, even though Telenor's strong negotiating position to some extent may dampen the other providers' ability to set their own termination rates. Experience has shown, however, that there have been several examples of smaller providers not subject to regulated maximum prices having set significantly higher prices than the regulated level, without Telenor having been able to discipline this, cf. the analysis in Annex 1, Chapter 4.3. However, in the decision dated 1 August 2011, all providers with significant market power were made subject to a price cap for termination. Since 1 April 2016 the price cap has been 0.6 øre per minute. Historically, all providers of termination on fixed networks subject to a price cap have set their termination rate at the same level as the price cap. No provider has taken the initiative to lower the price.

43. Providers of termination services that compete at the retail level will also be able to set termination rates that mutually favour each other and in reality entail tacit collusion. This can typically be the case if high, reciprocal termination rates are negotiated in a situation where termination rates are not regulated.

44. Symmetrical, high termination rates in the fixed network would entail a competitive disadvantage for providers of fixed telephony based on carrier pre-selection, providers of mobile telephony and providers of international calls terminating in Norway. In this manner, such tacit collusion among providers of termination services in the fixed network may represent a competition problem.

45. Since Telenor's termination rates have been subject to an obligation of cost orientation since the liberalisation of the market for fixed telephony in 1998, tacit collusion between Telenor and one or more other providers has not been a real competition problem in Norway. Nor has tacit collusion among providers other than Telenor appeared to have taken place.

Even so, such cooperation will, in Nkom's opinion, represent a potential competition problem if termination rates are not regulated.

5.4 Cross-subsidisation

46. Excessive pricing enables cross-subsidisation in that the extra revenues from termination on fixed networks that exceed the underlying costs can be used to subsidise parts of the operators' own business where earnings do not cover the costs. Asymmetric termination rates will typically enable such a cross-subsidy, and thus represent a competition problem.

5.5 Price discrimination

47. Providers of termination services may have an incentive to offer better prices to internal or certain external providers. For example, it is conceivable that the providers will offer a more advantageous price to companies in the same group or to any prospective partner companies. In the same way, providers that present a greater potential threat than other operators might be charged a higher price than those that do not represent as great a threat.

48. In this context, price discrimination between on-net and off-net calls is also relevant. This form of price discrimination is first and foremost a potential competition problem if the provider has a relatively large share of the total customers in the retail market. This applies to Telenor. This form of price discrimination means that the company operates with a higher termination rate for calls originated on the networks of other providers than for termination of on-net calls. In that case, this could mean that these providers must increase their retail prices to avoid a so-called margin squeeze. Such price discrimination could give Telenor's own retail operations a competitive advantage in relation to competitors in the retail market. However, the opportunity to implement such price discrimination will be reduced significantly if termination rates are set at a cost-oriented level.

49. Discrimination between providers may result in increased costs for some providers and may ultimately lead to exclusion from the market. Price discrimination between providers will therefore be a competition problem.

5.6 Non-price discrimination

50. A provider with significant market power may also have an incentive to discriminate between its own or related activities and the activities of others in connection with factors other than price. This discrimination may apply to the interconnection services that are offered, the quality of technical interfaces, the level of service, the quality of information, and so on. It is also conceivable that incentives exist for operators to drag out interconnection negotiations and make undue demands related to interconnection (guarantees, bundling, etc.). Nkom believes such discrimination could distort competition, potentially posing a competition problem in the markets analysed.

5.7 Insufficient notice of price changes

51. Termination rates have traditionally represented a relatively large share of the retail prices for fixed telephony calls. If a provider raises its termination rates without other providers who purchase termination from this provider managing to reflect the price increases in their retail prices, this may cause a weakening of their margins for a period. In cases where the

termination rate is of great importance to the overall pricing of the call product, this may represent a competition problem.

6 Choice of remedies in general

52. In the following, Nkom describes some issues of a general nature related to the choice of remedies in the markets for call termination on fixed networks.

6.1 Possibility of duplication of infrastructure in the markets for call termination on fixed networks

53. According to the account of Principles 2 and 3 in Nkom's remedies document, key to the choice of remedies will be whether or not replication of the infrastructure in the relevant market is feasible (i.e. whether or not bringing about sustainable infrastructure competition is likely). In the event that duplication of infrastructure is possible, the use of remedies shall support possible infrastructure investments, i.e. facilitate dynamic efficiency (Principle 3). If infrastructure duplication is not deemed possible, the interest of consumers is to be protected by making the best possible use of the existing infrastructure (Principle 2). In the latter alternative, more static efficiency is attained.

54. If the market is covered by Principle 2, it will normally be necessary and legitimate to operate with a stricter set of regulatory obligations. As reviewed in Nkom's remedies document, the definition of duplication does not contain a requirement for full end-to-end infrastructure competition. Nor is there any need for several totally independent networks capable of supplying the same service.

55. The markets for termination of calls on the fixed network are somewhat special with respect to the choice between Principle 2 or 3. Even in cases where it would be possible to achieve infrastructure-based competition within fixed telephony in the form of many competing fixed networks, this would not fully remedy the competition problems in Market 1. All providers of termination services on the fixed network have a de facto monopoly on termination of calls on their own network, cf. the attached market analysis. It is impossible for others than the recipient's (the called party's) provider to terminate a given call to the right recipient.

56. Competition at the infrastructure level will not be suited to remedying the potential competition problems identified in Chapter 5. In Nkom's opinion, this means that the markets for call termination of calls on the fixed network must be regulated under Principle 2. Within the period of the decision, there is no reason to expect that others than the network owner itself will be able to terminate calls to their own customers.

57. In Nkom's opinion, the situation for termination of VoB is, for the time being, the same as for termination of PSTN/ISDN. In both cases, termination takes place on the basis of reference interconnection offers, and providers of VoB have the opportunity to set their own termination rates (within the framework of the price caps set).

58. On this basis, Nkom has concluded that both termination of PSTN/ISDN and VoB should still be regulated on the basis of Principle 2. This applies to all markets for termination on individual fixed networks, including termination for retail customers for both access-dependent and access-independent VoB providers.

6.2 General remarks on proportionality

59. The principle of proportionality is discussed in more detail in Proposition no. 58 (2002–2003) to the Odelsting in the remarks concerning Section 3-4 of the Electronic Communications Act.

“The obligations imposed shall be proportionate, non-discriminatory, based on objective and fair criteria and be publicly available. Proportionate means that obligations imposed regarding access or significant market power with appurtenant conditions are suitable to compensate for a lack of sustainable competition and will help to promote consumer interests and, where possible, contribute to national and international development. The burdens of the remedies imposed are to be proportionate with regard to what they seek to achieve. This also permits the authorities to link the obligations to certain areas of the relevant market if appropriate.”

60. This principle means that when choosing from several alternatives, all of which could promote the objectives equally effectively, Nkom should choose the least burdensome alternative. The content of the proportionality principle is described in more detail in Nkom's remedies document¹². It states that the principle of proportionality implies that measures that are supposed to be suited to realising the objective behind them, should not be more burdensome than necessary in the individual case and that the benefits of the intervention are to outweigh the burdens.

61. However, neither the proportionality principle nor the principle of minimal regulation may be cited in support of the argument that according to the regulatory framework, Nkom should not and does not have cause to impose burdensome obligations on undertakings with significant market power. The core of these principles is that stricter obligations than are necessary shall not be imposed. However, the imposition of burdensome obligations such as price controls will hardly be proportionate and necessary in markets where other, less burdensome, obligations are not deemed to be adequate to fulfil the purpose of the regulation.

7 Explanation of the choice of specific obligations in the termination markets

62. In this section, Nkom will assess which specific obligations shall be imposed on the operators designated as providers with significant market power in the markets for call termination on fixed networks. The main purpose is to determine which obligations are best suited to fulfilling the objectives of the Electronic Communications Act and Principle 2 of Nkom's remedies document, and that alleviate identified competition problems. The obligations must also be proportionate.

7.1 Access and interconnection obligations

63. According to Section 4-2(3) of the Electronic Communications Act, all providers with significant market power are required to accommodate reasonable requests for interconnection in the form of termination. This section also stipulates that the assessment of reasonableness shall be the same as in Section 4-1(2) of the Electronic Communications Act.

64. In principle, Nkom considers a request for access in accordance with Telenor's current standard reference offer for termination to be a reasonable request. Likewise, other forms of

¹² Clause 5.6 (page 30) ff.

access or additional services may lie within the framework of the access obligation in this market. Telenor's standard reference offer for interconnection is based on an SS7 interface. Telenor has offered SIP interconnection since the spring of 2017. The introduction of SIP takes place as a gradual transition whereby both SS7 and SIP function in parallel for a period of time. Telenor offers an agreement on SIP interconnection. Now that Telenor offers SIP interconnection, there is reason to believe that the scope of SIP interconnection will increase within this decision's time horizon. Nkom thus believes that requests for SIP-based interconnection would normally be reasonable.

65. Fixed-network providers may have an incentive to refuse to enter agreements about interconnection for services not covered by the obligation in Section 4-2(3) of the Electronic Communications Act. Providers covered by this decision are designated as having significant market power for terminating calls on their own networks. The obligation therefore does not apply to buying termination from other providers. A denial of interconnection in the form of refusing to buy termination may harm competition in the fixed-line telephony market, and may conflict with any-to-any connectivity concerns.

66. In its decision dated 8 April 2008, Nkom imposed a general obligation on all regulated providers in the market for call termination on fixed networks to accommodate reasonable requests for the purchase of call termination from other providers of public telephony services. This decision was overturned in the Ministry of Transport and Communications' decision of 4 December 2008. The Ministry's decision states that Section 4-2(2) of the Electronic Communications Act authorises the imposition of interconnection obligations in specific cases (in other words, not on a general basis, as Nkom had assumed), when necessary to secure any-to-any connectivity. This provision does not require the provider on whom obligations are imposed to be designated as having significant market power in the market to which the obligations relate. If new cases should emerge in which there is a refusal to buy termination, Nkom will assess whether interconnection obligations shall be imposed in accordance with Section 4-2(2) of the Electronic Communications Act in the specific case.

67. In Chapter 5, delaying tactics are described as a potential competition problem in the relevant termination markets. Nkom believes the objective of any-to-any connectivity would not have been adequately safeguarded if the interconnection obligations were not followed up by obligations to complete negotiations within a reasonable time. Article 12, no. 1, second paragraph, of the Access Directive explicitly states that the regulatory authority may impose such obligations on a provider. Nkom believes that Section 4-1 of the Electronic Communications Act provides authority to establish rules on the time spent.

68. An obligation to counteract delaying tactics can be formulated in various ways. Nkom believes that a general obligation that termination agreements shall be negotiated without undue delay is appropriate. In order to ensure compliance with the obligation, it should be combined with a requirement to account for time spent related to interconnection negotiations. Such documentation should be made available upon request to a provider who believes delaying tactics have been used. To prevent the documentation obligation from being unnecessarily burdensome and to give the party who believes they were subjected to delaying tactics the incentive to react relatively quickly, Nkom believes the documentation requirement should be limited in time. A demand for presentation of documentation must therefore be submitted within three months after the relevant negotiations were concluded. A copy of the documentation of the time spent shall in such case be submitted to Nkom without undue delay.

69. Because functional interconnection is of such great importance to competition in the retail market for fixed telephony, and to ensure any-to-any connectivity, Nkom believes it is necessary to impose the above-mentioned interconnection obligations on all providers.

70. Nkom believes that the interconnection obligations are suited to compensating for the identified competition problems related to interconnection not addressed by Section 4-2(3) of the Electronic Communications Act, and are thus suited to realising the goal of sustainable

competition, cf. Section 1-1 of the Electronic Communications Act. At the same time, in Nkom's view, the interconnection obligations go no further than necessary. Nkom believes an obligation to conclude negotiations without undue delay is proportionate, and we cannot see that a prohibition against delaying tactics will inflict any loss of financial interests worthy of protection on providers with significant market power.

71. Nkom believes that the public interest in imposing interconnection obligations exceeds the disadvantages this obligation represents for the providers in question. Furthermore, Nkom cannot see that there are less intrusive remedies that can sufficiently counteract the identified competition problems.

72. Section 11 of the Competition Act may be brought to bear against the use of delaying tactics. Even so, Nkom believes that this provision is less suited than a concrete sector-specific obligation to effectively prevent infringements of obligations pursuant to the Electronic Communications Act. Nkom therefore believes that general competition law is not sufficiently suited to preventing delaying tactics.

73. It follows from Section 4-4 of the Electronic Communications Act that Nkom may impose a co-location obligation on providers with significant market power. This will be most relevant to Telenor, as the company has an extensive infrastructure and as most providers want to enter interconnection agreements with Telenor. The interconnection agreement's division into interconnection areas, products (termination within/outside of interconnection areas, transit, etc.) and requirements related to the interconnection areas in which providers have the use of place-dependent (geographic) numbers, may entail a need for placing equipment connected to Telenor's points of interconnection. Access to co-location related to termination is therefore important to ensure cost-efficient production of telephony services by other providers. Even though Telenor offers such co-location today based on its co-location agreements, Nkom finds it necessary to impose an explicit obligation on Telenor to offer co-location, if a request for co-location is reasonable and is requested together with the termination product.

Conclusion

74. According to Section 4-2(3) of the Electronic Communications Act, providers with significant market power shall be required to accommodate reasonable requests for interconnection in the form of termination. A request for SIP interconnection would normally also be reasonable. Nkom thinks there is also a need to impose on providers with significant market power an obligation to negotiate termination agreements without undue delay, and, at the request of the other party, to document time spent. Further, Nkom thinks that there is a need to impose on Telenor an obligation to accommodate reasonable requests for co-location if this is requested along with the termination product. The decision concerning imposition of interconnection obligations is presented in Chapters 8.1.1 and 8.2.1.

7.2 Non-discrimination

75. In Chapter 5 Nkom has identified discrimination between various internal and/or external providers in terms of price or other conditions, such as potential competition problem in the relevant market.

76. Section 4-7 of the Electronic Communications Act authorises the imposition of an obligation of non-discrimination. The first and second paragraphs of the provision read:

"The Authority may direct a provider with significant market power to offer interconnection and access to external providers on non-discriminatory terms.

The Authority may direct a provider with significant market power to offer interconnection and access to other providers on the same or equivalent terms and of the same or equivalent quality as provided for internal operations, subsidiaries or partnerships."

77. The section stipulates that an obligation of non-discrimination may be imposed in two contexts. Under the first paragraph, the Authority may order a provider with significant market power not to discriminate between external providers. The provision's second paragraph empowers the authorities to order the provider with significant market power to offer the same or equivalent quality and terms to competing providers as to its own or associated operations.

78. The main purpose of a non-discrimination requirement is that similar situations are treated equally with regard to prices, information and other terms, regardless of which provider is involved. Any differences in the terms offered should therefore be based on objective criteria. The obligation of non-discrimination means that providers are able to compete on equal terms, which will have a positive effect on the competition in the market.

79. Price discrimination may to a great extent be remedied via price obligations. Regulated maximum prices will ensure that the provider cannot demand higher prices than the regulated price for termination on its own network. There will still be opportunity for a certain degree of price discrimination if one or more providers are given lower prices than the regulated maximum price. Even so, Nkom believes that price control obligations in themselves will not be sufficient to prevent price discrimination between internal operations and external providers. Discrimination on other terms will not be addressed through price control. Nkom also believes that there is a risk that discrimination related to terms other than price becomes relevant, as price discrimination is largely prevented by the price obligations.

80. To ensure that providers comply with non-discrimination obligations, transparency obligations may be appropriate to make the conduct more apparent and thereby make it more difficult to retain a discriminatory practice. Transparency requirements are discussed in Chapter 7.3.

81. In Nkom's opinion, an obligation of non-discrimination, cf. Section 4-7 of the Electronic Communications Act, is the only one of the available remedies that effectively addresses discrimination related to other aspects than price.

82. Previously, nearly all interconnection happened via Telenor, and smaller providers have thus had little opportunity to engage in discrimination. However, in recent years, several direct interconnection agreements have been entered between providers of termination. This suggests that an increasing share of traffic on fixed networks is no longer in transit via Telenor. Nkom believes that this makes it relevant to consider non-discrimination requirements for all providers.

83. Like providers that terminate relatively large volumes of traffic on their networks, smaller providers may also have incentives to offer more advantageous prices and terms for selected providers. In cases where providers other than Telenor negotiate interconnection agreements directly, it is important that these providers too are subject to non-discrimination obligations regarding price and other terms, so as to limit the opportunity for discriminatory conduct.

84. In Nkom's decision of 22 January 2016, all providers are made subject to a non-discrimination obligation since Nkom did not find sufficiently weighty grounds for continuing the previous differentiated treatment in the regulation of the providers. Nkom maintains this assessment and also believes that the burden of such an obligation will not be significant for the smaller operators.

85. A non-discrimination obligation for all providers nevertheless prevents some providers from negotiating lower prices or refraining from invoicing each other, for example in cases where traffic between them is about the same in each direction. The purpose of a non-discrimination obligation is that such situations shall be treated equally, so that if some providers negotiate lower prices or refrain from invoicing, other providers must be able to obtain the same offer in similar circumstances.

86. On this basis, Nkom finds it necessary to impose an obligation of non-discrimination on all providers of call termination on fixed networks. To be sufficiently effective, Nkom believes that an obligation of non-discrimination in connection with price and other terms must apply both between external operations and between a provider's own internal operations and external operations.

87. An obligation of non-discrimination implies a continuation of existing obligations for those companies that are subject to regulation. The obligation is new for eRate AS, Broadnet AS og ICE Norge AS, as they have not previously been subject to regulation. In Nkom's view, this obligation is proportionate. The remedy can be viewed as a best terms doctrine in that the more favourable terms achieved by a provider will also be reflected in the terms offered to other providers. In Nkom's opinion, the disadvantages of such a curtailment of providers' scope of action are nevertheless more limited than the benefits to competition. Moreover, Nkom cannot see that other means will be sufficiently able to remedy the relevant competition problems.

88. Discriminatory terms may reflect abuse of dominance pursuant to Section 11 of the Competition Act. For the provision to apply to discriminatory terms, the competition authorities must designate the relevant provider as dominant in the relevant market. Moreover, it must be established that discrimination has or is likely to produce anti-competitive effects, reducing predictability for the operators. In Nkom's view, the provision's implicit prohibition against discrimination provides insufficient protection against such behaviour. Sector-specific ex-ante obligations will also permit frequent and prompt intervention to a greater degree.

Conclusion

89. Nkom finds it necessary to impose a non-discrimination obligation on all providers with significant market power with regard to termination on their respective fixed networks. The decision concerning the non-discrimination obligations are presented in Chapters 8.1.2 and 8.2.2.

7.3 Reference offers and publication

90. Pursuant to Section 4-6 of the Electronic Communications Act, specific obligations can be imposed on providers with significant market power to publish specified information and to prepare and publish standard reference offers for electronic communications networks and services (reference offers). Such obligations are usually referred to as transparency obligations. Transparency in itself is rarely sufficient for remedying competition problems, but it may improve the efficacy of other measures¹³. For example, in connection with access issues, transparency will help simplify and speed up negotiations if the key terms for interconnection follow a standard reference offer that is publicly available. Reference offers will thus often be cost-saving for the providers and will also reduce the risk of disputes. A transparency obligation will also make it easier for other providers and Nkom to monitor compliance with non-discrimination obligations.

¹³ There is more information about the correlation between transparency obligations and other obligations in ERG's remedies document, page 42 ff.

91. Above, Nkom concluded that there is a need to impose an obligation of non-discrimination. This makes it germane to also consider imposing obligations for transparency to render the specific obligation more effective, thereby further counteracting attempts at discriminatory conduct.

92. One possible downside of transparency is that easily available information on prices may facilitate tacit collusion. Competition will be harmed if competitors adjust their prices to each other rather than fix them on a free basis. However, Nkom cannot see that this issue is particularly relevant for the termination markets. First, the market consists of relatively few providers where the termination rates are already transparent. Through interconnection agreements the parties will gain knowledge about the other party's termination rates because providers depend on such information in order to invoice one another. The possibility of tacit price collusion will also be limited by Nkom imposing a price cap regulation on all providers, cf. Chapter 7.4. Nkom therefore believes that the potential harm of an obligation of transparency will be very limited.

7.3.1 Telenor

93. With a view to enhancing the efficiency of supervising the specific obligations on access and non-discrimination that Nkom is imposing on Telenor, we believe that it is important that these obligations be supplemented by an obligation of transparency. Most providers still want to enter into interconnection agreements with Telenor, and Telenor's reference offer normally forms the basis for the specific agreements entered.

94. With regard to the specific content of the transparency obligation, Nkom believes that Telenor should still be obliged to prepare a reference offer for access in the form of termination. The reference offer shall be adequately divided into individual elements with appurtenant terms and conditions based on the needs of the market, so that the other party is not forced to accept services, functions or benefits that are not requested, cf. Section 4-6(2) of the Electronic Communications Act. The agreement shall be regularly updated and shall contain all information important for the services that are offered. Publishing the reference offer and prices on Telenor's website is a satisfactory form of publication, cf. Section 4-6(4) of the Electronic Communications Act.

95. Pursuant to Section 10-3 of the Electronic Communications Act, Nkom has in previous decisions imposed an obligation on Telenor to send Nkom a copy of all interconnection agreements and any other agreements associated with call termination on the fixed network. In the decision of 22 January 2016, Nkom did not find it necessary to maintain this obligation. Nkom sees no reason to change this in the coming regulation period. However, pursuant to the same provision, Nkom reserves the right to make specific requests for corresponding information in the coming regulatory period.

96. Furthermore, Nkom believes that for call termination there is still a need to notify other providers of any changes in the existing services that are unfavourable to the contractual parties and/or their end-users. Notice must be given no later than two months before the changes are implemented. Information regarding other changes to the terms of the agreement shall be notified without undue delay after the changes have been decided upon.

97. Nkom believes that the transparency obligations are proportionate. For Telenor, the obligations in their entirety are a continuation of the obligations imposed in Nkom's decision dated 22 January 2016. The work associated with preparing and publishing reference offers has already been done. However, there will be some administrative costs associated with updating the reference offers. These are considered to be relatively limited, so that the benefits to competition clearly exceed the drawbacks the requirement may entail for Telenor.

98. Nkom has not found reason to change the assessment in the decision of 22 January 2016 with regard to whether the provisions of the Competition Act will be adequate to address the interests justifying the need for any such transparency obligation. Nkom upholds its

conclusion that general competition law will not be able to address the need for predictability, for detailed rules and for frequent and timely intervention to the same extent as sector-specific ex ante transparency obligations. General competition law will therefore be insufficiently suited to safeguard the reasons for the specific obligation regarding transparency related to Telenor's offer of termination on fixed networks.

Conclusion

99. To make the access obligation and non-discrimination obligation more efficient, Nkom believes there is a need to impose an obligation on Telenor to prepare and publish a standard reference offer for termination on fixed networks. Furthermore, Nkom believes there is a need to require Telenor to give advance notice to other undertakings of changes in existing services that disfavour the other parties to its agreements and/or their end-users, no later than two months before they are implemented. Decisions concerning the imposition of obligations related to reference offers and publication are presented in Chapter 8.1.3.

7.3.2 Other providers

100. As all providers of termination will be subject to a non-discrimination obligation, it is appropriate to impose transparency obligations on all providers of call termination on fixed networks.

101. Nkom is aware that in recent years several direct interconnection agreements have been made between smaller providers of termination. Several of these agreements have first and foremost been made to exchange mobile traffic, but at the same time they facilitate the exchange of fixed network traffic. However, it is nevertheless the case that some of the traffic to and from smaller providers of termination still transit via Telenor, which employs cascade settlement with the providers involved.

102. In 2011, Nkom concluded that the transit market no longer fulfilled the requirements for ex ante regulation. Nkom is not aware that this has created competitive challenges and assumes that Telenor has not been able to act independently of the buyers of the company's transit product, since several of the providers will be able to exchange interconnection directly. Furthermore, there is reason to believe that SIP-based interconnection will further lower the barriers for establishing direct interconnection. In such a scenario, there may be a need to impose transparency obligations in the form of the preparation and publication of standard interconnection agreements for more providers than Telenor.

103. In the fixed network market, Telenor's reference offer is generally used. It is therefore the case that there does not seem to be a particular need for all providers to prepare and publish their own complete interconnection agreements. Furthermore, it is clear that price will remain the most important parameter for entering agreements concerning direct interconnection. Failure to prepare and publish complete terms and conditions for reference offers therefore cannot be deemed to be a real competition problem, even though a reference offer requirement can be relatively onerous for the smallest providers. Nkom therefore finds that this obligation must still be imposed solely on Telenor.

104. In Nkom's view, the publication of termination rates by the smaller providers will be sufficient. This can be done on the providers' websites.

105. As is the case for Telenor, Nkom believes that a duty should still be imposed on all providers of termination services in the fixed network to notify other undertakings of any changes in existing services that disfavour the other party and/or its end-users, no later than two months before the change is implemented. Information regarding other changes to the terms of the agreement shall be notified without undue delay after the changes have been decided upon.

106. In accordance with Section 10-3 of the Electronic Communications Act, Nkom has in previous decisions required providers to send Nkom copies of the interconnection agreements they enter as well as any other agreements related to termination on fixed networks. In the decision of 22 January 2016, Nkom did not find it necessary to maintain this obligation. Nkom sees no reason to change this in the coming regulation period. However, based on the same section, Nkom reserves the right to make specific requests for equivalent information in the coming regulatory period.

107. Nkom cannot see that providing information about their termination rates on their respective websites, or notifying any changes in their services no later than two months ahead of the changes taking place, represents any major burden for providers of termination services. Nkom therefore concludes that the imposed transparency obligations vis-à-vis other providers of termination services on fixed networks are proportionate.

Conclusion

108. Nkom finds it necessary to impose an obligation on other providers of call termination on fixed networks to publish their termination rates. Further, Nkom finds it necessary to impose an obligation on these providers to give advance notice to other undertakings of changes in existing services that disfavour the other parties to its agreements and/or their end-users, no later than two months before they are implemented. The decision regarding the publication obligation is presented in Chapter 8.2.3.

7.4 Price regulation

7.4.1 General – the need for price controls of termination rates

109. In Chapter 5, Nkom has shown that excessive pricing and cross-subsidisation are potential competition problems in the relevant market.

110. Pursuant to Section 4-9 of the Electronic Communications Act, the authorities may impose price obligations for access and interconnection on providers with significant market power in cases where the provider can exploit its market power to the detriment of the end-users by sustaining a disproportionately high price level, or by subjecting competing providers to price squeezes.

111. Section 4-9 of the Electronic Communications Act sets no requirement that the regulated provider actually does charge a disproportionately high price: it is sufficient that the provider with significant market power might potentially do so in the future. As stated in the description of the competition problem of excessive pricing, Nkom believes the terms for imposing price controls in the relevant termination markets have been met.

112. In Nkom's view, remedies such as reference offers, publication and non-discrimination are insufficiently able to counteract competition problems related to excessive pricing. Price regulation is therefore necessary to remedy the competition problem of excessive pricing and thus prevent the unfortunate consequences mentioned in Chapter 5.

7.4.2 Starting point for price controls

113. Nkom's and Ministry of Transport and Communications' previous decisions in the markets for call termination are the basis for price regulation in this decision. In addition, the Commission and ESA's recommendation on the regulation of termination rates in fixed and mobile networks of 7 May 2009¹⁴ and the general objective of harmonisation have played

¹⁴ Commission's recommendation, see : [Http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF)

important roles in shaping this decision. Reference is made to Chapter 7.4.2.1 in the decision of 22 January 2016 for a review of the Commission and ESA's recommendation concerning a maximum price for call termination, based on the principle of LRIC alone, and to Chapter 7.4.2.3 in the aforementioned decision for a review of previous decisions, including a report on the choice of method of determining the maximum termination rate in Norway.

114. It is also pertinent to point out that the new recommendation on price regulation of call termination was originally expected to be communicated by the Commission at the end of 2016. However, this process was postponed. At the same time, the Commission has worked on updating the electronic communications regulations¹⁵, in connection with which it has proposed a concrete harmonised maximum price level for call termination. New European electronic communications regulations, including future frameworks to apply to price regulation, were considered by the European Parliament in November 2018.

7.4.2.1 Harmonisation in Europe

115. Termination rates in the EEA countries have been reduced in recent years and are expected to decline further.

116. The Body of European Regulators for Electronic Communications (BEREC) prepares regular price comparisons for countries in Europe.¹⁶ BEREC's comparison from January 2018 shows that the average termination rates at the lowest level for the exchange of interconnection in the EEA is 0.33 eurocents (around 3.2 øre),¹⁷ see Figure 1. At that time, the termination rate in Norway was 0.6 øre (around 0.06 eurocents), which was thus below the European average. A significant reason that the average termination rate is relatively high is that Finland has a very high termination rate. BEREC's price comparison from January 2018 for the lowest level for the exchange of interconnection is presented in the figure below.

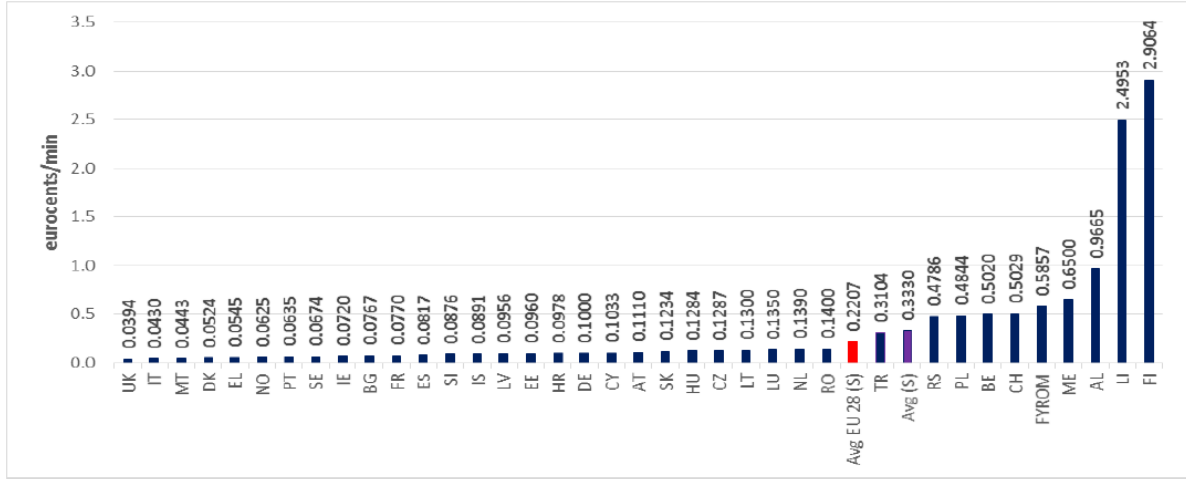
¹⁵ European Electronic Communications Code (EECC)) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2018:321:TOC>

¹⁶ https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8162-termination-rates-at-european-level-january-2018

¹⁷ The conversion to NOK is based on 1 euro, corresponding to NOK 10.06. In several countries in Europe, interconnection is offered at three levels: local, regional and national. Interconnection on Telenor's fixed network is currently offered at one level.

Overview of incumbents' lowest^{3,4} regulated fixed termination rates per country – January 2018 (eurocents per minute of service)

Figure 1 FTRs

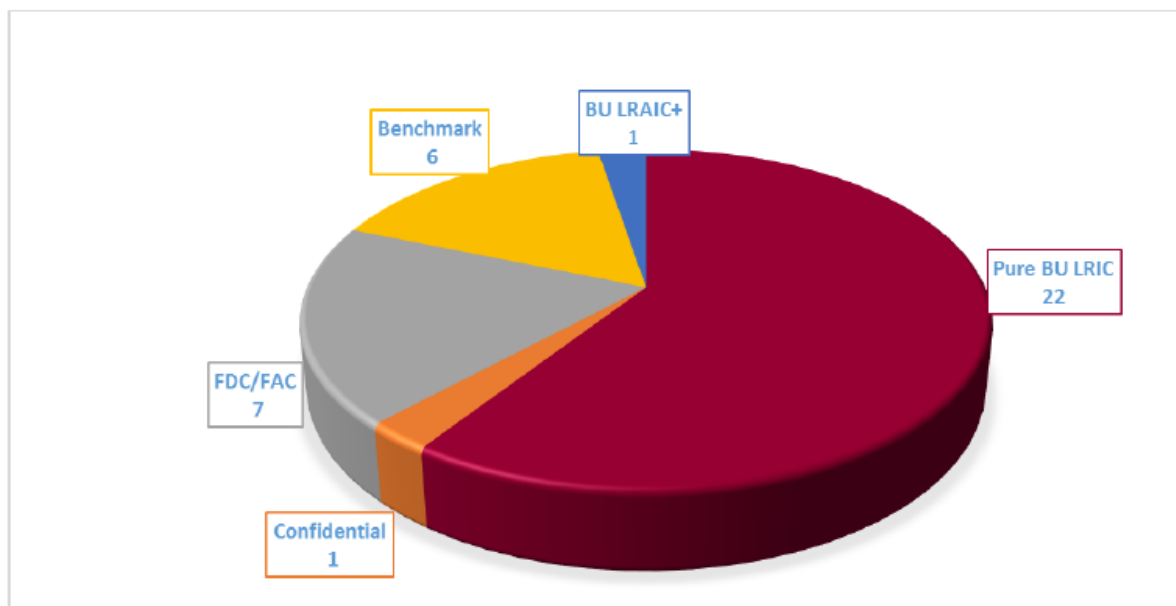


Source: NRAs, BEREC

Figure 1 Overview of termination rates and average termination rate at the lowest level for the exchange of interconnection in European countries as of January 2018, stated in eurocents per minute.

117. Figure 2 below shows that at the turn of the year, 2017/2018, 22 countries in Europe had set termination rates based on pure LRIC. This applies to Denmark and Sweden, among others. The termination rates for countries using pure LRIC are below the EEA average. The figure shows that six countries use a benchmark as the method to determine the termination rate. Five of these countries base the benchmark on countries that use pure LRIC.

Figure 8 Cost accounting models used by NRAs



Source: NRAs, BEREC

Figure 2 Cost models used by the regulators in Europe to determine the termination rate.

118. In line with the determination of termination rates in the EEA countries on the basis of the Recommendation to a great extent, the prices show a downward trend, while at the same time the prices are now largely symmetrical within the individual countries.

119. In this context it is also relevant to point out that in those cases where the national regulatory authorities have announced price controls that deviate from the Recommendation, the Commission has lodged formal objections¹⁸. As a general rule, BEREC has agreed with the Commission's objections if the termination rates have been determined using a cost basis other than pure LRIC.

120. The above shows a trend for declining termination rates and a harmonisation of the method for price setting by increasingly using pure LRIC. At the same time, however, there are still relatively large variations in the price levels between the various European countries, meaning that the goal of a harmonised price level cannot yet be said to have been reached.

7.4.3 Calculation of efficient cost

121. Nkom does not see a need to reassess the overall selection of LRIC as the method of cost setting.

7.4.3.1 Model for calculation of effective cost

122. Nkom developed the original LRIC model (version 1.6) in collaboration with the consulting firm Analysys Mason in 2009-2011. The original model calculated costs for the different providers, including one provider of Telenor's size (the "Telenor model"), as well as three subsidiary models for providers representing different business concepts in the markets for termination on fixed networks (access owner, access lessee and access independent).

¹⁸ Articles 7 and 7a of the Framework Directive provide for a harmonisation procedure whereby parts of decisions in Member States must be approved by the Commission.

123. Both the Telenor model and the above-mentioned subsidiary models were generic, in the sense that they were not based on real data from Telenor or other providers. The generic Telenor model was used as the basis for the price control, as it provided the most robust results and the results were similar to the results from the other modellings.

124. In connection with the decision of 22 January 2016, the LRIC model was further developed and updated to version 2.0. This version calculates the long-term, incremental costs for a generic operator of Telenor's size, using real costs based on data from Telenor. Applying a generic provider is in line with ESA's recommendation. The results from previous modelling have also demonstrated that the costs of an access owner, access lessee and an access-independent provider have not differed significantly from the modelling based on Telenor's volumes. On this basis, other alternative models were not updated in version 2.0.

125. Version 2.0 calculated the termination costs based on the same principles as used in the original version. In other words, the model showed costs based on LRAIC+, LRAIC and pure LRIC, respectively. Pure LRIC was calculated in line with ESA's Recommendation and did not include a mark-up for shared costs. When LRAIC is used, a proportionate share of common costs is also included, such as costs for platforms used for service production, transmission costs, electricity costs and other common costs related to the core network. When LRAIC+ is used, a proportionate share of common costs is included (equivalent to LRAIC) and also a proportionate share of administrative costs.

126. In the decision of 22 January 2016, pure LRIC was used as the basis for the regulation of fixed network termination rates. The same basis is applied to the regulation of termination rates in mobile networks.

127. Furthermore, the Commission and ESA's Recommendation assumes that only traffic-driven costs should be included. In practice this means that the LRIC model is run twice to calculate LRIC for an operator that offers services with and without the termination service included. The difference between these two cost results is pure LRIC, or the avoidable cost of termination.

128. By setting termination rates according to pure LRIC, based on the LRIC model attached as an annex to this decision, Norwegian termination rates will not be significantly lower than in other countries with which it is natural to compare Norway. There is no basis to believe that any such adjustment of the termination rates will have particularly negative consequences.

129. On the basis of the assessments presented, Nkom maintains that pure LRIC still is the appropriate price adjustment method in Norway.

7.4.3.2 Migration to effective technology

130. With regard to the choice of technology, ESA's Recommendation states that:

“The cost model should be based on efficient technologies available in the time frame considered by the model. Therefore the core part of both fixed and mobile networks could in principle be Next-Generation-Network (NGN)-based.”

131. ESA means that this price setting for termination will promote efficient production and demand, and minimise distortions of competition (between fixed and mobile markets and between small and large providers).

132. According to the Recommendation, termination rates shall be set based on costs for an efficient operator. Additionally, the cost model shall be based on the most efficient technology available.

133. The LRIC model that Nkom had developed in connection with the decision dated 1 August 2011 (version 1.6) was a life-cycle model that included migration from current technology (PSTN/ISDN) to NGN.

134. The migration profile was thoroughly assessed when setting the termination rates in 2011. Nkom also believed that in order to foster efficient production and demand, and minimise the distortion of competition, the migration profile should be relatively short and quick. At the same time, Nkom considered it important that the migration profile was realistic and gave providers time to adapt. For these reasons, Nkom used a migration profile from 2011-2015 when estimating costs in version 1.6 of the LRIC model.

135. In the LRIC model version 2.0, which was developed in conjunction with the decision of 22 January 2016, the migration profile was assessed once again. After the decision in 2011, Telenor continued to work on migrating to new technology and on phasing out PSTN/ISDN. To convert PSTN/ISDN lines to IP in the LRIC model, the “POTS in DSLAM” (PID) solution was applied.¹⁹ This was technology that was not relevant at the time that version 1.6 was modelled, but was considered to be more realistic in 2016. However, Telenor had not decided whether and to which extent any such solution would be used.

136. On this basis, the migration profile in version 2.0 was changed.

137. A migration profile was assumed which had the same long migration period as was used in the 2011 decision, but the start date was moved forward since the modelling was based on technology that was not relevant at the time that version 1.6 was developed. In addition, the migration profile was developed further in that the largest nodes were migrated earliest in the period, which would be expected of an efficient operator. Nkom does not see any basis to change the migration profile assumed in the LRIC model.

7.4.3.3 Updates in the LRIC model

138. The current decision has set a price cap for call termination based on pure LRIC of 0.6 øre per minute as from 1 April 2016 and until new price regulation comes into force.

139. Now that the rates are to be re-evaluated, the LRIC model will also need to be updated. The limited update that has been made in this connection must be seen in light of the uncertainty associated with the forthcoming recommendation on the regulation of termination rates and the forthcoming new European Electronic Communications Code. In October 2017, the operators gained the opportunity to provide input for the impending update of the LRIC model. Only Telenor responded to the enquiry and the company endorsed that the model updates should be limited. On this basis, Nkom has attached importance to primarily updating the traffic and population data.

140. Figure 3 shows the effective cost of termination in the updated LRIC model, version 2.3F, for the 2018-2022 period. The updating of volumes and traffic data in the model has an insignificant effect on the calculation of termination costs. Based on pure LRIC, the termination cost is 0.6 øre, equivalent to the current price cap.

¹⁹ LRIC version 1.6 was based on the use of MSAN (“Multiservice Access Node”) for conversion of PSTN/ISDN lines to IP.

Cost results from v2.3D model with demand changes only

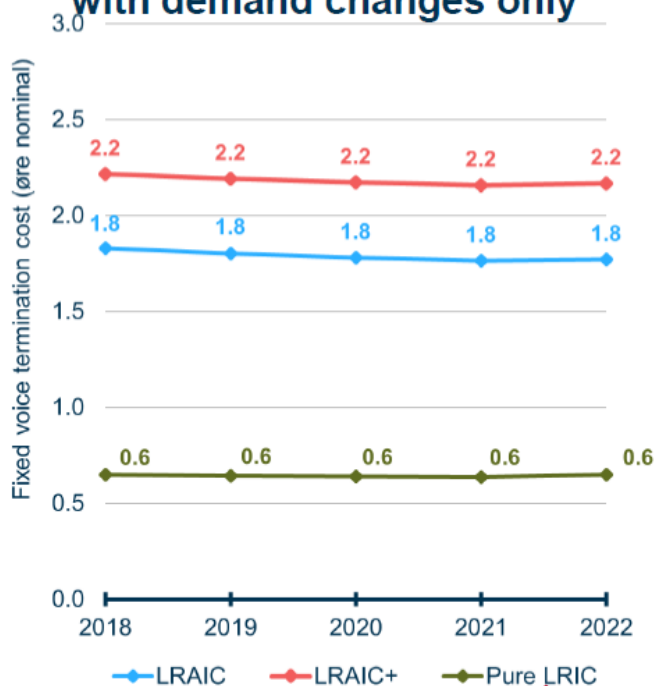


Figure 3 Cost of call termination where the model is updated with volumes and traffic data.

141. Telenor has offered SIP interconnection since the spring of 2017. LRIC model version 2.3F has therefore taken account of new technology on the phasing-in of SIP interconnection. Network components for SIP interconnection are enabled in the model. The model assumes a steady migration of traffic based on the SS7 protocol to the SIP protocol during the period from 2017 to 2021. During this period, interconnection will be based on a combination of these protocols. Network components for SS7 interconnection will be phased out in 2021 in the model, once all traffic has migrated onto the SIP protocol.

142. Inclusion of SIP interconnection in the model cause a reduction of the termination cost from 2019, based on pure LRIC, cf. Figure 4. The cost using pure LRIC is 0.5 øre per minute in 2019 and 2020. As from 2020, the cost adjusted for inflation drops²⁰ to 0.4 øre per minute.

²⁰ The inflation forecasts used to set the maximum prices in the regulatory period are from Norges Bank's "Pengepolitisk rapport 1/18" (Monetary Policy Report 1/18).

Cost results from v2.3D model using v2.3D SIP option

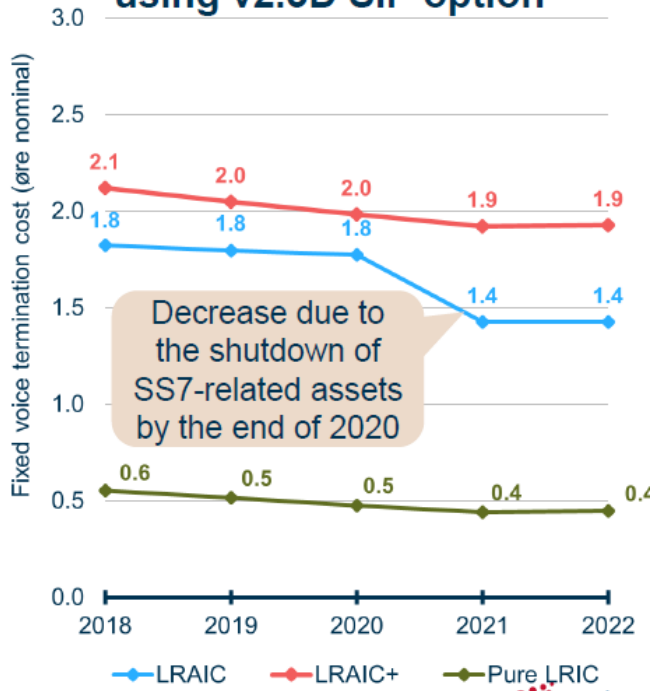


Figure 4 Cost of call termination in which SIP interconnection is included in the model.

143. Other assumptions concerning the technology in the model also apply.

7.4.4 Price cap regulation

144. Nkom finds that the results from the updated model represent the real, effective cost level and should be implemented as quickly as possible for all providers. There is little reduction in the results, so that there is no need for any transitional period.

145. On this basis, Nkom gives notice of the maximum prices for the regulated providers, as indicated in the table below. The current maximum prices apply until 1 July 2019.

	From 1 July 2019	From 1 January 2020	From 1 January 2021
Maximum price for termination per minute (øre)	0.5	0.5	0.4

Table 2 Maximum price per terminated minute within interconnection area, stated in øre excluding VAT.

146. The maximum prices are based on the effective costs for each individual year and do not represent graduation towards an effective future price. Nkom therefore finds it appropriate that they be adjusted for inflation. Thus, maximum prices are based on inflation prognoses for the entire regulatory period and not on an ongoing annual inflation adjustment. Nkom does not find it likely that inflation will deviate significantly from the prognoses for the next two to three years. If it should turn out that the actual inflation differs significantly from the prognoses, Nkom will consider whether it is necessary to correct the adopted maximum prices.

147. Previously, providers of termination often priced calls with a start-up fee and a price per minute, whereby the price of a call of average duration did not exceed the regulated maximum price per minute. Experiences from recent years have shown that providers have now moved to exclusively price termination per minute, with no start-up fee (metered per second). Nkom finds that the lower price cap for termination is a factor that reduces the providers' incentive to introduce other price structures than price per minute. In Nkom's assessment, there is therefore no need to pave the way for other price structures, and thereby no reason to establish an approval procedure for deviating price structures.

7.4.5 Proportionality and impact assessment

148. The proportionality principle means that if there are several alternative remedies assumed to be equally effective, the least burdensome alternative shall be chosen. Nkom has found it necessary to impose price controls in the form of a price cap for the termination product on all providers of termination on fixed networks. Price control will in itself be a burdensome obligation for the companies, as they will not be free to set their own prices. However, Nkom believes that in this case there is no fully adequate alternative to price controls for solving potential problems associated with excessive pricing of the companies' call termination services.

149. The decision entails a reduction in the termination rate from NOK 0.006 to NOK 0.005 from 1 July 2019. The overall net effect is the difference between reduced termination revenue and reduced costs of buying external termination due to the lower termination rate. In general, the number of incoming minutes will exceed the number of outgoing minutes to other fixed networks, because incoming minutes also include traffic from mobile networks and abroad. In overall terms, the decline in revenue as a consequence of reduced termination rates will therefore exceed the cost reduction as a consequence of the same price decline. As a consequence of a marginal reduction of the termination rate and a steady fixed network traffic reduction, the overall net effect is expected to be modest. For the providers with the lowest traffic volumes, the net effect will be quite small.

150. The net effect for providers of fixed telephony will also be affected by termination rates in mobile networks being reduced as well. The nominal reduction in termination rates will be significantly greater in mobile networks than on fixed networks in the coming years, which benefits providers of fixed telephony.

151. Norwegian operators have known about the trend towards lower termination rates for quite some time now, both because it has been a clear goal in Europe that termination rates are to be reduced, and by virtue of the fact that Nkom has regulated the termination rate.

152. With regard to the choice of price regulation method, price-cap regulation is generally not very resource-intensive for the regulated provider to comply with, and not very resource-intensive for the authority to oversee. In this respect, price-cap regulation is more predictable and less onerous, for both the regulated provider and for the supervisory authority, than a general cost-orientation requirement.

153. Section 11 of the Competition Act will limit the competitive freedom of dominant undertakings in relation to choice of price strategies and will be usable to a certain degree to check excessive pricing in the termination markets. Nevertheless, Nkom believes that this provision will not provide a satisfactory degree of protection against such behaviour. Nkom understands Section 11 of the Competition Act to not address the needs for predictability and frequent and timely interventions the way a sector-specific ex ante obligation of a price cap can.

154. On this basis, Nkom believes that the price control obligations imposed on providers with significant market power in the markets for call termination on the telephone network (provided) at a fixed location are proportionate.

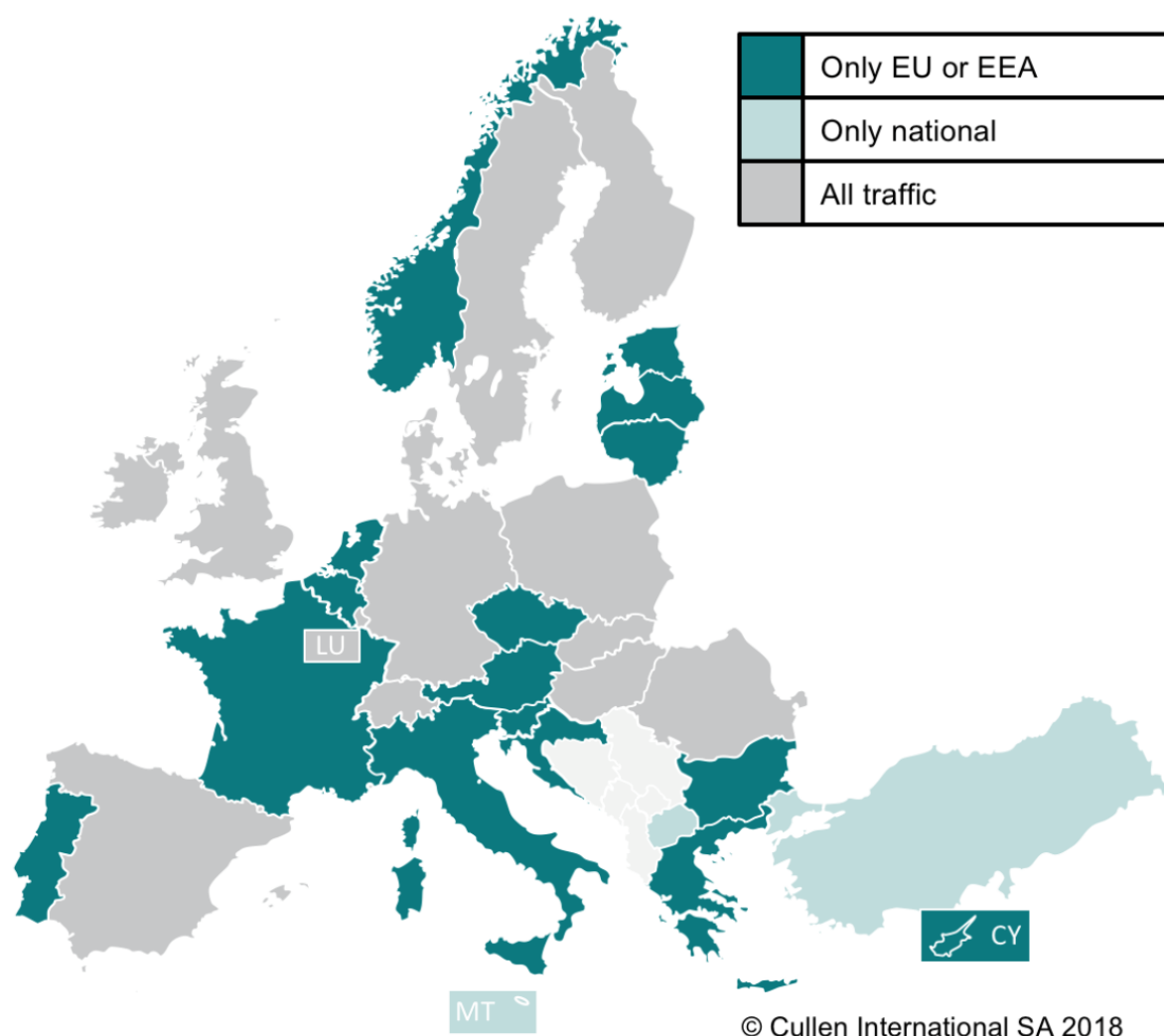
7.4.6 Calls originating outside the EEA

155. The Commission and ESA's recommendations on the regulation of termination rates have resulted in substantial reductions in the termination rates in the EEA countries in recent years. This means that Norwegian providers buy termination in other EEA countries at prices that in most cases do not deviate significantly from the regulated price level in Norway, cf. Figure 1 in Chapter 7.4.2.2. However, this is not necessarily the case for purchases of termination on fixed networks in countries outside the EEA. Since the providers of fixed-network termination in Norway will be subject to price controls, which is not necessarily the case for fixed-network providers in countries outside the EEA, there is a risk that the Norwegian providers will have to pay a significantly higher termination rate than they can demand from their counterparts outside the EEA. This may result in a substantial asymmetry in the Norwegian providers' disfavour. It might also mean that Norwegian end-users will have to pay significantly more for calls to countries outside the EEA than end-users in these countries have to pay for equivalent calls to Norway.

156. In the decision of 22 January 2016, Nkom made a thorough assessment of the price-cap regulation and concluded that a delimitation of the scope of price regulation was proportionate. The assessments made in the aforementioned decision, Chapter 7.4.6, are still by and large applicable.

157. Corresponding skews in prices on calls originating within and outside the EEA are found in the other EEA countries, and more and more countries have therefore assumed that price controls should be limited to calls originating in EEA countries. Figure 5 below shows which countries have introduced such limitations.

More countries are now applying regulated FTRs only to traffic originating within EU/EEA (Cullen International)



© Cullen International SA 2018

Figure 5 Overview of possible limitations to the scope of maximum price regulation, July 2018.
Source: Cullen International 2018.

158. Nkom believes that price cap regulation in Norway may lead providers outside the EEA to having a considerable advantage over Norwegian providers and possibly also limit Norwegian providers' negotiating position vis-a-vis providers not subject to price controls. This may have unfortunate consequences for Norwegian end-users, who in the end must carry the cost of this imbalance. On the other hand, a limitation of the price regulation to apply to calls originating within the EEA might strengthen Norwegian providers' negotiating position and, in the longer term, lead to lower termination rates for calls terminating outside the EEA. In turn, this may contribute to lower retail prices for calls to these countries.

159. As mentioned, the terms for imposing price caps pursuant to Section 4-9 of the Electronic Communications Act is that providers can use their market power to set a disproportionately high price level or by subject competing operators to margin squeezes to the detriment of end-users. Limiting the price controls to only apply to calls originating in the EEA will, as Nkom has reasoned above, not have direct negative consequences for Norwegian end-users or for competing providers. However, Nkom expects that the price level for terminating calls originating outside the EEA will not be set unreasonably high, but that

Norwegian providers will instead use the opportunities presented by the delimitation of regulation to negotiate low interconnection rates for calls originating or terminating outside the EEA.

160. On the basis of the above, Nkom has concluded that the price cap regulation shall be restricted to apply only to termination of calls originated in the EEA.

7.4.7 Price controls for interconnection

161. When interconnecting, the demand-side must buy interconnection in addition to termination. This is true for termination in Telenor's network and for termination in the networks of other providers.

162. In principle, charges for interconnection shall be set according to commercial negotiations between the parties. The providers covered by this decision have both an incentive and the opportunity to charge excessive prices for this type of products. A possible excessive price can give rise to potential competition problems, especially related to denials of interconnection. Should these prices be increased significantly, they may represent an entry barrier for new providers of fixed telephony and a competitive disadvantage for established providers.

163. Nkom's decision of 22 January 2016 made providers subject to an obligation to set reasonable prices for interconnection. Due to the incentives for excessive pricing, Nkom thinks that there is still a need to control interconnection charges on fixed networks, and therefore imposes a continuation of the obligation on all providers of termination to set reasonable prices for interconnection. In its decision dated 27 November 2017, in the markets for termination on mobile networks, Nkom has assumed equivalent requirements for the interconnection obligation.

164. What can be regarded as a reasonable price will have to be decided on a case-by-case basis. If necessary – for instance if cases arise in the future where negotiations are unsuccessful or Nkom receives complaints – Nkom will assess whether a specific price is reasonable. Actual costs related to interconnection will be key in such an assessment.

7.4.8 Cost accounting

165. Thus far, Telenor has been required to report its cost accounts for interconnection, based on the principle of historic fully allocated costs.

166. Cost accounting is an important basis for monitoring the requirement regarding cost orientation for interconnection. On this basis, Nkom imposes that Telenor still is subject to an obligation to keep cost accounts for interconnection. Interconnection is used in several markets, and cost accounts for interconnection will continue to include all markets the product is used in connection with. The cost accounts shall be kept in accordance with the principle of fully allocated historical costs. In Chapter 8, Nkom has specified the overarching principles for implementing the cost accounting system that will apply to interconnection

167. Nkom considers the associated regulatory burden to be limited, in part because Telenor has already developed and implemented a system for such cost accounting.

7.5 Assessment of the overall effect of the specific obligations

168. Nkom is imposing obligations on providers with significant market power that are generally equivalent to those adopted on 22 January 2016. Price regulation is continued according to the principle of pure LRIC. An updated calculation of the termination cost results in a marginal reduction of the termination cost. The price regulation in this decision must thus be said to be predictable. The economic consequences for each provider are expected to be relatively limited, which is also due to falling volumes, cf. Chapter 7.4.5. Nkom continues the

delimitation of the price regulation to solely apply to the termination of calls originating within the EEA. This will give providers greater scope for manoeuvre in negotiations and on setting prices for termination of calls originating outside the EEA.

169. eRate AS, Broadnet AS and ICE Norge AS have not previously been subject to Nkom's regulation, but Nkom has now decided that the companies will be subject to the same regulation as other providers with significant market power in the termination markets (except Telenor, which is subject to additional obligations).

170. In Nkom's view, the obligations imposed on the regulated providers may on aggregate represent a rather heavy regulatory burden. Nkom also believes that in order to prevent exploitation of market power and to facilitate efficient use of the existing resources, effective interconnection negotiations and efficient pricing, all of the obligations must be put into effect.

171. For as long as there are no alternative forms of regulation better suited to produce a satisfactory outcome, the fact that the overall effect will be relatively onerous cannot be given decisive weight. Nkom has not been able to identify any such conditions and thus believes that the overall effect of the remedies is proportionate.

8 Imposition of specific obligations

8.1 Telenor ASA

8.1.1 Access and interconnection obligations

172. Since Telenor ASA has been identified as a provider with significant market power in the market for call termination on fixed networks, an obligation is hereby imposed on Telenor ASA to meet any reasonable request for interconnection in the form of termination, cf. Section 4-2(3) of the Electronic Communications Act.

173. Pursuant to Section 4-1 of the Electronic Communications Act, an obligation is imposed on Telenor ASA to conclude negotiations on entering into or amending agreements on termination on its fixed network without undue delay. At the request of the requesting party, Telenor ASA will be required to document vis-à-vis this party the time spent in connection with the relevant contract negotiations. Nkom must receive a copy of the relevant documentation. Nevertheless, the documentation obligation does not apply if the request was made later than three months after the relevant negotiations were concluded.

174. If access is denied, the party requesting access shall receive a documented and justified refusal of the request, cf. Section 4-2(3), last sentence, of the Electronic Communications Act. The justification must contain all information necessary to evaluate the basis for the refusal, such as, for example, the reason access is being denied, with the necessary technical documentation.

175. Pursuant to Section 4-4(3) of the Electronic Communications Act, Nkom directs Telenor ASA to accommodate any reasonable request for co-location, should this be requested together with the termination product.

8.1.2 Non-discrimination

176. Pursuant to Section 4-7(1) and (2) of the Electronic Communications Act, Nkom is imposing an obligation of non-discrimination in connection with call termination on Telenor ASA's fixed network. The non-discrimination obligation will apply between external operations

(Electronic Communications Act, Section 4-7(1)) and between Telenor's own and external operations (Electronic Communications Act, Section 4-7(2)).

177. The obligation of non-discrimination does not prevent Telenor ASA from demanding different termination rates for calls originated in countries outside the EEA; see Chapter 7.4.6.

8.1.3 Reference offers and publication

178. Pursuant to Section 4-6(3) and (4) of the Electronic Communications Act, Telenor ASA is imposed an obligation to prepare and publish a reference offer for call termination on the fixed network. Publishing the reference offer on the company's own website is regarded as a satisfactory means of publication. The reference offer shall be adequately divided into individual elements with appurtenant terms and conditions based on the needs of the market, so that the other party is not forced to accept services, functions or benefits that are not requested. The agreement shall be regularly updated and shall contain all information important for the services that are offered. As a minimum the published reference offer shall contain information on:

- the interconnection service being offered,
- general contractual terms and conditions,
- termination rates,
- price elements and the services the individual price elements cover,
- any discounts and criteria for discounts,
- the methods for calculating any offers without a fixed price,
- geographical supply area,
- any significant capacity limitations on delivery,
- characteristics of a technical and physical nature, including interfaces used at network termination points, as well as the standards that are used,
- points of interconnection,
- agreed quality level, and
- provisions regarding reasonable compensation for failure to meet the agreed quality level.

179. Pursuant to Section 4-6(1), cf. (4), of the Electronic Communications Act, Nkom imposes an obligation on Telenor ASA to give advance notice to other providers of any changes to existing interconnection services for termination on the fixed network no later than two months before they are implemented.

8.1.4 Price regulation

180. Pursuant to Section 4-9 of the Electronic Communications Act, an obligation is imposed on Telenor ASA to set rates for call termination on the fixed network that do not exceed the amounts in the table below. The current maximum prices apply until 1 July 2019.

	From 1 July 2019	From 1 January 2020	From 1 January 2021
Maximum price for termination per minute (øre)	0.5	0.5	0.4

Table 3 Maximum price per terminated minute within interconnection area, stated in øre excluding VAT.

181. Termination shall be charged for actual voice traffic (per-second charging) limited to the maximum price per minute and no start-up fee.

182. The maximum prices have been adjusted for expected inflation.

183. The maximum prices do not apply to calls originated in countries outside the EEA.

184. Pursuant to Section 4-9 of the Electronic Communications Act, an obligation is imposed on Telenor ASA to set reasonable prices for interconnection to its fixed network.

185. Pursuant to Section 4-9 of the Electronic Communications Act, an obligation to set cost-oriented prices for co-location is imposed on Telenor ASA.

8.1.5 Cost accounting

186. Pursuant to Section 4-9 of the Electronic Communications Act, an obligation to compile cost accounts for co-location is imposed on Telenor ASA.

187. The cost accounts must be compiled on the basis of the principle of fully allocated historical costs and in line with the following principles:

- Operating revenue, operating expenses (including depreciation), imputed interest payments and capital employed for telephone subscriptions shall be separated from other operations and appear as a separate profit unit.
- Costs/capital that are not directly attributable shall be allocated to the profit unit on the basis of an analysis of the causal relationship to the extent this is possible. Remaining costs/capital shall be allocated in proportion to previously allocated costs/capital.
- The cost accounts shall be based on the financial accounts, with the exception that the financial items are to be replaced by an imputed interest rate on book capital employed. Imputed interest payments shall consist of a weighted average of interest on debt and a reasonable return on equity multiplied by book capital employed. A reasonable rate of return on capital is in principle equal to the level expected from equivalent investments. Telenor shall use the prevailing interest rate set by Nkom. Book capital employed is the same as the book value of assets less non-interest-bearing liabilities. The cost accounts are to be reconciled with the financial accounts, and any discrepancies must be explained.
- The cost accounts are to be reviewed by an auditor in accordance with the standard for a limited review. Among other things, the auditor shall prepare a confirmation of whether or not the cost accounts comply with the stipulated system of cost accounting, including verification of the reconciliation with the audited financial accounts. In addition, a verification shall be conducted of whether selected distribution keys meet the requirements for activity based costing. The auditor shall be given access to all relevant documentation in order to express an opinion about the cost accounts.

188. The principles for keeping cost accounts are specified in Nkom's decision of 21 December 2006. However, the rate for imputed interest is given in a separate decision.²¹

8.2 Other providers of termination services in the fixed network

8.2.1 Access and interconnection obligations

189. Since all other providers of call termination services on fixed networks have been identified as undertakings with significant market power, an obligation is imposed on all providers of call termination services in the fixed network to meet any reasonable request for interconnection in the form of call termination, cf. Section 4-2(3) of the Electronic Communications Act. Besides Telenor ASA, this applies to the following providers:

- Altibox AS
- Broadnet AS
- eRate AS
- ICE Norge AS
- NextGenTel AS
- Orange Business Norge AS
- Puzzel AS (formerly Intelecom group AS)
- Telia Norge AS
- Verizon Norway AS

190. Pursuant to Section 4-1 of the Electronic Communications Act, an obligation to conclude negotiations on entering into or amending agreements on termination on their fixed networks without undue delay is imposed on other providers of call termination on fixed networks. At the request of the requesting party, all providers of call termination on fixed networks are required to document vis-à-vis the requesting party the time spent in connection with the relevant contract negotiations. Nkom must receive a copy of the relevant documentation. Nevertheless, the documentation obligation does not apply if the request was made later than three months after the relevant negotiations were concluded.

191. If access is denied, the party requesting access shall receive a documented and justified refusal of the request, cf. Section 4-2(3), last sentence, of the Electronic Communications Act. The justification must contain all information necessary to evaluate the basis for the refusal, such as, for example, the reason access is being denied, with the necessary technical documentation.

8.2.2 Non-discrimination

192. Pursuant to Section 4-7(1) and (2) of the Electronic Communications Act, Nkom imposes a non-discrimination obligation in connection with call termination on fixed networks to other providers of call termination. The non-discrimination obligation will apply between external operations (Electronic Communications Act, Section 4-7(1)) and between Telenor's own and external operations (Electronic Communications Act, Section 4-7(2)).

²¹ Nkom's decision of 28 November 2017 concerning the calculated interest rate to be applied to the reporting of accounts and price regulation in the fixed network markets.

193. The obligation of non-discrimination does not prevent the other providers of call termination on fixed networks from demanding different termination rates for calls originated in countries outside the EEA, cf. Chapter 7.4.6.

8.2.3 Publication

194. Pursuant to Section 4-6(3) and (4) of the Electronic Communications Act, Nkom imposes providers of call termination services on the fixed network to publish their prices for termination on the fixed network. Publication of prices on the provider's website is a satisfactory manner of publication. Standard rates and any discounts with related criteria shall be stated. Any agreed prices deviating from standard prices and/or discounts shall also be published.

195. Pursuant to Section 4-6(1), cf. (4), of the Electronic Communications Act, an obligation to give advance notice to other providers of any changes to existing interconnection services for termination on fixed networks no later than two months before they are implemented is imposed on all providers of call termination on fixed networks.

8.2.4 Price regulation

196. Pursuant to Section 4-9 of the Electronic Communications Act, an obligation to set rates for call termination on fixed networks that do not exceed the amounts in the table below are imposed on other providers. The current maximum prices apply until 1 July 2019.

	From 1 July 2019	From 1 January 2020	From 1 January 2021
Maximum price for termination per minute (øre)	0.5	0.5	0.4

Table 4 Maximum price per terminated minute within interconnection area, stated in øre excluding VAT.

197. Termination shall be charged for actual voice traffic (per-second charging) limited to the maximum price per minute and no start-up fee.

198. The maximum prices have been adjusted for expected inflation.

199. The maximum prices do not apply to calls originated in countries outside the EEA.

200. Pursuant to Section 4-9 of the Electronic Communications Act, Nkom imposes other providers of call termination on fixed networks to set reasonable prices for interconnection to fixed networks.

9 Relation to current decisions

201. Nkom's decision of 22 January 2016 concerning special obligations in the markets for origination and termination on public telephone networks provided at a fixed location is withdrawn once this decision enters into force.

10 Entry into force of the decision, time limit for appeals etc.

202. The decision and the appurtenant obligations in the market for voice call termination on the public telephone network at a fixed location shall enter into force immediately.

203. The decision may be appealed within three weeks of the date on which it is received, cf. section 11-6 of the Electronic Communications act and section 29 of the Public Administration Act. Appeals shall be directed to the Ministry of Transport and Communications but sent to Nkom.

204. Only the Ministry of Transport and Communications may make a decision on deferred implementation of the decision, cf. section 11-6, fourth paragraph of the Electronic Communications Act and section 42 of the Public Administration Act.