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## Draft decision - Price regulation of access to ODP

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## 1 Background

### 1.1 Introduction

1. On 20 December 2018, the Norwegian Communications Authority (Nkom) adopted a decision to designate a provider with significant market power and to impose specific obligations (Market Decisions) in the wholesale markets for local and central access to fixed access networks (Markets 3a and 3b). The market analysis that formed the basis for these decisions concluded that Telenor ASA (Telenor) has significant market power in Markets 3a and 3b. Based on identified competition problems, obligations were imposed on Telenor relating to access, price and accounting controls, non-discrimination, transparency and accounting separation in these two wholesale markets.
2. At the end of January 2019, Telenor announced that the company had decided that the copper network would be decommissioned by the end of 2022, and that copper access would be replaced by fibre-based or wireless access. This decision was not part of the basis for assessment of the decision of 20 December 2018. Nkom has therefore found it necessary to assess whether the decommissioning of the copper network entails that there are grounds to clarify or reassess current obligations, or to impose new obligations, in Markets 3a and 3b.
3. On 20 December 2019, Nkom published a draft decision for national consultation<sup>1</sup> concerning amendments to the decisions in Markets 3a and 3b. The draft decision concerned several aspects of the regulation of these markets. This decision concerns price regulation of access to ODP in Telenor's fibre-based access network.

### 1.2 Content of the draft decision

4. In the draft decision concerning amendments to the decisions in Markets 3a and 3b, Nkom made an assessment of the price structure for VUA/VULA fibre in the light of the decommissioning of the copper network, including any effects on competition and potential measures. The need to change the price structure for VUA/VULA fibre is discussed in Chapter 3.2.2 of the draft decision. Nkom concluded that the existing price structure for ODP connection has an entry-barrier effect and could weaken actual and potential competition through access to Telenor's fibre network. Furthermore, Nkom pointed to how the prices appear to be disproportionately high in the light of Telenor's estimated costs associated with establishing a new port on ODP. Nkom also made a comparison with corresponding price elements from a number of other regulated European operators, cf. Table 1 of Chapter 3.2.1.2 of the draft

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<sup>1</sup> For the sake of simplicity, the term "draft decision" in this document refers to the draft decision floated for national consultation and not this draft decision as notified to ESA unless otherwise specified.

decision. The comparison showed that the ODP prices in Norway are significantly higher than in the countries in the basis for comparison.

5. In the draft decision, Nkom assessed various approaches for setting prices for ODP access and port capacity. Benchmarks against international prices were considered together with cost orientation as possible alternatives for price regulation. In the draft decision, Nkom concluded that Telenor will be required to offer ODP access at cost-oriented prices, pursuant to Section 4-9 of the Norwegian Electronic Communications Act. Nkom also notified that the cost orientation requirement will be based on an LRIC / LRAIC approach.

### 1.3 Concerning the consultation responses

#### 1.3.1 Consultation responses

6. Nkom received consultation responses from GlobalConnect, NextGenTel, Telenor and Telia. Below a summary is presented of the consultation comments that are related to the regulation of ODP connection in the draft decision.

7. **GlobalConnect** agrees with Nkom that the ODP prices in Norway are significantly higher than in comparable markets. GlobalConnect furthermore believes that this also applies to other price components such as connection fees and monthly rental for accesses. GlobalConnect believes there is no basis for the price level for ODP access to be higher in Norway than elsewhere in Europe. As GlobalConnect sees it, the high prices are due to the exercise of market power, combined with the absence of effective price regulation. The margin squeeze model has not been an appropriate tool to detect any exclusionary price behaviour. GlobalConnect is positive towards how Nkom imposes more targeted price regulation of a cost component.

8. **NextGenTel** supports the announced changes and furthermore states that it will be difficult for NextGenTel to maintain today's nationwide broadband offerings, unless the wholesale price for VULA/VUA fibre is addressed. For individual ODPs, the customer base will be too small for NextGenTel to be able to achieve profitability. The migration from copper to fibre will cause NextGenTel to be present on far more ODPs than is the case today. Unless the number of ODPs on which NextGenTel must be present is reduced, there is a need to change the price structure in order to safeguard competition. The realignment of the price structure in accordance with Nkom's draft decision will provide the conditions for NextGenTel to continue today's nationwide offering.

9. **Telenor** believes that the price regulation in the draft decision is restrictive, has no legal basis and is not sufficiently justified. According to Telenor, the imposition of such a restrictive obligation without comprehensive discussion and assessment of socio-economic consequences is not in accordance with fundamental public administration principles. Telenor

furthermore believes that the notified regulation dilutes the principle set out in the market decisions concerning the importance of pricing flexibility, due to the competition in the fibre market. Telenor believes that there is a lack of clarity concerning which LRIC/LRAIC model Nkom is referring to, the relationship with the overall price regulation for fibre-based access, and whether Nkom envisages that forthcoming decisions concerning VULA in Market 3a will be affected by the conclusion.

10. **Telia** takes the view that the current margin squeeze model is not appropriate to ensure effective competition. The prices for ODP access are disproportionately high and lead to entry barriers and growth barriers that undermine competition. The draft decision's price regulation of ODP access is necessary to ensure that Telia can achieve equivalent competitive opportunities to Telenor. Telia supports Nkom's assessments and believes that the draft decision's regulation is not disproportionate.

### **1.3.2 Nkom's assessment**

11. Nkom disagrees with Telenor that the draft decision's price regulation has no legal basis. We refer to how Section 4-9 of the Norwegian Electronic Communications Act authorises Nkom to impose price obligations on providers with significant market power. In this case, Nkom has documented that Telenor maintains a disproportionately high price level for ODP access prices. In the draft decision, Nkom refers to the remarks to Section 4-9 of Proposition no. 58 (2002-2003) to the Odelsting, page 106. Here, reference is made to how "the authority may order that various forms of price determination be applied, depending on what is most suitable in each case to increase efficiency, create sustainable competition and improve end users' conditions". In the draft decision Nkom also refers to the Ministry of Transportation and Communications' decision of 9 March 2018 concerning Market 15. Here, the Ministry maintains Nkom's conclusion that Section 4-7 of the Norwegian Electronic Communications Act gives the authority to set requirements concerning the price structure for access.

12. Nkom furthermore disagrees with Telenor that the notified change has not been sufficiently discussed. Nkom believes that there is no objective foundation, based on actual underlying costs, to set access prices at the level applied by Telenor. The price level is disproportionately high compared to other countries and has adverse effects on the threshold for market entry. In Nkom's view, the possible negative effects have been adequately discussed, cf. Chapter 3.2.2 of the draft decision.

13. Nkom agrees with Telenor that regulation of the price of ODP access reduces flexibility for Telenor within the framework of the margin squeeze model. Today's ODP pricing has an unfortunate effect on opportunities for market entry, however, as discussed in Chapter 3.2.2 of the draft decision, cf. also the comments from NextGenTel in their consultation response. Even though the change entails somewhat reduced flexibility for Telenor, the overall price regulation of fibre-based access will still entail greater flexibility than would be the case with other forms of

price regulation, such as cost orientation, or a margin squeeze model that entails tests of individual products, rather than tests of a portfolio of products. Nkom believes that the draft decision's changes are necessary in order to ensure competition in the broadband market and that this exceeds the negative effects for Telenor.

14. Nkom believes that a general cost orientation requirement on the basis of the reporting of cost accounting based on fully distributed historical costs will be unnecessarily complicated and disproportionate. A method based on a simple LRIC/LRAIC approach will be simpler, while also being appropriate to achieve the purpose of the regulation. This approach is described in further detail in Chapter 3.5 of this decision.

15. With regard to Telenor's comment concerning VULA in Market 3a, we refer to how on 31 March 2020, Nkom made a decision concerning final requirements of VULA fibre. Price issues were not considered in this decision, however. The price regulation imposed in this decision will, however, apply to access to ODP in connection with VULA fiber.

## 2 Regulatory basis

16. In accordance with Section 4-9 of the Norwegian Electronic Communications Act, Nkom can impose price obligations on providers with significant market power. This applies, for example, in cases where the provider can exercise its market power by maintaining a disproportionately high price level, or by subjecting competing undertakings to price squeezes. In this connection, reference is made to the preparatory remarks concerning Section 4-9 of Proposition no. 58 to the Odelsting (2002-2003), page 106<sup>2</sup>.

17. With regard to the authority to impose requirements related to the price structure, Nkom furthermore refers to the Norwegian Ministry of Transport and Communications' decision of 9 March 2018 concerning the designation of a provider with significant market power in Market 15. Here, the Ministry maintains Nkom's conclusion that Section 4-7 of the Norwegian Electronic Communications Act gives the authority to set requirements concerning the price structure for access.

18. On this basis, Nkom believes that Section 4-7 and Section 4-9 of the Norwegian Electronic Communications Act provide the authority to set requirements concerning how the

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<sup>2</sup> In the remarks, it is explained what is meant by a disproportionately high price level: "The maintenance of a disproportionately high price level means that competition has not contributed to an adequate decrease in retail prices. When assessing whether the price level is disproportionately high, the authorities may compare the price levels in equivalent markets, nationally or internationally."

price structure for VUA/VULA fibre is designed and for the determination of the prices for access to ODP.

### 3 Design of price regulation for ODP access

#### 3.1 Background

19. In the current regulation, Telenor is subject to an obligation to offer access to VUA/VULA fibre at prices which entail that the access buyer is not subject to margin squeeze. Telenor must pass a portfolio-based margin squeeze test of fibre-based retail products and a gross margin test of individual, fibre-based retail products. It is stated in the memorandum of principle on which the margin squeeze test is based that efficient alternative access buyers must be able to replicate Telenor's flagship products in the retail market. Since the margin squeeze test is a portfolio test, Telenor has the flexibility to adjust the wholesale prices provided that the gross margin for individual fibre products is not negative. In the current decision, Nkom has assumed that prohibiting margin squeeze will safeguard Telenor's investment incentives while also ensuring efficient competition for services in the retail market.

20. For some access buyers, VUA/VULA fibre will be an alternative to copper-based access. Below, Nkom will assess the effect of the price structure for VUA/VULA fibre in the light of the decommissioning of the copper network, including any effects on competition of this and possible measures.

#### 3.2 Price structure and price level for broadband access products

21. In both the Norwegian market and other EEA member states, it is customary to have complex price structures for regulated access products in the broadband markets. Nkom has examined such offers in a selection of member states and below a description is given of some general features of the price structure for such access products. Nkom then presents a description of equivalent price structures for relevant access products in Norway and in these EEA countries. Since the price structures are complex, we focus on the price elements we consider to be most central to how the price structure affects competition:

- **Connection fee and monthly rental per access:** These price elements usually vary in terms of speed and technology, but rarely with geography. In some member states, the national regulator has chosen to provide guidance for how the prices may vary with capacity. With regard to the geographical variation in access prices, the regulators in several member states have removed the access obligations in delineated areas with

infrastructure competition on NGA, typically in areas with access to a minimum of three independent NGA infrastructures.

- **Connection fee and monthly rental per port on the point of handover:** These price elements usually vary solely with port capacity, but thereby also have a degree of co-variation with the number of broadband accesses to which traffic is exchanged to and from the relevant handover point.
- **Connection fee and monthly rental for network capacity in backhaul (between DSLAM/OLT and ODP<sup>3</sup> – dynamic or fixed):** In most markets, it is only a one-off connection fee for this service that reflects the order handling costs. In some markets, there is also a monthly rental for backhaul capacity that is directly scalable with the number of accesses, and/or with the number of accesses in different quality categories, and furthermore and/or with available/reserved capacity for a quality category of accesses. On comparing different price elements between various different markets, account must therefore be taken of how this cost element is included in the price structure.
- **Connection fee and monthly rental of multicast capacity for distribution of linear TV services:** In many cases, these price elements are difficult to compare between various different markets because in some markets they seem to include access to certain program content and access control systems, while in other markets these are solely a transport product for multicast services.
- **Volume discounts:** Generally do not appear to be used very much.

22. It is also customary to have separate price elements for the set-up of access at a new point of handover (i.e. related to the establishment of the first ODP at a point). These price elements usually solely have a connection fee that is related to the time and materials used in the individual case. This and a number of other different price elements that affect the competitive situation to a lesser degree have not been subject to further assessment.

23. In view of the complex product and price structure that is customary for broadband wholesale access products, the level of the various elements within two different price structures that have the same elements (for example ODP related price elements vs access line price elements within each structure) could also have a significant impact on the extent to which the access prices facilitate effective competition.

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<sup>3</sup> DSLAM: Digital Subscriber Line Access Multiplexer: the broadband centre closest to the customer in the copper network.

OLT: Optical Line Termination: the broadband centre closest to the customer in the fibre-based network.

ODP: Operator Delivery Port: The connection point at which the access buyer connects to the access provider. In some cases, this will be at the same location as OLT, and in other cases ODP will be more centralised in the network.



24. For Telenor's Operator Access product (LLUB copper) there are only two price elements:

- Monthly rental and connection fee per access

For Telenor's DSL Broadband Access product (bitstream copper) there are five price elements:

- Monthly rental and connection fee per access
- Backhaul monthly rental per access line (varies between Basis/Premium/Proff product profiles, but not with speed)
- Monthly rental and connection fee per ODP: Other price points and levels than for fibre

For Telenor's VULA (VUA fibre) product, there are four price elements:

- Monthly rental and connection fee per access
- Monthly rental and connection fee per ODP: Other price points and levels than for copper

### 3.3 International benchmark

25. Nkom has more closely reviewed reference offers for products

similar to VUA/VULA fibre from regulated providers in other EEA countries. The general impression from the VUA/VULA fibre reference offers that have been assessed is that the fundamental price structure adheres to the pattern described above. The connection fee and monthly rental for ODP assessed over a five-year period does, however, seem to be significantly higher in Norway than in other EEA countries, cf. below. Monthly rental per VULA access also appear to be higher in Norway than in other EEA countries.

26. Demographic conditions (population density), topographic conditions and level of wages all entail that fibre connection may be more expensive to establish in Norway than in other EEA countries. On the other hand, there is reason to assume that cost differences with regard to the procurement and operation of electronic equipment used in the deployment of fibre-based broadband are limited. Here, Nkom refers to how, through the possibility of procurement agreements at Group level, Telenor will be able to achieve equipment prices that are comparable with the prices that can be achieved by larger European operators.

27. If Telenor chooses a price structure where price elements that to a limited extent vary with the number of accesses, such as the ODP product, are at a disproportionately high level compared to underlying costs, this might serve as an entry barrier. Nkom has therefore seen a need to do a benchmark of ODP prices from Telenor Norway compared to the level of the equivalent price elements from a number of other regulated European operators.

28. The table below shows prices for ODP access in 7 EEA countries, including Norway. Since the draft decision of 20 December 2019, the table has been expanded with data from Germany. Two different ODP products from Germany has been added to the benchmark. In

addition, prices have been added for 10 Gbit/s ports in addition to 1 Gbit/s ports. This contributes to strengthening the basis for the benchmark.

29. In view of the significant variation in both connection fees and monthly rental, a monthly cost has also been calculated, based on the sum of the actual monthly rental and the connection fee spread over a five year period.

Benchmark - Handover ports for VULA or corresponding products						
Country	1 Gbit/s port			10 Gbit/s port		
	Connection	Per month	Amortized	Connection	Per month	Amortized
Denmark	1 139	263	282	1 139	1 504	1 523
Ireland	15 184	61	314	41 364	170	860
Germany - L2-BSA	8 192	564	700	8 192	1 405	1 541
Germany - KVz-AP	4 559	52	128	4 559	67	143
Italy	2 134	1 347	1 382	2 134	5 054	5 089
Spain	4 036	314	381	20 683	2 854	3 199
UK	6 217	-	104	12 434	-	207
Norway	10 000	5 000	5 167	10 000	21 000	21 167
<b>Average:</b>						
Without Norway			470			1 794
Without Norway and without the highest and lowest value			361			1 466
<b>Price cap:</b>						
	<b>6 426</b>	<b>243</b>	<b>350</b>	<b>14 113</b>	<b>999</b>	<b>1 234</b>

Table 1. Comparison of establishment and subscription prices in seven EEA countries. All figures in Norwegian kroner<sup>4</sup>

30. As the table shows, the ODP prices in Norway are significantly higher than the prices in other countries which are a part of Nkom's benchmarking.

31. Benchmark can be calculated as an average over all the countries included in the table, except Norway. This gives an effective monthly price (with connection fee spread over a five year period) for 1 Gbit/s port of NOK 470 and for 10 Gbit/s port of NOK 1,794.

32. The lowest value for 1 Gbit/s port is the UK and the highest value apart from Norway is Italy. The equivalent for 10 Gbit/s port is Germany (KVz-AP) and Italy, respectively. Removing

<sup>4</sup> The figures have been converted from local currency to Norwegian kroner. Source is Norges Bank. Average exchange rates have been used for the last 365 days, with the last day being 26 August 2020. The source is Norges Bank: 100 DKK = 140.31 NOK, 1 EUR = 10.4718 NOK and 1 GBP = 11.9331 NOK.

the highest and lowest value in addition to Norway, the average effective monthly cost for 1 Gbit/s port is NOK 361 and for 10 Gbit/s port NOK 1,466.

### **3.4 Need to change the price structure for VUA/VULA fibre**

33. Below, Nkom will assess whether there is a need to impose requirements on Telenor concerning how the prices for access to ODP are to be determined and how this requirement should be designed in such case.

34. Today's price structure for VUA/VULA fibre entails a connection fee and a significant fixed monthly amount for port capacity on the ODP. To a significant extent, those price elements are independent of the number of accesses, even though the port capacity and the price thereof increase as more accesses require expansion of the available capacity. The marginal cost of access will decline as the access buyer increases the volume per ODP. It can generally be said that any such two-tiered tariff in the retail market can increase efficiency through lower prices for marginal units. The same potential for increased efficiency also exists at the wholesale level, but may have negative effects on competition if some providers either do not enter or leave the market.

35. The current price structure for local, physical access in the copper network, for example, has a fixed access-independent price element to a lesser extent. There is an connection fee and a monthly rental fee related to the overall contractual relationship for the individual access buyer. For central access via DSL Broadband Access and the E-line supplementary product, there is both a connection fee and a monthly rental for ODP. For this supplementary product, however, there is a separate product variant with capacity of 100 Mbit/s and a monthly rental that is somewhat lower than the price for a 1 Gbit/s port. This product variant does not exist for VULA ODP.

36. The price structure for VUA/VULA fibre, with a high connection fee and monthly rental for ODP connection, entails that it may be difficult for access buyers with small volumes to offer fibre to their retail customers as an alternative to today's products based on Telenor's copper network. The price structure for VUA/VULA fibre will mean that small volumes give relatively high average costs per access. According to the overview from Telenor of wholesale sales of Operator Access and DSL broadband access, there are a significant number of operators with relatively few accesses. Even though access buyers will to a certain extent be able to build their own infrastructure to replace the copper accesses, for some of the accesses there will be a need for alternative fibre access to be available at Telenor. Telenor's VUA/VULA fibre will therefore be the preferred alternative in many contexts. The greater the geographical dispersion of the retail offer from an access buyer, the greater the possibility that the access buyer will have to be present on multiple ODPs. The price structure with a relatively high fixed price element per ODP to be distributed on few accesses thereby presents an obstacle to the effective migration of customers.

37. At the same time, the migration of copper network customers might lead access buyers to add more accesses to ODPs where they are already present, thereby achieving a lower average cost for the accesses associated with this point. Currently, however, only one access buyer uses VUA/VULA fibre and might be able to achieve this.
38. In the corporate market, a provider will in many cases depend on access to Telenor's copper network in order to provide services to companies with many, dispersed locations. In some cases, the operators will base their services on their own infrastructure, but will still depend on being able to purchase access in Telenor's nationwide access network, in order to be able to compete for the retail customer. This has been, and is, an important precondition for more operators being able to compete for corporate customers with dispersed locations. This type of access requirement may entail a need for few, geographically dispersed, accesses. In turn, this entails potentially few accesses per ODP and relatively high costs per access, given the current price structure for VUA/VULA fibre.
39. The price structure may limit competition in this part of the market by excluding minor operators, and thereby to strengthen the market position of established operators.
40. High entry barriers might furthermore weaken negotiating strength on the demand side in the wholesale market.
41. There is no clear distinction between entry barriers and growth barriers. Many of the conditions restricting opportunities to enter a market might also constitute impediments to growth. A strategy for the market entry and growth of an alternative provider is to make use of regulated access to Telenor's access network in order to offer service in a limited area and later move into new areas and possibly establish their own infrastructure. If VUA/VULA fibre is priced in a way that undermines this opportunity, this might have a distorting impact on market entry and growth. Nkom also acknowledges that the price structure entails that growth in the number of accesses purchased as VUA/VULA fibre, in particular on the same ODP, will result in lower marginal costs.
42. The price structure for VUA/VULA fibre and the design of the margin squeeze model provide incentives for access buyers to concentrate on fewer ODPs. This may cause access buyers who were previously able to offer services on a relatively dispersed basis to consider a more geographically limited operation.
43. On the basis of the aforementioned, Nkom believes that the price structure for VUA/VULA fibre, with a high connection fee and monthly rental for ODP connection, has an entry barrier effect and might weaken actual and potential competition via access to Telenor fibre networks. Nkom furthermore believes that the price of ODP connection appears to be disproportionately high, viewed in the light of Telenor's estimated costs associated with establishing a new port on ODP.

44. With information concerning actual prices for ODP access, comparable prices in other countries and insight into Telenor's costs related to the product, a requirement for cost orientation of the prices for access to ODP and related port capacity will lead to a significant decrease from the current price level. Nkom therefore believes that a requirement for cost orientation of this service element is a relevant measure to reduce the entry barriers and facilitate the migration of accesses from copper to fibre.

45. According to Nkom's information, the costs associated with new port capacity cannot be justified by cost differences and factors related to e.g. differences in topography between Norway and other countries. Since the cost differences cannot be justified by particular Norwegian conditions, Nkom believes that one possible option might be to set the prices for access to ODP and port capacity on the basis of a benchmark vis-à-vis comparable services in a relevant selection of other markets, cf. Chapter 3.3.

46. The use of remedies in the regulation of the broadband markets is designed to facilitate the competition for services and also support the objective of infrastructure-based competition through the commercial deployment of high-speed broadband. In the Market Decisions, Nkom has concluded that strict regulation of VUA/VULA fibre, e.g. in the form of price caps or cost orientation, might have a negative effect on the investment incentives of other fibre network operators.

47. An Nkom decision regulating the prices for access to ODP and port capacity will entail a reduction of Telenor's flexibility within the framework of the margin squeeze model. Nkom assesses any consequences for Telenor's investment incentives to be small. The price regulation entails lower entry barriers, but does not change the requirement concerning the result of the margin squeeze test. Nkom takes the view, however, that a significant reduction of the prices for access to ODP would ease obstacles to the migration of accesses from copper to fibre, and also reduce entry barriers and thereby have a positive impact on the competition for services. These effects more than counteract any impacts on Telenor's investment incentives.

## 4 Selection of price regulation method

### 4.1 Cost information from Telenor

48. On 20 December 2019, Nkom published a draft decision that, as authorised by Section 4-9 of the Norwegian Electronic Communications Act, Telenor will be required to offer access to ODP in their fibre-based access network at cost-oriented prices. Nkom's draft decision furthermore stated that the cost orientation requirement must be based on an LRIC/LRAIC approach whereby the ODP prices will cover direct costs associated with the establishment and operation of access to ODP, and possibly a share of various categories of common costs. This

approach is based on how both operating costs and any share of various common cost categories are calculated as a percentage of CAPEX for the port card.

49. After the draft decision of 20 December 2019, Nkom has obtained relevant cost information from Telenor. Telenor has submitted an overview of costs associated with the establishment and operation of ODP access for an access buyer. The costs are specified in further detail in table 2. Nkom considers the information basis to be sufficient for the calculation of a price that is based on cost orientation. **Exempt from public disclosure:**

Cost element	CAPEX	OPEX	Remark
BNG	[REDACTED]		
Port card <sup>6</sup>	[REDACTED]		
1 SFP <sup>7</sup>	[REDACTED]		
Contractor cost of connection	[REDACTED]		
Order processing/configuration	[REDACTED]		
Operation and maintenance		[REDACTED]	[REDACTED]
Co-location		[REDACTED]	
Power (30 W)		[REDACTED]	
Battery back-up		[REDACTED]	

Table 2. Costs of ODP connection from Telenor

50. Nkom's LRIC model for fixed network access<sup>8</sup> includes costs for assets such as CAPEX<sup>9</sup> that are depreciated over time. OPEX is included in the year in which these costs arise. Costs can be associated with:

<sup>5</sup> Installed, including installation of interface card

<sup>6</sup> **Exempt from public disclosure:** [REDACTED]

<sup>7</sup> "Small Form-factor Pluggable transceiver" The device is used to obtain fibre interface from the interface card in BNG.

<sup>8</sup> <https://www.nkom.no/ekom-markedet/kostnadsmodeller-og-wacc>

<sup>9</sup> Principle A24: Efficient costs for each asset will be defined in terms of unit equipment costs, installation cost, cost of spares held and cost of decommissioning. The decommissioning cost will be set to zero by default unless a value can



- Unit equipment costs
- Installation costs
- Costs of holding spare parts
- Decommissioning costs
- OPEX for use of assets and maintenance

Costs can be adjusted regularly to take account of price changes for assets and inflation.

51. The unit costs are included as an initial investment amount (CAPEX). Access to ODP will include the costs of acquiring a port card/connection port. Capital costs are included by using the fixed WACC<sup>10</sup> for fixed networks, which is also used in the LRIC fixed network models and in the regulatory accounts. The acquisition is depreciated on the basis of an ordinary annuity calculation and includes the capital costs represented by WACC for fixed networks:

$$\text{Annuitet} = \text{Investering} * \frac{WACC}{1 - \left(\frac{1}{1 + WACC}\right)^{\text{levetid}}}$$

52. Alternatively, account can be taken of how the price of an equivalent asset will change over time, using a tilted annuity<sup>11</sup>. A price reduction in one year will lead to higher depreciation in the next year, and subsequently to somewhat lower capital costs. A price increase in one year will lead to lower depreciation in the next year, and subsequently to somewhat higher capital costs. Nkom deems it appropriate to make the calculations as simple as possible and will therefore assume constant prices across the time horizon of the regulation. According to the current decision, WACC for fixed networks is 8,3%<sup>12</sup>. An asset lifetime of five years is assumed.

53. The cost base from Telenor includes a share of the costs of setting up the BNG which are not related to the port cards. Nkom believes, however, that BNG and the need for a capacity increase for this is driven by the total traffic and/or access volume on BNG and that the costs of this should therefore be assigned to individual accesses/traffic and not to the port cost.

54. In view of the depreciation method, specified costs and conditions concerning lifetime and WACC, the selected approach gives a monthly cost of access to ODP of **Exempt from public disclosure: [REDACTED]**, excluding costs of other parts of the BNG platform than the port card.<sup>13</sup>

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*be substantiated. For each asset an efficient operating expenditure will be defined relating to the operation and maintenance of that asset.*

<sup>10</sup> <https://www.nkom.no/marked/markedsregulering-smp/%C3%B8konomisk-regulering/kapitalkostnad-wacc>

<sup>11</sup> *Skråstilt annuitet = Annuitet \* (1 + e)<sup>t-1</sup> where e = change in the price of the asset and t = period*

<sup>12</sup> [https://www.nkom.no/ekom-markedet/kostnadsmodeller-og-wacc#kapitalkostnad\\_wacc](https://www.nkom.no/ekom-markedet/kostnadsmodeller-og-wacc#kapitalkostnad_wacc)

<sup>13</sup> *With inclusion of a share of non-port card BNG costs, the calculated monthly cost is **Exempt from public disclosure: [REDACTED]**.*

55. Nkom does not consider it appropriate to develop a more comprehensive cost model. Any adjustments and development of the model will, in Nkom's opinion, have a marginal impact on the difference between the current price level and the price level that is reflected in the benchmark and cost information from Telenor.

#### 4.1.1 Determination of price regulation

56. Cost orientation in the form of cost accounting and LRIC modelling is the basis for the price regulation of several wholesale services in Markets 3a and 3b. The services that are regulated will normally comprise several cost elements. Regulation on the basis of the costs of access to ODP includes relatively few cost elements. This gives a simple and straightforward basis. It also entails that the costs may be affected to a significant extent by price changes for individual elements. This condition might be particularly unfortunate in a situation where the regulation is related to a service element based on a sub-product that is probably part of a more extensive agreement between Telenor and their supplier with a number of different products. This indicates that regulation which is solely based on these cost elements may be relatively simple, but unpredictable.

57. Nkom has also assessed the consideration concerning Telenor's need not to disclose negotiated prices with suppliers. These prices are by Telenor regarded as business secrets.

58. Based on Nkom's knowledge of Telenor's costs and the international prices, Nkom believes that the benchmark prices might be an appropriate alternative to achieve prices close to objective, relevant costs, while taking account of business-sensitive price elements with Telenor. In the same way as cost orientation, such an approach might be appropriate to reduce the entry barriers to offering services based on access to Telenor's fibre network, and thereby give access buyers better conditions to offer broadband services to their own retail customers in competition with Telenor's own retail activity.

59. The benchmark information obtained by Nkom shows that the current price level for ODP connection is higher in Norway than in the countries with which it is compared. Since the purchase prices for assets related to the establishment of ODP access are international and less dependent on national conditions, this indicates that the prices in the countries with which comparison is made are closer to a cost-oriented level than Telenor's current prices. Both of the information sources entail a significant reduction in Telenor's prices for ODP access.

60. Based on an overall assessment, Nkom believes that there is a basis to set a price cap for ODP connection based on cost information from Telenor and information from the benchmark in relation to other markets. The overall assessment involves a weighted average of Telenor's costs and benchmark. Benchmark is given the greatest weight, **Exempt from public**



**disclosure:** [REDACTED] to avoid that random variations in the purchase price for the port card in question lead to the need to change the price cap. Cost information obtained from Telenor shows a monthly cost of **Exempt from public disclosure:** [REDACTED] [REDACTED] Nkom's benchmark, with elimination of the highest and lowest price points, gives an effective average monthly cost of NOK 361 for 1 Gbit/s port and NOK 1,466 for 10 Gbit/s port, still with the assumption that the connection fee is distributed over the monthly rental fee in a 5-year period.

61. Based on a weighted average of these benchmark values and the cost basis from Telenor, the price cap is set at a price cap equivalent to NOK 350 per month for 1 Gbit/s port and NOK 1,234 for 10 Gbit/s port. The average connection fee and the average monthly rental is calculated across the products included in the benchmark. This is done separately for 1 Gbit/s and for 10 Gbit/s ports. Then the relation between connection fee and monthly rental is calculated separately for 1 Gbit/s and for 10 Gbit/s. Finally, the effective monthly rate (NOK 350/month for 1 Gbit/s and NOK 1,234/month for 10 Gbit/s) is distributed among connection fee and monthly rental with the same relationship as the one found across the countries/products included in the benchmark. This leads to the following prices: the connection fee is set to NOK 6,426 and monthly rental to NOK 243 for 1 Gbit/s port. Correspondingly, the connection fee will be NOK 14,113 and the monthly rental NOK 999 for a 10 Gbit/s port. The price caps will apply to the current regulatory period, i.e. for the years 2020 and 2021. If Nkom does not adopt a new Market Decision by 31 December 2021, the price caps will apply until further notice.

62. In many cases, it may be natural to adjust a price cap for general inflation by e.g. an annual KPI-based adjustment. It is also the case that the price level for the port card, which is the most important cost element for ODP, is expected to decline over time. These possible adjustments impose pressure in different directions in terms of the need for an annual adjustment of price caps. Nkom therefore believes that a fixed price cap for the current regulatory period is reasonable and predictable for both Telenor and access buyers. In addition, the time horizon for the imposed regulation is relatively short.

## 5 Changes in the margin squeeze model

63. In the draft decision, Nkom referred to how it will be assessed at a later time whether the consequences of the decommissioning of the copper network and the regulation of the price of ODP access make it necessary to change certain assumptions in the margin squeeze model,

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<sup>14</sup> An important reason why the benchmark is given the greatest weight is the discount level Telenor has achieved on this product element: The published list price from suppliers discounted to public customers is over NOK 4 million, while Telenor's negotiated purchase price is **Exempt from public disclosure:** [REDACTED]

cf. section 130 of the draft decision. Pursuant to this decision, Nkom will initiate a process to assess whether certain assumptions in the margin squeeze model should be changed. One example is the assumption made that the access buyer only connects to ODPs with more than 1,000 retail customers.

## 6 Proportionality

64. In principle, price regulation is considered to be an intrusive obligation. In this respect, Nkom believes that there is a good basis for determining the price cap. Once the price cap has been set, the price cap regulation as a method will generally require few resources. Nkom cannot see that a requirement to change the current price structure for VUA/VULA, so that the level of the ODP prices does not exceed the fixed price caps, as such can be considered to be particularly intrusive for Telenor.

65. A requirement to change the current price structure for VUA/VULA so that the level of the ODP prices may not exceed the fixed price caps in the current regulatory period will reduce the entry and growth barriers to offering access based on access to Telenor's fibre network and give access buyers better opportunities to offer broadband services to their own retail customers in competition with Telenor's own retail arm. This is an intended consequence of any such requirement and, in Nkom's assessment, is necessary so as to ensure that access buyers are able to achieve opportunities for competition that are equivalent to Telenor's own retail arm, including a real opportunity to migrate their end users from copper-network based to fibre-network based broadband services.

66. The overall assessment leading to the price cap regulation is based on cost data from Telenor and international benchmarks. The price caps are considerably closer to cost-oriented prices than the current price level. Cost orientation can be considered to be intrusive in the sense that cost orientation is normally considered to be a strict price obligation. Here, Nkom points out that the cost orientation requirement applies to a part of the cost of access which Telenor is permitted to charge for VUA/VULA access in its fibre access network. Nkom furthermore refers to how the effect of any such obligation could strengthen the competition for services based on access to Telenor's fibre access network. Nkom furthermore considers the competitive advantages of such an obligation to exceed the disadvantage for Telenor of setting a limit to the company's scope for manoeuvre when setting the price level for ODP access.

67. On the basis of the aforementioned, Nkom believes that a requirement for price cap regulation concerning ODP access is proportionate.

## 7 Decision

68. On the basis of an overall assessment, Nkom has concluded that Telenor is required to comply with a price cap for access to ODP, cf. assessments in Chapter 3.

69. The decision entails the addition of a new section in Chapter 7.3.11 of the M3a Decision:

*“661b Pursuant to Section 4-9 of the Norwegian Electronic Communications Act, Nkom requires Telenor to offer access to ODP at a maximum price equivalent to an effective price per month of NOK 350 for 1 Gbit/s port and NOK 1,234 for 10 Gbit/s port. The price cap is distributed on connection fee and monthly rental, respectively, so that the connection fee cap is NOK 6,426 and the rental cap is NOK 243 per month for 1 Gbit/s port. For 10 Gbit/s port the price cap is distributed on connection fee and monthly rental, respectively, so that connection fee cap is NOK 14,113 and the rental cap is NOK 999 per month<sup>15</sup>. The maximum prices will apply to the 2020-2021 period. If Nkom does not take a new decision in this market before 31 December 2021, the price cap set will apply until further notice.”*

70. The decision entails the addition of a new section in Chapter 7.3.10 of the M3b Decision:

*“473b Pursuant to Section 4-9 of the Norwegian Electronic Communications Act, Nkom requires Telenor to offer access to ODP at a maximum price equivalent to an effective price per month of NOK 350 for 1 Gbit/s port and NOK 1,234 for 10 Gbit/s port. The price cap is distributed on connection and monthly rental, respectively, so that the connection fee cap is NOK 6,426 and the rental cap is NOK 243 per month for 1 Gbit/s port. For 10 Gbit/s port the price cap is distributed on connection fee and monthly rental, respectively, so that connection fee cap is NOK 14,113 and the rental cap is NOK 999 per month<sup>16</sup>. The maximum prices will apply to the 2020-2021 period. If Nkom does not take a new decision in this market before 31 December 2021, the price cap set will apply until further notice.”*

## 8 Implementation

71. This Decision enters into force immediately.

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<sup>15</sup> Subject to the assumption that the establishment price is distributed over five years.

<sup>16</sup> Subject to the assumption that the establishment price is distributed over five years.



## 9 Appeals and deadline for instigating legal proceedings

72. The Decision may be appealed, cf. Section 11-6 of the Norwegian Electronic Communications Act, and Section 28 of the Norwegian Public Administration Act. The deadline to appeal a Decision is three weeks from the date of adoption of the Decision. Any appeal must be addressed to the Norwegian Ministry of Local Government and Modernisation and sent to the Norwegian Communications Authority (Nkom), cf. Sections 28 and 32 of the Norwegian Public Administration Act.

73. Only the Ministry of Local Government and Modernisation may make a decision on deferred implementation of the decision, cf. Section 11-6, fourth paragraph, of the Norwegian Electronic Communications Act, cf. Section 42 of the Norwegian Public Administration Act. If, during any appeal process, the implementation of the decision is deferred, the withdrawal of existing obligations will be deferred until a final decision has been made concerning the appeal.

74. It follows from Section 11-8, first paragraph, of the Norwegian Electronic Communications that lawsuits concerning individual decisions made pursuant to this Act or regulations pursuant to this Act, must be brought within six months after the decision was made. The time limit for legal action is interrupted by an appeal against the decision and does not run as long as the appeal is being processed, cf. Section 11-8 of the Norwegian Electronic Communications Act second paragraph.

With kind regards

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Director Service Market

Øyvind Halvorsen

Head of Section

*The document is approved electronically and dispatched without signature*