

Study prepared for Nkom



Principles for margin squeeze test for fibre access in Market 5

Updated version taking into account the consultation responses
on the initial principles

Bad Honnef, 3 July 2015

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1 Introduction

In the Norwegian Communications Authority's (Nkom's)¹ decision of 20 January 2014, Telenor ASA (Telenor) was designated as an undertaking with significant market power in the market for wholesale physical network infrastructure access (including shared or fully unbundled access) at a fixed location (Market 4) and the market for wholesale broadband access (Market 5). Pursuant to the Electronic Communications Act Chapter 4, several obligations were imposed.²

With respect to Market 4, Telenor has to provide unbundled access to fibre-based networks (Fibre LLU). This includes access to co-location, information and support systems and if necessary backhaul. Regarding Market 5, Telenor has to provide broadband access to fibre in the form of Virtual Unbundled Local Access (VULA). Telenor was also imposed an obligation of non-discrimination with regard to price and other terms for access. The obligation of non-discrimination applies between external providers as well as between Telenor's internal operations and external buyers of access. In order to monitor compliance of the non-discrimination obligation on price between Telenor's own operations and external providers, accounting separation and a margin squeeze test (MST) is applied for fibre based services in Market 4 and 5.

In this document we formulate principles for MSTs in Market 5, especially referring to the wholesale access obligations that enable alternative operators to provide Next Generation Access (NGA) retail services based on Fibre VULA.³ Thus, MSTs for copper based wholesale services or a combined copper/fibre MST fall outside the scope of this document. During the course of the consultation process, due to low volumes of potential available connections, Nkom has decided, for the time being, to abstain from conducting a MST for Fibre LLU in Market 4 (see also section 3.3.1 below).

In addition to the specified MST, Nkom also obliges Telenor to set wholesale prices for fibre access in such a manner that for stand-alone retail products at least the calculated monthly wholesale cost component for an alternative operator is covered by the monthly retail revenue component (gross margin). This is further explained in chapter 4.

The principles for MSTs in Market 4 and 5 were subject to a national consultation from 9 February 2015 to 6 March 2015. Revisions have been made based on responses to the consulted draft version of this document. The appendix to this document summarises the responses to Nkom's consultation on the described draft principles and give WIK's

¹ As of 1 January 2015, the Norwegian Post and Telecommunications Authority (NPT) has changed its name to the Norwegian Communications Authority (Nkom).

² See NPT/Nkom (2014a und 2014b).

³ See NPT/Nkom (2014a und 2014b).

assessment of the responses. Thereafter, this document has been consulted at a national level again together with the MST. Alternative operators had from 11 May until 1 June 2015 to respond and Telenor from 11 May until 8 June 2015.

The principles are used as a guidance for the development of a model for the execution of margin squeeze analyses. The model calculates what margin an alternative operator, that buys access to Telenor's fixed fibre access network, will be able to achieve when offering retail products similar to the ones offered by Telenor. The model will have to estimate the access buyer's margin by calculating the retail revenues that a buyer of access is expected to achieve by providing similar retail products as Telenor, and calculating the access buyer's expenses linked to providing these retail products, including access costs.

The overall objective of the MSTs is to ensure that buyers of wholesale fibre access can replicate Telenor's fibre based retail products without a negative total margin, while still considering a reasonable rate of return on the retail operations.

The principles are aligned with the Commission's recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (The Recommendation)⁴ and the BEREC Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze test, 5 December 2014).⁵ The Recommendation lays down the "concept" of how to run an ex-ante economic replicability test (ERT) for NGA products. From a practical point of view, the ERT can be considered as a term for an ex-ante margin squeeze test applied by national regulatory authorities (NRAs) in a NGA environment. The wordings MST and ERT will be used interchangeably in the rest of the document.

The EFTA Surveillance Authority (ESA) has commented on Nkom's notified draft decisions in Market 4 and 5 by stating that the following aspects should be specified for the MST: relevant retail products, cost standard, downstream costs, wholesale input, time period and compliance actions in case the test is failed. In this document all these aspects are addressed, except compliance actions, which will be addressed in Nkom's decision on using MSTs in Market 5.

The document is structured as follows: First, a MST is further defined and thereafter details and related principles are discussed. The design of the principles must be seen in the context of the regulation of Market 5 and the specific market characteristics.

⁴ See European Commission (2013).

⁵ See BEREC (2014).

2 Definition of a margin squeeze⁶

According to ERG “A *margin squeeze (also known as price squeeze)* is a situation where a vertically integrated firm with market power in a key upstream market, supplies rival firms in associated downstream markets and sets prices for the input and the downstream service in a way that renders unprofitable the activities of its competitors in the retail market.”⁷ In a situation of a margin squeeze, competitors are unable to replicate the retail prices of the SMP operator profitably.

A MST is passed if the margin between relevant revenues and wholesale costs is equal or higher than the downstream costs including a return on capital. Under this condition, the efficient operator earns (at least) a reasonable profit margin on its downstream costs, which is determined by the cost of capital (e.g. weighted average cost of capital, WACC) representing a market return on capital.

If the retail and the wholesale pricing structures are complex, the relevant prices may not be represented by a single price but rather by a set of combinations of relevant revenues and relevant costs generated by the product for which the MST is conducted.

A margin squeeze test is passed if

$$\text{Retail Price} - \text{Wholesale Price} \geq \text{Downstream Cost}$$

Downstream cost comprises own network cost, other costs (regulatory cost, number portability cost, etc.) and retail cost.

At least the following aspects have to be specified as main principles for a MST:

- the level of efficiency
- the business model (wholesale services / retail services / aggregation level / geographical footprint / the relevant market share)
- relevant retail products (e.g. flagship products) and prices (incl. promotions and temporary discounts)
- the relevant time period and methodology for running the test (period-by-period, Discounted Cash Flow (DCF) or Steady State)
- the relevant cost standard (LRIC+ or FDC, current or historical costs)
- the relevant downstream costs
- the relevant regulated wholesale inputs
- the reasonable profit, and
- the trigger for applying the test.

⁶ See also WIK for ILR (2013).

⁷ See ERG (2009), p. 2.

3 Main design principles of a margin squeeze test

3.1 The level of efficiency and adjustments for scale

A MST involves the methodological choice of the level of efficiency of the reference operator. It must be decided if the efficiency level of the reference operator should be comparable to the scale (and implicitly the efficiency level) of the SMP operator or the scale (and implicitly the efficiency level) of a generic (alternative) operator.

In this context three different approaches are applied by NRAs and/or competition authorities to identify a margin squeeze: the equally efficient operator (EEO) test, which assumes the same scale and efficiency as the SMP operator and hence the data set of the SMP operator is used. Secondly, there is the reasonably efficient operator (REO) test, which uses the scale and efficiency of an alternative operator and therefore also the data set of alternative operators. And thirdly, there is the adjusted EEO test, which starts with the EEO setup, however allows for adjustments of the SMP operator data. This could be the addition of specific costs only occurring by alternative operators in their role as access seeker, or this could be adjustments for efficiency in areas where the SMP operator efficiency can't be matched or in areas where alternative operators are more efficient.

A lack of economic replicability can according to the Recommendation⁸ be demonstrated by showing that the SMP operator's own downstream retail arm could not trade profitably on the basis of the upstream price charged to its competitors by the SMP operator. Thus the starting point in the Recommendation for the use of the ERT is an EEO test.

Regarding the details of the ERT, point 56 of the Recommendation states a minimum number of parameters that should be set, in accordance with the guidance provided in Annex II to the Recommendation. The Annex states that downstream costs should be estimated on the basis of the costs of the SMP operator's own downstream businesses (EEO test). However, the Annex also states that the NRA may make adjustments for scale to the SMP operator's downstream costs in order to ensure that economic replicability is a realistic prospect. The Annex mentions two situations where such a deviation from the EEO approach is justified. The first is where market entry or expansion has been frustrated in the past. The second is existence of indications that objective economic conditions do not favour the acquisition of scale by alternative operators, shown by very low volumes of lines and their significantly limited geographic reach as compared to the SMP operator's NGA network.

⁸ See European Commission (2013)

Telenor has very high market shares in the Norwegian retail markets for both copper based services, cable-TV, fibre and mobile services and does also have an integrated core and aggregation network supplying those services, (see figure 1 in Annex 4). Furthermore Telenor's market share in the Norwegian NGA retail broadband market is significantly higher than its competitors (see figure 2 in Annex 4). It is therefore reasonable to assume that Telenor has economies of scale in respect to its network which can't be matched by competitors in the NGA retail broadband market. The high market shares also imply that Telenor has superior economies of scope compared to its competitors related to the provisioning and distribution of NGA retail services.

As Telenor uses its integrated core network and distribution channels also for its fibre connections, this scale advantage applies to the specific fibre segment as well as to the overall NGA retail broadband market. In order to make the ERT for fibre a realistic prospect it is therefore necessary to take into account Telenor's superior economies of scale.

In Norway the suppliers of fibre based retail services to a large extent consist of smaller energy companies. Such companies serve retail customers in a restricted geographical area, but do often cooperate with other local energy companies with respect to the delivery of fibre based end users services such as broadband internet access, IPTV and voice telephony. The scale of these local energy/fibre companies is mainly below 4% share of the total fibre connections (less than 20,000 connections). The expectation is that the majority of the local energy companies deploying fibre will not significantly expand their scale beyond their current geographical area in the next years. Only the companies Viken, Lyse, Get and NTE have a share of total fibre connections in Norway which is above 5%. Furthermore, Viken is the only company that has a market share on fibre which is comparable to Telenor's (17%). It seems questionable whether Lyse, Get and NTE could reach a similar level (currently 5-11%, see figure 2 in Annex 4).

Thus in the Norwegian circumstances it could also be argued that alternative operators' limited geographical reach indicate that objective economic conditions do not favour the acquisition of scale by alternative operators.

As argued above, the specifics of the fibre segment in Norway makes it necessary to apply certain adjustments for scale to Telenor's cost and revenue in order to achieve a realistic ERT.

Relevant input parameters will be collected from the SMP operator Telenor, however, relevant input parameters might also be collected from alternative operators. This enables the assessment of whether the input parameters provided by Telenor are reasonable and reflect the cost of an efficient operator or if adjustments are necessary to ensure that an efficient alternative operator would also recover its costs. In case essential input parameters will not be provided by Telenor or alternative operators, alternative market data might be used to fill the gaps.

Hence, we find an adjusted EEO test approach as the best way to proceed in order

- To make scale adjustments where applicable;
- To include specific costs of alternative operators like co-location costs; and
- To collect data form alternative operators to make an assessment of reasonable efficiency and to fill the gaps of lacking input data which are not provided by the SMP operator.

Since EEO is the starting or reference point any adjustment of Telenor's data requires a solid justification.

Principle 1

An adjusted EEO concept will be applied; Telenor's data is used as basis and where justified, adjustments for scale are made. Furthermore, alternative operator specific costs are added and where input data from Telenor is lacking, market data can be used as input.

3.2 Flagship Products

The Recommendation directs the ERT to be applied for the 'flagship products' and defines flagship products as those retail products with the highest relevance in terms of revenue, subscribers and advertising expenses⁹.

We propose to determine flagship products that they are defined as the most important fibre based retail products offered by Telenor, which in sum represent a share of 70% of Telenor's revenue.¹⁰ Additionally, all fibre based retail products offered by Telenor which represent a revenue or subscriber share of at least 10% are treated as flagship products.¹¹

In case of newly launched retail products, which can be expected to have a significant impact in the retail market and become a flagship product in short time, such newly launched retail products may be defined as flagship products. In such case, the portfolio of flagship products and their subscriber numbers are determined with a future perspective by Nkom.

The determination of flagship products will be done in the process of applying the MST.

⁹ The concept of applying the margin squeeze test for flagship products has originally been proposed by the European Commission (2013) in the context of NGA wholesale pricing.

¹⁰ See WIK for ILR (2013), p. 5:

¹¹ See WIK for ILR (2013), p. 5:

Principle 2

In line with the Recommendation only 'flagship products' are considered. A flagship product can be a standalone or a bundled retail product based on fibre broadband access.

Flagship products will be determined as follows; Flagship products comprise those retail tariffs with the highest revenue, which cover cumulatively 70 % of the revenue in the most actual time period. In addition, retail products with a market share of 10 % either with respect to subscriber numbers or revenue will also be labelled as flagship products.

However, in case of substantial changes of retail tariffs, Nkom may deviate from this way of determining the relevant retail 'flagship products'. With a future perspective, it might consider newly launched retail tariffs as 'flagship products'. In such a case the number of subscribers of the individual "flagship products" will be determined with a future perspective.

3.3 The business model

When specifying the MST, it is necessary to first define the business models on which the test is applied. Business models in this context are defined as the possible combinations of relevant retail and wholesale services.

3.3.1 Relevant wholesale products

In the Recommendation, the Commission prescribes that NRAs should identify the most relevant regulated inputs at the NGA-based wholesale layer. The wholesale services subject to a NGA MST are the mandatory wholesale services which have to be provided by Telenor according to the market analysis of Market 4 and 5. Currently, these are

- Fibre LLU for point-to-point (P2P) fibre networks, and
- Fibre VULA for point-to-multipoint (GPON) networks.

Fibre VULA seems to be the most relevant regulated wholesale service due to the large share of the GPON topology in Telenor's fibre network. There are areas in Telenor's fibre network based on P2P topology and hence access to these customers is only possible with Fibre LLU. However, due to very few customers, currently fibre LLU is not considered as a highly relevant regulated wholesale service. Thus, Nkom has decided to abstain from conducting a MST for Fibre LLU for the time being.

3.3.2 Relevant retail services

There is one relevant business case to be evaluated;

- Relevant retail services based on Fibre VULA

Relying on Fibre VULA, alternative operators are enabled to provide a variety of retail services. This comprises combinations of broadband internet access, voice services and IPTV services. Currently, internet access is the essential retail service as 99%¹² of all fibre based subscribers subscribe to broadband internet access in Norway. Due to the increasing usage of mobile handsets for voice calls, subscribers who order voice service in addition to broadband internet access are limited to about 23% of all subscribers of fibre based broadband. On the other hand, IPTV as an additional service is quite popular in Norway; over 71% of fibre broadband customers have IPTV in their bundle. Therefore, currently, the most popular double play fibre-based product is broadband internet access + IPTV.

Thus, from a business case point of view, it seems reasonable to assume that an efficient alternative operator which uses Fibre VULA (incl. multicast as an extension) would offer single, double and triple play services at the retail level. IPTV services are not subject to ex ante regulation in the electronic communication markets. However, BEREC has expressed that revenue and cost components of IPTV services can represent a significant portion of downstream costs so these could therefore be considered as a non-regulated input in the MST¹³. Thus, we consider as a relevant business model, the provision of three fibre-based products (broadband internet access, voice services and IPTV) based on Fibre VULA.¹⁴ These three products can be offered standalone or as a bundle, either as double play or triple play product.

The flagship products will be determined for the applicable retail products possible on Fibre VULA.

As described above, in the Norwegian electronic communications market, alternative operators provide voice, broadband internet access as well as IPTV services - either as different bundles or as single standalone offers - for all kinds of customer groups and all kinds of download/upload speeds. These customers include residential users and business users which subscribe to the residential marketed products or standardised business products. In contrast, the majority of business services tend to be more customised and are provided alongside other information technology communications services (for example, software packages, other connectivity services, storage, security,

¹² Source: Nkom Broadband review 2014.

¹³ See BEREC Opinion, BoR (13) 41, chapter 2.2.5.2 (page 13).

¹⁴ In a recent statement on MST for VULA Ofcom (2015) also concluded that IPTV (incl. content) should be part of the retail fibre bundle to be considered in the MST.

networking solutions, support services, etc.).¹⁵ Business offers are also often offered based on leased lines, which is a wholesale product outside Market 5. In addition, the more customised nature and packaging with other information services, makes it difficult to test these business services with a standardised model.

Therefore, the MST will focus on the standardised residential and business products which can be offered based on wholesale Fibre VULA.

3.3.3 Aggregation level

The aggregation level determines whether the MST should be conducted for each flagship product individually or for a portfolio of identified flagship products. The Recommendation does not specify the level of aggregation. BEREC (2014) believes that it is appropriate for each NRA to determine what the appropriate level of aggregation should be when carrying out the MST in the context of identified competition problems in the market analysis.

If each individual flagship product were to be tested, this implies that there could be no margin squeeze for each individual flagship product. In comparison, when applying the portfolio test, the overall margin for the group of flagship products is reviewed. Hence, it could be that some flagship products in the portfolio have a negative margin while others contribute with a positive margin. Therefore, the portfolio test is less strict than the individual test and allows additional pricing flexibility in the product family for Telenor, which incentivises investments. The portfolio test fits to the described Norwegian fibre market with alternative operators, which in general offer a broad portfolio of retail services. The portfolio MST should so ensure that such an efficient alternative operator can operate profitably. On this basis the MST will use the portfolio approach.

The fulfilment of these portfolio MSTs ensures that alternative operators can provide a set of the most relevant fibre based standardised retail services based on the chosen wholesale service.

Thus, identified flagship products will be tested as a total group (portfolio) for Fibre VULA. Collected subscriber numbers of Telenor are used to determine the relevance of each individual product in the portfolio.

¹⁵ See also Ofcom (2015), p. 91.

The following MST will be conducted:

MST :	Portfolio test of identified retail flagship products consisting of broadband and/or voice and/or IPTV tested against Fibre VULA. The respective subscriber number per flagship product is used to determine the relevance in the portfolio.
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3.3.4 Geographical footprint

The business model has to be further defined by its geographic scope. The geographic scope is consistent with the scope considered in the market analysis of the relevant market 5. In the market analysis by Nkom (2014), Market 5 was defined as a national market. Thus, the alternative operator’s business case initially was also defined as being national.

However, given the current fibre rollout of Telenor, ‘national’ effectively means the geographical footprint of Telenor’s fibre network for which the mandated fibre wholesale access services are available. In case of Fibre VULA, we consider the footprint of Telenor’s fibre GPON network. However, small ODPs with less than 1,000 homes connected will probably not be economically attractive for an alternative operator. Hence, such ODPs will not be part of the relevant business case underlying the MST calculations.

3.3.5 The relevant market share

The MST is affected by the number of estimated subscribers and the related market share an alternative operator can gain in the retail market. Relying on wholesale Fibre VULA, the maximum numbers of subscribers is restricted by the geographical footprint of Telenor’s fibre network. Therefore the rollout of Telenor’s fibre network in the coming years plays an important role. In addition, the wholesale access services are only available for homes connected. Thus, the number of homes connected to Telenor’s fibre-based network determines the theoretical maximum number of subscribers for an alternative operator. Furthermore, we have identified that a reasonable business case is to focus on those customers connected to ODPs from Telenor with more than 1,000 connections.

In general, NRAs use a 20% to 25% market share to reflect the competitive position of the modelled alternative provider¹⁶. Given the above and considering the current market situation regarding fibre connections in Norway, we propose to use a 20 %

¹⁶ See WIK (2013), p. 7

share of the available homes connected by Telenor's fibre networks on the ODPs with more than 1,000 customers connected.

Subscriber numbers of an efficient alternative operator used in the MST =

Current homes-connected of Telenor's fibre GPON network, which are connected to the ODPs with more than 1,000 connections x 20 %.

3.3.6 Main characteristics of the business model

In what follows, we summarise the main characteristics of the business model described in previous paragraphs, that underpin the MST in reference to the mandatory fibre-based wholesale services for Market 5 in Norway.

Principle 3

The following MST will be conducted: portfolio of retail flagship products based on Fibre VULA.

Considered retail products are the residential marketed products, including the standardised business products.

Collected subscriber numbers of Telenor are used to determine the relevance of each individual product in the portfolio.

Identified flagship retail products can be (either on a standalone or bundle basis): for Fibre VULA: internet access, voice and IPTV.

The geographical footprint of the MST is intended to be national. However due to the availability of the wholesale services, this means the footprint of Telenor's fibre GPON network for Fibre VULA. In addition, due to business case considerations, only ODPs with more than 1,000 homes connected are considered as relevant in the MST calculations.

The estimated subscriber number in the MST is calculated by assuming 20% share of the homes-connected on Telenor's GPON network, which can be reached from the ODPs with more than 1,000 connections. The most updated network rollout of Telenor will be considered in the test.

3.4 Relevant retail services and prices

All price elements of the flagship product(s) form the basis of the relevant revenues. All relevant revenues should be considered including recurring and non-recurring price elements. One-off pricing elements (e.g. connection charges) should be spread over periods which are in line with average customer lifetime of the service in question.

Depending on the business model, if voice services are part of the bundle, the revenues from inbound call termination are considered as well as part of the relevant revenues.

If weighting of relevant product elements, tariffs and/or customer groups are needed to calculate the relevant revenues, different sources might be used in addition to the information provided by Telenor (e.g. profiles provided by the alternative operators or market data).

If retail (list) prices are discounted permanently or are temporarily reduced in the form of promotions, such discounts or price reductions are considered for the respective time period while calculating annualised monthly revenues. The same applies for promotions in which certain pricing elements (e.g. connection fees) are not charged or certain give-aways (e.g. routers, modems) are provided free of charge. If give-aways are provided free of charge, a net price is estimated and give-aways are considered as a retail cost valued at market or purchase price.

Principle 4

All price elements of the flagship product(s) of the SMP operator, for which the test is being conducted, form the basis of the relevant revenues. All relevant service revenues have to be considered including recurring and non-recurring price elements.

If retail (list) prices are discounted permanently or are temporarily reduced in the form of promotions, such discounts or price reductions will be taken into consideration for the respective time period while calculating the annualised monthly revenues.

For the determination of the relevant revenue, Nkom may use additional information provided by the alternative operators or market data to complement Telenor's data.

3.5 Relevant time period and methodology for running the test (period-by-period, Discounted Cash Flow (DCF) or Steady-State)

A MST has to be carried out for a reasonable timeframe. The test can be conducted by using a period-by-period approach or a multi-period approach.

The period-by-period test can take the accounting year as a basis for analysis. The accounting year approach compares revenues and costs as they occur for this period. This means that non-recurring costs and revenues are becoming part of the margin squeeze calculation in the year of payment or reception, independent of the fact that they may be economically relevant for several periods.

In a multi-period approach, such as the DCF approach or steady-state approach, the test is conducted once for the relevant period. The test then requires that cost and revenues generate a positive margin over the whole period considered. According to the Recommendation, NRAs should evaluate the profitability of the flagship products on the basis of a dynamic multi-period analysis.

By using a DCF approach the cash flows for the retail products under consideration will be discounted.¹⁷ The outcome of this approach is the net present value (NPV) of the expected future cash flows of the service/product under consideration. If the NPV is positive, the provision of the service/product generates value for the operator. If the NPV is negative, then the provision of the service would result in a loss and a margin squeeze occurs. The relevant period for this test is usually being set in accordance with the estimated customer average lifetime. There is, however, also the option to use a rather long period that includes the whole product lifetime or even multiple investment cycles.

In the steady-state approach, costs and revenues are also broken down to one time period. Costs and revenues are, however, allocated according to cost causation. This means that investment costs are allocated according to their useful economic life. Non-recurring costs and revenues are also allocated according to economic cost causation according to the relevant time period, e.g. average customer lifetime or asset lifetime. Depending on the allocation, these amounts are discounted first to calculate the current value and then equally spread over the life time by using the annuity formula.

The period by period approach could lead to economically improperly allocated costs and revenues over time. Therefore under this approach, a margin squeeze might show in one period and none in the following period although nothing has changed regarding costs, wholesale/retail prices and distribution of customers. This is then caused by an unequal distribution of non-recurring costs and revenues over time. The steady state approach as well as the DCF approach avoid such accounting distortions. This is of

¹⁷ For comparing the pros and cons of a DCF and a period-by-period approach see ERG (2009), p.14f.

particular importance if large initial investments like expenditures for marketing are required. A DCF approach, on the other hand, requires an estimation of the relevant parameters over a relatively long period of time.¹⁸

A steady-state approach is therefore considered as the appropriate approach to conduct the MST in Norway. The steady-state approach provides margin squeeze information for each particular period. At the same time costs and revenues are properly allocated over time and discounted where appropriate. A steady-state approach is highly transparent and practical. A periodically conducted steady-state MST appropriately can also take into account market developments as it allows Nkom to adjust subscriber numbers, price changes etc. according to real market data instead of uncertain forecasts.

Principle 5

A multi-period, steady-state approach with following characteristics will be used to conduct the MST:

- It discounts/annualizes one-time costs and revenues considering customer life time and asset life time where applicable;
- It is conducted periodically and therefore allowing the consideration of market developments.

3.6 Reference time

According to the Recommendation, NRAs should identify an adequate reference time period for the multi-period analysis. The relevant period for the MST should be set in accordance with the estimated average customer lifetime. Over this time period, a customer contributes to the recovery of the (a) downstream costs that are annualised according to a depreciation method and economic lifetime appropriate for the assets in question and (b) other downstream costs that are normally not annualised (typically the subscriber acquisition costs) and which the operator incurs to gain customers and should seek to recover over the latter's average lifetime.

The adequate reference time period for the multi-period analysis of the MST in form of a steady-state analysis should be set in accordance with the estimated average customer lifetime for fibre-based retail services. Reliable customer life-times for fibre broadband subscriptions is for the time being not available in the Norwegian broadband market.

¹⁸ See ERG (2009), p. 15.

Therefore, if in the absence of robust data for fibre-based subscription times, Nkom will consider information regarding the average customer life time for copper-based broadband subscriptions in Norway and other market data to determine an approximation for the fibre-based broadband customer life-time.

Principle 6

The adequate reference time period for the multi-period analysis of the MST in form of a steady-state analysis will be set in accordance with the estimated average customer lifetime for the fibre-based retail services.

If there is no robust data regarding customer lifetime for fibre-based services, the average customer lifetime for copper-based broadband services and other market data will also be considered while determining an approximation for the fibre-based broadband customer life-time.

The costs of the applied assets (where available) in the test will be annualised based on the relevant economic asset life time.

3.7 The relevant cost standard

The Recommendation proposes LRIC+ as the appropriate cost standard.¹⁹ This cost standard ensures that entrants can recover their efficiently incurred costs. LRIC+ is the change in total costs resulting from the production of an increment in the quantity of output and a mark-up for common/overhead costs for the relevant service.

Just relying on variable or avoidable cost does not include an allocation of fixed costs which is a major cost component that telecom operators are facing. Only short-term price decisions can be taken on that basis. The LRIC+ standard is consistent with market entry decisions which require all relevant costs to be covered in the long-term. LRIC+ data can be calculated on the basis of bottom up or top down data. However when these data are not available, notably for retail costs, fully distributed costs (FDC) may need to be used as standard based on data from the SMP operator's accounts.

Principle 7

The LRIC+ cost standard will be used to determine downstream costs where available relying on bottom up or top down data from the SMP operator. Where LRIC data is not available (e.g. for retail costs), FDC may be used.

¹⁹ This is also in line with the recommendation of BEREC (2013), p.34.

3.8 The reasonable profit

The Recommendation does not set out guidance on a reasonable profit. However, an alternative access seeker should be able to economically replicate a downstream offer by the SMP operator.

The relevant competitive return or margin in a margin squeeze context is usually identified indirectly by using a Weighted Average Cost of Capital (WACC) approach for the downstream business. The WACC represents the opportunity cost of capital invested in the business, and therefore the return on investment required to compensate for this opportunity cost. Thus, the WACC should reflect the risk of the retail business of an efficient alternative operator. Otherwise, the margin between the retail revenues and the wholesale costs is not sufficient for an efficient competitor to earn an appropriate return on capital on its downstream costs.

We find that the term reasonable profit rate should be determined in reference to an alternative operator that uses wholesale fibre access services (e.g. VULA) offered by Telenor to provide retail fibre broadband services. Currently, Nkom has set a WACC of 8,9% (in its decision of 18 December 2014) for a reference operator in the Norwegian overall fixed line market including copper and fibre networks. Therefore, this WACC will be used in the MST.

Principle 8

An alternative operator should be able to earn a reasonable rate of profit on its downstream costs. The set WACC of 8,9% by Nkom is considered to reflect the risk of the retail business of an alternative operator based on a wholesale fibre service (i.e. Fibre VULA).

3.9 Relevant downstream costs

The relevant downstream costs are added to the costs of the relevant wholesale inputs which represent the respective business model. Basically downstream costs consist of five different cost categories:

- (1) Own network cost
- (2) Costs for terminating traffic in other networks
- (3) Other costs (regulatory, number portability etc.)
- (4) Retail costs
- (5) Other common costs.

Where available, NGA network costs will be derived from Nkom's bottom up LRIC model. The other downstream costs will be derived via data requests from the SMP operator's accounts complimented with provided data from the alternative operators.

(1) Own network costs

Depending on the business model, the alternative operator's own network cost with respect to fibre-based retail access services may consist of the following elements:

- Fibre equipment at customer site (CPE)
- Equipment at the point of co-location (IP switch, ports, ODF)
- Maintenance & operating costs of equipment
- Backhaul and international capacity
- Operating for network services
- Capital cost of own infrastructure
- Common costs at level of network infrastructure.

Network elements have to be dimensioned such that they represent the chosen market share of the modelled alternative operator. In addition, an efficient network structure is assumed. Network equipment has to be depreciated according to the relevant economic asset lifetimes.

(2) Costs for terminating traffic in other network

Costs for terminating traffic in other networks and/or for peering and transit have to be calculated according to actual payments being made to other operators, hence the net costs need to be used. The applicable rates can be regulated or negotiated.

(3) Other costs (regulatory, number portability etc.)

Besides the above mentioned downstream costs above and retail costs, other costs may occur that could be relevant. Examples of such costs are expenses due to regulatory obligations or number portability. These costs will be taken into account in the MST model as well.

(4) Retail costs

According to BEREC, retail costs include the following cost categories:

- Customer acquisition and retention
- Customer care
- Marketing and advertising
- Billing
- Sales Personnel salary/Sales commission
- Bad debt
- Customer Premises Equipment/Distribution of CPE
- Product development/management
- Common retail costs.

The Recommendation does not specify further the splitting of retail costs.

A category-by-category approach supported by a mandatory accounting separation requirement to the SMP operator seems to be the adequate approach. This provides detailed information to Nkom to assess, in combination with benchmark data or data from alternative operators, whether the provided cost information is reasonable for an efficient operator providing the corresponding retail service.

(5) Other common costs

Other common costs are costs on the level of administration and management that cannot be allocated to individual services. Equi-proportional mark-up (EPMU) is the methodology that is commonly adopted in relation to LRIC cost modelling. A percentage is calculated as the ratio of total common costs to total incremental costs. Utilising this method, costs are spread across all relevant services by the same percentage.

Principle 9

The following five kinds of cost categories - own network cost, costs for terminating traffic in other networks; other costs (regulatory, number portability etc.), retail costs and common costs will be considered in the MST.

For retail costs a category-by-category approach will be used in line with the categorisation presented by BEREC.

An EPMU approach will be employed for marking up other common costs.

3.10 Relevant regulated wholesale inputs

In most cases the pricing structure of wholesale products is complex. All elements of the pricing structure, which an access seeker has to pay for purchasing the relevant elements of the wholesale input, have to be considered. This includes amongst others recurring and non-recurring charges, charges for termination of the service, service provisioning and service cancellation, if applicable.

Non-recurring charges have to be depreciated (or discounted) over a relevant time period. Volume discounts and/or long-term access pricing agreements²⁰ should be taken into account in case they are representative for the business model of access seekers and/or they are in line with a competitive market structure.

Principle 10

All elements of the pricing structure, which an access seeker has to pay for purchasing the relevant elements of the wholesale input, have to be taken care of. This includes among others recurring and non-recurring charges, charges for termination of the service, service provisioning and service cancellation, if applicable.

Non-recurring charges have to be depreciated (or discounted) over a relevant time period. Volume discounts and/or long-term access pricing agreements will be taken into account in case they are representative for the business model of access seekers and/or they are in line with a competitive market structure.

3.11 Trigger for applying the margin squeeze test

A MST calculation creates administrative work causing costs to all participants; the SMP operator, alternative operators as well as the regulatory authority. The occasions in which a MST is conducted should strike the right balance between the following aims:

- Alternative operators should be enabled to operate a profitable business case by using mandatory fibre-based wholesale access services provided by Telenor.
- Retail pricing flexibility for Telenor should be ensured.
- Price, cost and demand changes over time should be covered in MST calculations within reasonable time periods.
- MST calculations should be transparent and predictable for the market players directly affected by the wholesale services and their prices.

²⁰ Criteria to assess long-term access pricing in case of FTTH are specified in Section 7 and 8 of the NGA Recommendation (2010).

- The administrative work of conducting a MST should be limited.

Therefore, the following three triggers for conducting a MST are foreseen:

1. The MST will be conducted each time a new wholesale price in Market 5 is determined and/or when a new wholesale product is being introduced.
2. A MST for each relevant wholesale service will be conducted periodically, every 6 months, in line with the existing 6 month collection of subscriber data for Nkom's statistics report.
3. Additional MSTs may be conducted under reasonable and proportionate circumstances. This may in particular be the case if competitors make justified reasoning of major market changes related to costs, prices, and customer distribution which would lead to different results compared to the original ex ante MST.

According to the Recommendation, the test procedure can be started at any time but no later than three months after the launch of the relevant retail product. Since the MST is restricted to 'flagship products', this requires that a 'flagship product' is identified. Thus, in case there is strong evidence that a new flagship product is launched, the portfolio test should be conducted within three months.

Principle 11

Three triggers for conducting the portfolio MST are identified:

1. The ex-ante portfolio MST will be conducted each time a new wholesale price in Market 5 is determined and/or a new wholesale product is introduced.
2. A portfolio MST per wholesale product (e.g. Fibre VULA) will be conducted periodically, every 6 months, in line with the existing 6 month collection of subscriber data for Nkom's statistics report.
3. Additional portfolio MSTs may also be conducted under reasonable and proportionate circumstances. This may in particular be the case if competitors make justified reasoning of major market changes related to costs, prices, and customer distribution which would lead to different results compared to the original ex ante portfolio MST.

4 Requirement of positive gross margin

As the MSTs consider the total margin of a portfolio, the test allows Telenor flexibility as to how it sets the wholesale prices for fibre access and thus a greater flexibility in setting the fibre based retail prices. However, this manner of testing could give Telenor the flexibility to set the prices of the underlying wholesale services, such that alternative operators are not capable of recovering the corresponding wholesale costs. This could apply for non-flagship retail products or for flagship retail products with lower subscriber numbers as these have less impact on the total measured portfolio margin.

Therefore, due to the requirement of non-discrimination and in order to achieve the purpose of the regulation, there will be a limit to the allowed fibre wholesale pricing flexibility, such that for each (flagship and non-flagship) standalone retail product based on a fibre wholesale service, at least the wholesale costs should be covered.

As a clarification of the imposed obligation, the calculated monthly costs of the wholesale components for each of Telenor's fibre based retail products should not exceed the corresponding calculated monthly retail revenue. The principle of a positive gross margin applies to Telenor's fibre based standalone broadband products.

A gross margin test for the fibre based standalone broadband products is passed if

Total monthly Retail Price – Total monthly Wholesale Price ≥ 0

5 References

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6 Appendix - Consultation responses – first round

Consultation responses on the draft principles for margin squeeze tests for fibre access in Market 4 and 5

a. Introduction

This appendix summarises the responses to Nkom's consultation on the draft principles for the use of margin squeeze tests as a tool for monitoring compliance with the obligation of non-discrimination for fibre access in Market 4 and 5. The consultation was conducted from 9 February to 6 March 2015.

The following parties submitted written responses to the consultation:

- Broadnet
- Lyse and Viken
- NextGenTel
- TDC/Get
- Telenor

On the basis of received input, the principles for margin squeeze tests in Market 4 and 5 have been updated and the margin squeeze model has been revised accordingly. The comments are discussed per proposed principle from 5.3 onwards. In 5.2, first the other general comments are discussed.

b. General comments

Broadnet supports Nkom's initiative to develop an ERT for market 4 and 5. Broadnet considers this test to become an important tool to ensure that alternative providers are able to replicate Telenor's offers at a retail level. According to Broadnet's view the majority of broadband accesses will be produced over copper the next ten years. Therefore Broadnet's main concern is that Nkom starts the process of testing margin squeeze in Market 4 and 5 at the wrong end. To ensure viable competition, Nkom should test margins squeeze on copper and then move on to an ERT test on fibre. Alternatively, a combined model must be built. Broadnet presents the following main reasons for this view;

- The majority of broadband access will be produced over copper the next ten years.
- New technologies will enable high speed broadband opportunities on copper increasing the importance of the copper in several geographical regions going forward.
- The copper market has available all relevant historical data related to volumes, market prices, Telenor cost and corresponding changes/development over time. Thus all data to conduct a viable MST in an important market should be in place.

- The fibre based products that Telenor offers are not yet in widespread commercial use.
- An ERT model for fibre does therefore not have enough data input to develop a robust model.
- The work on the LRIC model in Market 4 and 5 has provided the Authority with sufficient data to perform a MST for fibre.
- This test could be developed based on the principles of the margin test in Market 15 or as a combined model for copper and fibre.

Broadnet finds that the ERT test will not have any value for Telenor's wholesale customers unless Nkom commits to intervene rapidly if Telenor should fail the test. Broadnet therefore requests Nkom to provide predictable guidance on how Nkom will monitor compliance and, if necessary, intervene.

Broadnet states that an infringement of the imposed remedies in Market 4 and 5 will result in economic losses for the alternative network providers. Broadnet proposes that Nkom should therefore also ensure that the access buyers are in a position to claim full compensation for the harm caused by the infringement.

Broadnet agrees with Nkom's definition of a MST and supports that the test must take cost of capital into account.

Broadnet finds that a test for margin squeeze cannot by itself (fully) ensure that discrimination does not take place. Further supervision of non-discrimination is essential and fast intervention is important if future analyses or complaints from access buyers indicate breach of the Market 4 and 5 decisions.

Lyse and Viken finds that different assumptions for MSTs in the wholesale market for mobile access, copper access and fibre access should be applied.

Lyse and Viken believe that the assumptions and principles behind MSTs in the fibre access market should not automatically be based upon the MST models that have previously been used to evaluate access prices in the copper and mobile market. Such a "one size fits all" approach to the application of MSTs in the market for electronic communications may distort competition in the fibre market, which in the worst case can reduce incentives for continued deployment of the fibre access network in Norway. Only 37% of households in Norway are currently able to connect to the fibre access network. If the political objective for full coverage of at least 100Mbit/s broadband is to be achieved, it is important that the regulation of prices and margins in the fibre market adequately takes into account the investment risk and profitability levels of the companies that are deploying fibre. If this does not happen, regulation can restrict fibre deployment in Norway.

The mobile market is characterized by regulatory hurdles in the establishing of an operator. Access to frequencies is required in order to become a mobile operator and invest in mobile network infrastructure. But these frequencies are a limited resource, which the authorities assign/sell to companies which wish to build a mobile network. On this basis, in the early 2000s regulatory regimes were established in many countries which gave companies without their own frequencies access to the mobile network. Mobile operators with significant market power have since then been required to give access to established nationwide mobile networks, and this has been subject to either price regulation or margin regulation based on non-discriminatory obligations. Lyse and Viken believe it is important to underline that the obligation to give access to the mobile network with price or margin regulation was not introduced until several years after the investments in nationwide mobile infrastructure had taken place. That has been a central element in the development of MSTs in the mobile market.

Telenor's copper access network also had nationwide coverage when broadband access regulation was launched in the market about 15 years ago. At that time no other company considered the building of a competitive copper access network to be a sustainable business. Telenor therefore had a de facto monopoly in the copper access market as a result of significant barriers to entry. In this situation, before alternative access technologies were regarded as sufficiently substitutable to be part of the same relevant product market, access obligations were imposed on the copper network with accompanying price/margin regulation. As in the mobile market, the principles and assumptions for evaluation of the access price/margin were based on the fact that the SMP operator already had an established nationwide access network, and that the SMP operator's copper access business was showing positive margins from year 1.

The situation is considered completely different as far as the fibre access market is concerned. Firstly there is no nationwide fibre access network in existence today. Quite the contrary, fibre is an infrastructure which is under deployment, and many operators are competing to build out network. Barriers to entry such as those described above for the mobile and copper access markets should not be among the assumptions when the model for the fibre network access price or margin is being developed. All operators that wish to offer fibre based broadband can in principle invest in a fibre access network themselves. There is an investment risk connected to fibre deployment, but such an investment risk cannot be considered a barrier to entry. On the contrary, Lyse and Viken would argue that operators which do not want to take on the investment risk inherent in fibre deployment cannot expect a fibre network access price or margin which does not take this investment risk into account.

Lyse and Viken would like to emphasize that there is a high investment risk connected to fibre deployment. Even if operators who were early deployers of fibre now have a positive margin, it must still be taken into account that new investments in fibre in areas where it does not already exist still involve high financial risk for the company deploying

it. This must be considered in the MST for fibre, and Lyse and Viken cannot see that the model that WIK has developed sufficiently does so.

Lyse and Viken ask the question whether it is reasonable that operators which do not take on investment risk should by regulation be guaranteed a positive margin from the first customer when companies that have deployed fibre access network take several years to achieve a positive margin in a deployment area.

Lyse and Viken underline that a fibre deployer's margin is very different to that of the SMP operators in the mobile and copper markets which have been subject to price and/or margin regulation. No fibre deployer has a positive margin for a customer or a deployment area from year 1. For projects of significant investment such as the deployment of a fibre access network in a given geographical area, it is normal to have a negative margin during the first few years even if the expected return on investment from a net present value perspective is positive. Lyse and Viken cannot see that this is taken into account in WIK's model..

Lyse and Viken refers to the following statement in the principles document: "The overall objective of the MSTs is to ensure buyers of wholesale fibre access can replicate Telenor's fibre based retail products with a reasonable margin." Lyse and Viken believe that it is unreasonable that operators which have not taken on any investment risk should be guaranteed positive margin from the first customer through regulatory obligations when network deployers need many years in order to achieve positive margins.

NextGenTel takes advantage of this opportunity to make some general and preliminary comments on the principles. As they understand Nkom has intended to come back with a separate decision related to the test, and NextGenTel therefore reserves the possibility of further comments at a later date.

TDC/Get supports the introduction of a MST in Market 4 and 5. This is in line with the Commission's recommendation on consistent non-discrimination obligations and cost methodologies and the comments from the EFTA Surveillance Authority ("ESA"). Such a test is required in order to ensure that alternative providers are in position to replicate Telenor's offers at the retail level.

TDC/Get agrees with WIK's overall approach and confirms that the document is based on, and correctly reflects, the existing EU regulatory framework. However, some of the principles put forward would not ensure alternative network operators the equivalence of input required by the regulatory framework. TDC/Get asks that Nkom corrects these shortcomings before finalising the model.

TDC/Get points out that Telenor tends to offer access products that include more elements than they need; and by Telenor creating a mandatory bundle of products, their total costs become too high compared with the price that the end users are willing to pay for the service.

TDC/Get points out that they are often charged with an establishment/investment fee (anleggsbidrag) when making a requirement for fibre access. Telenor's current practice gives them a high uncertainty of what the actual price for a fibre access will be.

From TDC/Get's experience, more than 50 % of all broadband access lines in the business market are delivered on copper access. The scope of this margin squeeze test is only fibre access and TDC/Get calls for an inclusion of copper in the model in order to test the replicability for the broadband market in general.

When working on the data request that Nkom and WIK will use in the MST, TDC/Get finds that they have limited relevant data to provide;

- TDC/Get have so far not ordered access based on Telenor VULA. The way this product is set up, it is not suitable for their business.
- The Ethernet Connect product is not ready for delivery from Telenor.
- There is only one relevant product in the business segment to provide information on.

The input from the access buyers will not give all the necessary information to make a solid model for fibre. However, for copper all the alternative network owners have relevant information to share.

In Denmark a MST for copper has been developed since 2009. The first test was performed in 2013. Fibre will be included earliest in the end of 2015.

TDC/Get therefore requests that copper access is included in the model that will test margin squeeze in market 4 and 5. TDC/Get finds that a MST cannot by itself (fully) ensure that discrimination does not take place. Further supervision of non-discrimination is necessary.

Nkom will have to effectively supervise and enforce the test in order to prevent discrimination. TDC/Get notes that the document does not discuss how the Nkom intends to react if Telenor fails the MST. On this basis TDC/Get asks Nkom to provide firm guidance on how to use the model and how it will intervene if Telenor fails the MST. Nkom should as a minimum:

- Set out that Telenor has to adjust wholesale prices no later than 14 calendar days after failing the test,
- State that Telenor have to adjust prices if these have not been adjusted within the period referred to above, and

- State that it will automatically impose a fine if Telenor fails the test. The fine must be sufficient to deter Telenor from exposing competitors to a margin squeeze.

An infringement of the imposed remedies in Market 4 and 5 on the part of Telenor will result in economic losses for the alternative network provider(s) concerned. Nkom should therefore ensure that the final decision on the MST is drafted in such a way that aggrieved parties are in a position to claim full compensation for the harm caused to them.

TDC/Get agrees with WIK 's recommended definition and that the test must take cost of capital into account. This should be specified in the final decision as Nkom incorrectly excluded this factor from the Market 15 MST.

Telenor regrets the fundamental lack of perspective on the functioning and empirical facts of the Norwegian high speed broadband market pervading the Memorandum. The Memorandum does not take due account of the fact that the market has indeed delivered well on all relevant indicators in the absence of specific regulation of Telenor's fibre based networks. Further, based upon the general obligations imposed on Telenor in Market 4 and 5, the Memorandum assumes stereotypical competition problems and proposes design parameters that are at best suited for regulation of current generation networks (CGA) only. Telenor finds the assumptions and design parameters proposed by WIK to be erroneous from an economic perspective. They are not proportional to the policy goals of Nkom, including the market decisions, and are not linked to the reality of the market it is meant to regulate.

is deeply concerned about the Memorandum's complete lack of reference to the declared Norwegian policy goal of promoting NGA infrastructure investments. WIK says the following about the overall objective of the MSTs:

"The overall objective of the MSTs is to ensure that buyers of wholesale fibre access can replicate Telenor's fibre based retail products with a reasonable margin."

First, Telenor objects to this overall objective on the basis that it shortcuts any real discussion of the main design parameters of the MST that is supposed to be consulted, such as the existence of margins.

Second, in accordance with this objective, WIK consistently proposes MST design principles which stand out as biased towards promoting competition on Telenor's *existing* fibre based access infrastructure, without consideration of how the proposed MST design will affect incentives to invest in *new* NGA infrastructure. To unconditionally ensure all buyers of access a reasonable margin should not be the relevant overall objective of the ERT for NGA services. Such an unbalanced approach is not only at

odds with Nkom's own declared policy goals and decisions in Market 4 and 5, but also deviates from the guidance of the European Commission's 2013 Recommendation that emphasises both the promotion of efficient investment in NGA infrastructure while simultaneously safeguarding the degree of competition that already exists in the market, both based on current generation access (CGA) and alternative infrastructure.

Telenor also notes that WIK claims the proposed principles to be aligned with the Commission's Recommendation **and** the BEREC Guidance. This claim, while true in some dimensions, is underplaying the fact that there are considerable deviations from the approaches proposed by the two institutions. In particular when it comes to the distinction between current (and future) NRA practice regarding MST of CGA services, the ERT is specifically designed for NGA services.

Telenor submits a report prepared by Charles River Associates (CRA) for ETNO. The purpose of the CRA report is to analyse the Commission's Recommendation and the BEREC Guidance and recommend a consistent and proportionate approach regarding the parameters and procedures of ERTs in the context of NGA services. The CRA report should be read as complementing Telenor's input to the proposed parameters for the MST in this letter.

WIK is using the ERG definition of a margin squeeze from 2009. The chosen definition of the squeeze situation itself is not disputed by Telenor, but WIK's subsequent discussion about when a test is failed is not as straightforward, as it also introduces an additional term, 'competitive return on capital', into the formula.

Telenor also disagrees with WIK's apparent understanding of ERT as synonymous for an ex-ante MST applied by NRAs in a NGA environment. The ERT is indeed distinct from both mainstream ex ante MSTs used for assessing CGA as well as from ex post MSTs conducted under competition law. It is in particular important to note that the demonstrable retail price constraints from established CGA-based competitors and NGA alternative operators with own scale have important implications for the choice of relevant design parameters of the ERT test. The CRA report concludes very firmly on this issue (cf. section 4.1, points 86-91). Telenor regrets the lack of such nuances in the proposed approach from WIK to the main principles for a proper MST for NGA services in Norway.

Finally, it is an underlying problem of the Memorandum that the NGA investment risk of the network owner is not at all taken into account - a risk Nkom has expressed concern over - when proposing design parameters for the MST test. Nonetheless, this consideration is explicitly expressed in Annex II to the Recommendation:

"When setting the parameters of the ex ante economic replicability test, NRAs should ensure that the SMP operator is not put at a disadvantage vis-à-vis access seekers regarding the sharing of the investment risk."

Empirically it could also well be that the overall NGA business case will show overall negative profitability in any time perspective considered in an MST as long as average customer lifetime is the criterion for the allocation of the fixed investments and terminal values for the long term assets are not properly identified.

Telenor finds that legal certainty and predictability are key pillars in the telecom ex ante regulation.

If a SMP operator is required to meet a specific and detailed test this must be based on a competition analysis identifying a specific problem and a clear need for such a detailed requirement;

“Obligations imposed in accordance with this Article shall be based on the nature of the problem identified, proportionate and justified in the light of the objectives laid down in Article 8 of Directive 2002/21/EC (Framework Directive).” (Access Directive art 8 nr 4)

To be able to comply with SMP requirements, the requirements must follow clear and precise from the SMP decision. Hence, the MST principles proposed cannot be implemented with the Market 4 and 5 decision as its legal basis since the MST principles do not follow from the obligations imposed in the Market 4 and 5 decision.

It is fundamental to distinguish between imposing SMP *norms* and imposing obligations to *control* SMP norms. The normative obligation in Market 4 and 5 is the obligation to provide access in a non-discriminatory manner. The equivalent control mechanism to this non-discrimination norm is the accounting separation obligation. A positive result in the accounting separation means that the prohibition against price discrimination is complied with.

There is no legal basis for changing the norm by changing the control obligation. If Nkom is to change the norm from an obligation to provide access on non-discriminatory terms, to an obligation to provide access based on a detailed and strict MST based on the MST principles, Nkom must comply with the *procedures* for changing SMP-decisions which follows both from the Ecom Act chapter 9 as well as the EU regulation. In addition, the new decision must - to be valid - fulfil the material requirements in the Ecom Act Section 3-4 third paragraph, cf section 1-1, cf Access Directive art 8 nr 4.

The Memorandum has a link to the non-discrimination norm imposed on Telenor in Markets 4 and 5. In the decisions, Telenor finds high level guiding of the approach to control compliance through the accounting separation report and MST. The proposed assumptions and principles of the Memorandum illustrate a huge gap between the implementation approach described by Nkom (legal basis) and the advice of WIK.

The separation of compliance action from the process, to be treated in a separate forthcoming thus yet unknown decision by Nkom, provides little comfort.

NextGenTel in response to Telenor: NextGenTel remarks that Telenor uses the opportunity to present arguments against the regulation of fibre access on the ground of investment incentives. NextGenTel's understanding is that the regulation of such access is already decided, and is off-topic with respect to the current hearing. Hence, NextGenTel will not comment on this issue but instead refer to the argument presented by NextGenTel and other parties earlier in favour of such regulation.

However, at a general level, NextGenTel notices that Telenor seems to be concerned with its own investment incentives, and the role of predictability to facilitate such incentives. NextGenTel points out that predictability in terms of reduced risk for Telenor, in many cases, means increased risk and lack of predictability for Telenor's wholesale customers, such as NextGenTel.

Transferring risks from Telenor to Telenor's wholesale customers will discourage the investment incentives by Telenor's wholesale customers. NextGenTel point out that Telenor's investment in infrastructure under almost any variation of the MST, is safe relative to the risk faced by Telenor's wholesale customers. Hence, it seems that the marginal benefit from providing predictability for Telenor's wholesale customers exceed the resulting marginal cost imposed on Telenor.

Consequently, according to NextGenTel's view Telenor's arguments with respect to investment incentives are considered as imbalanced, and are likely to be contrary to overall investment incentives.

TDC's comments on Telenor's response: Telenor claims that there are "considerable deviations" between WIK Consult's ("WIK") report on proposed principles ("the Document") and the Commission's Recommendation and the BEREC Guidance (PAGE 4). The incumbent is particularly concerned with "the distinction between current (and future) NRA practice regarding margin squeeze testing of CGA services and the ERT specifically designed for NGA services."

TDC/Get disagrees with this statement. Quite to the contrary the Document is based on, and correctly reflects, the existing EU regulatory framework. This includes both the Commission Recommendation of non-discrimination obligations and cost methodologies ("Recommendation") as well as BEREC's Guidance on the regulatory accounting approach to the economic replicability test (2014).

With regards to the Economic Replicability test ("ERT") it is true that WIK does put forward a hypothetical "on average approach" as suggested by Telenor. Instead at certain points the Document outlines modified principles that reflect the specific characteristics of the Norwegian markets concerned. This is in line with the applicable framework as National Regulatory Authorities ("NRA") are indeed required to tailor

remedies so that they are based on the nature of the competition problem identified, i.e. on national circumstances. TDC/Get notes that authorities in other Member States such as UK and Ireland have followed the same approach when implementing the test.

Concerning Telenor's statement that suggested principles will damage the various player's incentive to invest, TDC/Get points out that the authorities have considered this issue on a number of occasions in the process leading up to the SMP decisions in Market 4 and 5. Nkom opted to impose an ERT based non-discrimination obligation instead of other remedies specifically to promote investments. According to the Recommendation direct price control on FTTX, a more intrusive remedy, is the preferred alternative unless the NRA can provide convincing evidence that an ERT is sufficient to alleviate concerns. Also, Telenor's incentives to invest were both considered and addressed by the Ministry of Transport and Communications' ("MTC") in the appeals decision concerning Market 4 and 5.

In the response Telenor holds that in order to safeguard alternative network operators' incentive to invest authorities need to change a number of key parameters, e.g. lower the WACC. All these modifications will result in higher wholesale prices. In essence the incumbent suggests that Nkom should allow the dominant operator to expose wholesale customers to as slim margins as possible in order to incentivize them to roll-out their own network. This is clearly not in line with the regulatory framework. Such an approach will neither stimulate roll-out nor promote competition.

Telenor has enclosed a report of Charles River Associates ("CRA") in order to "complement" the response (page 4). TDC/Get agrees that this document may be a useful contribution to understanding of how regulators may use ERT to promote investments and the roll-out of NGA networks. However, the report discusses possible future amendments and changes of the regulatory framework. Such de lege ferenda analyses, albeit interesting, are not relevant for Nkom's implementation of an operational test in Norway under the existing framework.

On page 6 Telenor argues that in order to enforce the non-discrimination obligation in Market 4 and 5 on the basis of the proposed ERT; Nkom will need to change the legal obligation and re-notify the obligation pursuant to the article 7 procedure (section 9-3 the ecom act). TDC/Get cannot see why Telenor highlights this as a possible issue. In the cover letter accompanying the Document Nkom already states:

"Maginskvistesten vil være gjenstand for nasjonal høring, samt notifikering til EFTA Surveillance Authority (ESA): I tillegg vil det bli fattet et eget vedtak knyttet til testen."

In conclusion TDC/Get finds that WIK's suggested principles reflect national circumstances. With the amendments set out in TDC/Get's response 9 March 2015 the suggested ERT should give all players correct incentives to invest while at the same time safeguarding existing competition.

WIK's assessment

Overall, the alternative providers, in one way or another, confirmed the proposed approach for the MST for fibre access in Markets 4 and 5 in Norway and found it correctly reflecting the existing EU framework and national circumstances. However, they also noted that a MST for the copper based retail market was necessary and asked for several compliance aspects like pre approval, a swift enforcement system and compensation measures in case a squeeze is observed.

First of all, we like to clarify that in this document the scope of the MSTs is limited to wholesale fibre access and not copper access as Nkom decided, in its decision of 20 January 2014 for Markets 4 and 5, that MSTs for fibre based networks will be developed, and not for copper based networks.

Regarding the compliance aspects of the test, Nkom is of the opinion that there is no basis for prior approval of retail products before launch at this point in time. Furthermore, according to the Electronic Communications Act, chapter § 10, Nkom has possibilities for sanctions if a margin squeeze is observed, so there is no need to design an additional principle. However, we do recommend Nkom to provide guidance on how Nkom will monitor compliance and, if necessary, intervene.

Telenor argued mainly that the proposed approach works contra productive on the infrastructure investments as the NGA investment risk of the network owner is not taken into account. In addition, Telenor noted discomfort of not knowing the specifics of possible compliance actions by Nkom in case a margin squeeze is observed.

WIK notes that Nkom has already considered the matter of investment risk for the NGA network owner in its decision of 20 January 2014 for Markets 4 and 5 and in its decision to set the WACC for all fixed line operators at 8,9%. The proposed principles are in line with these decisions and therefore, we do not see validity in Telenor's claim. As already noted above, we do see added value in providing more specifics about the possible compliance actions by Nkom.

Furthermore, some operators claimed that Telenor tends to offer access products that include more elements than they require, hence increasing costs for the mandatory wholesale services. This results in increased total costs which drive retail prices of the alternative operators above levels that end users are willing to pay. This issue has been addressed while designing the reference offers for the mandatory wholesale services and is not part of the principles for a MST for NGA services.

c. Main design principles of a margin squeeze test²¹

i. The level of efficiency – Principle 1

The principle according to the consultation document

Principle 1 (former)

An adjusted EEO concept by making adjustments for scale, alternative operator specific costs and other parameters will be applied.

Consultative input

Broadnet does not agree on the selected choice of level of efficiency of the reference operator. Broadnet finds that a MST should be based on a REO approach to ensure equivalence of output since Telenor is a dominant incumbent operator with a significant market share in the retail market for broadband services.

A REO based model would be the best way to adjust scale which is one of the most important elements in an ERT test. By using REO, the volume in the model will not be based on Telenor's volume and this will give a more effective approach for the alternative operators. Broadnet finds that no other operator than Telenor is able to achieve such economies of scale and an application of EEO based model would preserve Telenor's position as the MST thus will understate costs.

NextGenTel is concerned which costs to be applied in the test to ensure sufficient margin between wholesale and retail prices, as efficient competitors can offer similar services as Telenor in the retail market. NextGenTel can, due to its size and its specific business area, emerge as an effective and streamlined player compared to Telenor. This indicates that NextGenTel's and not Telenor's actual costs must be applied in the test.

TDC/Get agrees with WIK that a "pure" EEO test is not suitable in Market 4 and 5. The test must reflect the relevant income and cost structure of a representative alternative operator, e.g. a competitor of Telenor in the retail market buying the wholesale services in question.

TDC/Get agrees that the EEO input should be adjusted so that the relevant downstream costs are in line with WIK's recommendation, cf. page 6.

²¹ The principles in the blue boxes contain the original text as part of the consultation document.

In addition, TDC/Get recommends that Nkom performs a sanity check of the input provided by Telenor in line with the WIK's statements on page 6 of the document.

Telenor struggles to see how the efficiency standard advocated by WIK is an adjusted EEO, rather than REO if all the adjustments mentioned in paragraph 3.1 are to be made. Moreover, it is not correct to claim that proposing an adjusted EEO (or in reality a REO approach) is in line with the Commission's Recommendation. The Commission clearly recommends using an EEO approach, unless 1) "market entry and expansion has been frustrated in the past" or where 2) "objective conditions do not favor the acquisition of scale by alternative operators". Telenor finds neither criterion relevant for Norway. Therefore, Telenor is of the opinion that using adjusted EEO in the MST amounts to shielding inefficient players. At the same time, Telenor is facing competition from efficient players, which seems to dampen competition and reduce incentives for NGA investments.

Telenor would thus expect Nkom to apply an EEO approach with no adjustments. With the Recommendation clearly setting (unadjusted) EEO as the default efficiency measure, it is up to Nkom/WIK to justify any deviation from this standard in light of the criteria given in the Recommendation. Telenor does not think such justification can be provided, as fibre statistics indicate that alternative operators are very successful with respect to scale, which disprove any notion that "objective conditions do not favour the acquisition of scale by alternative operators".

Further, the magnitude and scale of fibre alternative operators also make it hard to claim "market entry and expansion has been frustrated in the past".

In addition, it is worth noting that Altibox has large scale advantages in that they provide services to approximately 62% of the fibre market. Including smaller companies that Get owns, it controls around 6% of the retail fibre market on top of its CATV market which can illustrate its scale with respect to the service provisioning.

Another issue not mentioned in the discussion of Principle 1 is the retail market share of Telenor compared to the players that will likely be interested in buying regulated wholesale fibre access. There will be both alternative operators/service providers that have scale comparable to Telenor (such as Viken, Lyse, Get and Altibox) as well as alternative operators that currently buy CGA (such as NextGenTel, TDC and Broadnet). This basic fact should alter perspectives on the need for adjustments of the EEO.

Finally, Telenor would welcome better explanation and justification for the adjustments mentioned. WIK states only

"..., an adjusted EEO test approach which covers adjustments for scale and enhancements by competitors specific cost not incurred by the access provider, will be

applied. In addition, an assessment of reasonable efficiency is done for the input parameters based on information provided by Telenor and the alternative operators”

To sum up it is difficult to see why this “adjusted EEO approach”, if all adjustments discussed in the Memorandum are actually introduced, is not termed an REO approach. This would in Telenor’s opinion be a more honest labelling according to the rest of the Memorandum and also in line with WIK’s work done for ILR (i.e. Luxembourg in 2013) referred to in the References section.

NextGenTel comments on Telenor’s response: Telenor argues that a MST based on Equally Efficient Competitor (EEC) modified to take into account alternative operator’s costs is a Reasonably Efficient Competitor Test (REC). According to Telenor, this is contrary to the purpose of the regulation. Telenor argue that a pure EEC test should be applied.

NextGenTel disagrees with Telenor's opinion on this matter. NextGenTel will points out that procedural efficiency is an additional argument for alternative operator specific costs to be used as a benchmark. The reason is that while Telenor has an incentive and opportunity to conceal and understate costs. Alternative operators have neither the incentives nor the opportunities to conceal costs. An alternative operator has an incentive to provide Nkom with necessary cost data to perform an MST. The relative more simple and limited operations associated with alternative operator’s reduces any opportunity to conceal or manipulate cost elements.

Consequently, even if one would agree that EEO is the correct benchmark for assessing MST, by using alternative operator’s cost as relevant benchmark, subject to the possibility of rebuttal by Telenor, one would create an enforcement system that provides Telenor with an incentive to credible present its real costs.

TDC’s comments on Telenor’s response: TDC points out that WIK recommends the use of an “adjusted” not a “pure” EEO concept. This would mirror the fact that Telenor holds considerable market power in the overall market. The incumbent is at the same time a significant player in the FTTx segment.

WIK’s assessment of comments regarding principle 1 (former)

Broadnet and NextGenTel argued for the use of REO as even an adjusted EEO approach would understate the effect Telenor’s scale has on lowering the costs. In addition, NextGenTel argued that its own organization was a good example of a smaller efficient competitor, which costs should be used. TDC/Get agreed to use adjusted EEO and supported the idea of validating Telenor’s EEO input.

Telenor argued that the proposed adjusted EEO amounts to REO. We do not agree as

the basis for adjusted EEO is still Telenor's data set and not the data of the alternative operators as by REO. Furthermore, Telenor noted that the two criteria from the Recommendation for adjusting the EEO data set were not justified for the Norwegian market.

According to the Recommendation the following circumstances allow adjustments to the EEO:

- When market entry or expansion has been frustrated in the past or;
- A market where low volumes of lines and their significantly limited geographic reach as compared to the SMP operator's NGA network indicate that the objective economic conditions do not favor the acquisition of scale by alternative operators.

Nkom's decision for Market 4 and 5 of 20 January 2014, demonstrate that Telenor has significant market power in the relevant markets and therefore is mandated to offer fibre wholesale access to enable market entry or further expansion by competitors..

A pure EEO approach as proposed by Telenor would lead to a situation, whereby fibre wholesale services are mandated, however alternative operator would not be able to recoup parts of their costs like co-location. In addition, adjustments to the EEO data, where large efficiency effects are observed due to Telenor's size could not be corrected by Nkom to fit a smaller, although efficient, competitor.

In the Norwegian circumstances, there are observed co-location charges and there are observed scale advantages of Telenor compared to smaller, although efficient competitors. Therefore, applying pure EEO would not allow a competitor to profitably enter the market based on the mandated fibre access.

In a situation where it seems obvious that market entry would not occur, Nkom should not wait to observe market frustration in order to use the adjusted EEO approach. To avoid first-mover advantages a proactive approach seems to be reasonable from a regulatory economic point of view. Otherwise, first mover advantages can be generated by the SMP operator which in the extreme lead to market foreclosure.

Thus, an adjusted EEO test approach, which covers adjustments for scale and enhancements by competitor specific costs not incurred by the access provider, will be applied. In addition, an assessment of reasonable efficiency is done for the input parameters based on information provided by Telenor and other alternative operators.

Telenor also asked for more specifics regarding the adjustments. However, this document is about choosing the right principles which enable Nkom to make the required adjustments. Specific details about adjustments to the data set used to populate the model come later in the process.

- ii. The business model (wholesale products / retail services / aggregation level / geographical footprint, the relevant market share) – Principle 2 (former)

The principle according to the consultation document

Principle 2 (former)

Two separate MSTs will be conducted:

- Retail broadband internet access + voice service + IPTV (triple-play) based on Fibre VULA (p2mp/GPON) (portfolio test) and
- Retail broadband internet access + voice services (double play) based on Fibre LLU (p2p) (portfolio test).

Aggregation level: The retail customer segments in both cases comprise all customers who demand the residential marketed products, including the standardised business products. A total fibre portfolio approach is applied, which assesses the entire portfolio of flagship products (incl. bundles (2-play or 3-play) and standalone offers).

The geographical footprint is national, i.e. the geographical footprint of the availability of the regulated wholesale services.

The subscriber numbers of an efficient alternative operator used in the MST should be equal to (forecasted) homes-connected for which the fibre-based wholesale access service is made available to alternative operators by Telenor x 0.20. The forecasted roll-out of Telenor is considered for the relevant time period in the test.

Consultative input

Broadnet agrees that each business model should be tested for each wholesale service separately. However, Broadnet finds that with regards to retail services, Nkom must also test an unbundled pure broadband (single play) offer in addition to double, and triple play offers. If only double and triple play would be tested there is a risk that the model allows Telenor to large flexibility to weighting different cost components in a way that allows for cross-subsidization.

Broadnet remarks that the suggested business model only reflects an operator that operates in the residential market and in the lower parts of the business market. Broadnet also operates in the mid and high end of the business market. Neither SMB nor professional customers currently require or buy IPTV services. The suggested test will not identify margin squeeze in this market as revenues from TV will subsidize broadband services.

To address the business market (mid and higher part of the segment) Broadnet suggests that Nkom carries out a benchmark on defined contracts that Telenor have won recently. The test must require Telenor's verity that alternative network owners such as Broadnet are able to replicate the retail price that Telenor offers to the defined business customers with profitability.

Broadnet agrees that market should be national.

NextGenTel is concerned that the test is organized on a too high aggregation level, for having any practical significance. For example, with reference to Principle 2, 3 and 4 , NextGenTel is concerned that single products are ignored with reference to the test being fulfilled for the "flagship products". Such a way to test can make it difficult to introduce new and innovative products that deviate from the "selected" products in test. Ultimately, Telenor, with such an arrangement, could legally margin squeeze on new innovative products introduced by competitors. This will not only seem restrictive in itself, but also reduce innovation incentives.

TDC/Get agrees that the market should be national.

WIK states that the test should reflect the operations of a representative alternative network operator in the retail market (page 6). TDC/Get fully agrees with this approach. If the Authority tests offerings that are not relevant for Telenor's competitors, Nkom could incorrectly assume that wholesale customers are not in a margin squeeze even though they are not able to replicate "the non-tested offers". Also, such an approach would allow Telenor to rapidly put into place a new margin squeeze through aggressive marketing of products that are not covered by the test.

The market shares should also be calculated separately for providers operating in business and residential markets (current principle only based on "homes connected").

TDC operates in the business market. Neither SMB nor professional customers require or buy IPTV services. TDC/Get would like to point out that the business model put forward by WIK (double and triple play including TV services) is not fully representative for the total market they are operating in.

The suggested business model only reflects an operator that operates in the residential market. In addition to the two double and triple play tests TDC/Get therefore find it of great importance that an unbundled pure fibre *offer* "single fibre" is included as a separate test in order to detect margin squeeze in the business market/segments.

In order to address the existing competition problems in the business marked TDC/Get are convinced that Nkom also must include a benchmark test reflecting the higher part of the business segment. Based on their experience in Market 15 the best way to do this is to perform a benchmark test for recent and selected cases in this segment.

If extra tests are not included in the model, the consequence is that Nkom not will be able to detect discriminatory behavior in the form of margin squeeze.

Telenor agrees that an MST has to be specified and should be conducted for the relevant business models and that the business models on which to apply the test has to be determined first.

WIK claims that each business model should be based on a particular wholesale product (and not a combination of products) and that a MST has to be conducted in reference to the individual mandatory wholesale access products in Market 4 and Market 5.

Telenor accepts that obligations imposed on them in different markets may be a relevant practical – but not prohibitive – constraint for testing an efficient mix of inputs, but apart from that, they cannot see the justification for WIK’s position on this issue.

Fibre based wholesale products

WIK refers to the mandatory wholesale services that must be provided by Telenor and concludes that both Fibre VULA and Fibre LLU must be included in the “MST tool”.

Telenor recalls that the Recommendation is emphasising the assessment of the most relevant regulated input as the relevant upstream input in the ERT test.

Since Nkom already has the accounting separation tool available for the control in place, Telenor thinks that it is not proportionate to also develop a strict and wide-ranging MST in market 4 based upon the current and forecasted volume of Fibre LLU accesses in Telenor’s network.

Retail services

Telenor concurs with WIK’s description of market realities and the business case assessments regarding the relevance of the different retail services offered.

Telenor also agrees that the relevant business model is the provision of a fibre based triple play product. However, they find that this should apply to both a Fibre VULA and Fibre LLU situation.

WIK’s justification for not including the TV service in the retail offering based on Fibre LLU is not well-founded. The argument presented is that the technical investment needed by alternative operators to deliver TV will not be done since the P2P network is only a transitory state and will be migrated to a PON network.

There are two misconceptions to be corrected in this case. First, if the alternative operators already have the TV distribution platform available, the investments mentioned in the Fibre LLU model are exaggerated. The MPOP equipment mentioned

is not Fibre LLU specific. As an example NextGenTel provides TV over VDSL (based on copper LLU or wholesale DSL) and all fibre and CATV operators already have their own TV-platform. Second, the population of available Fibre LLU in Telenor network is likely to be relatively stable and no network migration to PON is planned (except in the hypothetical case of new acquisitions).

The relevant question on Fibre LLU viability is, however, not discussed. With less than 2000 customers to be targeted in the foreseeable future – all customers with a TV service already delivered from Telenor (CDK) today, in several small locations across the country – can a business model without TV service be a viable/competitive offer? Telenor does not understand why WIK defines the relevant business model for Fibre LLU to be the double play product proposed (internet access and voice service offer) – and how this can be a competitive offer in the market.

On the more practical side, Telenor notes that flagship products are the same for both tests proposed – how can then the TV service be excluded in one test and not the other? Telenor is concerned that the adjustments of both revenue and cost will be very arbitrary.

Aggregation level

Telenor agrees that Nkom should determine and specify the level of aggregation based on Norwegian market realities. Telenor still wonder what is the foundation for WIK's conclusion regarding "the most dominant principle" for defining the appropriate level according to WIK terminology:

" ... the aggregation level should cover the most important fibre-based retail services that an efficient alternative operator is expected to provide based on the regulatory wholesale product it uses. The MST should ensure that such an efficient alternative operator can operate profitably."

As Telenor sees it this is a misguided principle for determining the aggregation level if the efficiency standard deviates from an EEO approach. That said the proposal to define flagship products as a group (portfolio) and weighting of individual segments according to subscribers numbers seems reasonable.

Telenor strongly disapproves a design criterion for the aggregation level with a pre-defined purpose of the test to ensure that alternative operators can "*provide a complete set of most relevant fibre based retail services to all customer segments while earning a reasonable profit*".

Telenor thus agree that the arena of competition will be for portfolios of bundles and reminds WIK that there is no economically non-arbitrary way to allocate bundle discounts among the various bundle components in order to test the NGA broadband

service on its own when sold within a bundle. Any such test is prone to produce unreliable results.

Telenor has no comment on the national footprint of the analysis.

Telenor understands the formula to establish the scale needed to be efficient as an alternative operator buying wholesale fibre products from Telenor, and that this operational size will be used in the MSTs. Telenor believes this approach is virtually equivalent to an REO test. The formula presented assumes Telenor's fibre access network as the relevant 'fibre universe' in Norway and concludes that 20% of this is needed to gain efficiency. Telenor reminds WIK/Nkom of the basic fact that some of the alternative operators already have a fibre subscriber base equivalent to Telenor's and it is conceivable that even Telenor's scale is not yet efficient.

NextGenTel comments on Telenor's: NextGenTel addressed Telenor's comment regarding the Market Share to be used in the MST. Telenor seems to have a unilateral focus on technology in addressing the efficient market share. NextGenTel would like to point out that different suppliers may have different efficient scales depending on technological, operational and business strategies and models.

This means that other suppliers may be efficient with a lower market share than Telenor. NextGenTel support the WIK report's choice of market share, or an even lower market share. This will contribute to efficient competition among efficient supplier subject to different technological and operational constraints.

WIK's assessment of comments regarding principle 2 (former)

All respondents agree with the national geographic footprint of the business model i.e. the geographical footprint of the availability of the regulated wholesale services; for Fibre VULA, Telenor's fibre GPON network and for Fibre LLU, the geographical footprint is reflected by Telenor's P2P fibre network.

Also the way in which the flagship retail products are determined and weighted in the portfolio has not been commented.

The portfolio testing of flagship retail products separate for Fibre VULA and Fibre LLU, as these are considered different business models, was only commented on by Telenor as they could imagine an efficient mix of VULA and LLU and missed further justification. Furthermore, Telenor did not see Fibre LLU as a relevant wholesale service due to the fact that Nkom has already accounting separation available as control mechanism.

We want to clarify that our underlying assumption to distinguish VULA and LLU as two

different business model, is based on the 'ladder of investment principle'; which describes the general practice that alternative operators start competing using those wholesale services which require less investment in their own network (such as VULA) and then after a certain period of commercial success 'climb the ladder' by using a wholesale service like LLU, which requires further investments in their own network. The fact that we did not receive comments from the alternative operators in Norway confirms this general assumption.

In respect to the relevance of the wholesale service Fibre LLU, we note that Nkom has decided that Fibre LLU is relevant and that Telenor is required to offer Fibre LLU at non-discriminatory conditions and that a MST is the appropriate control mechanism.

All of the alternative operators, did comment in one way or another on the presumed absence of testing of the single play (broadband) product. It has always been our intention to include single play offers in the process of identifying flagship products. So to avoid any misunderstanding, we have clarified the text in the principle document to clearly reflect that single play products are included in the test.

Furthermore, Broadnet and TDC/Get noted that the main focus is on residential market and therefore potential margin squeeze cannot be identified in the mid/high end business segment. In addition, both remarked that business users do not buy IPTV in general and therefore a squeeze is also identified later as IPTV subsidizes other services. Both proposed as a solution that Nkom benchmarks the recent offers, Telenor has won in the mid/high end of the business market in a similar manner as is done for Market 15. TDC/Get in addition argued that there could be a separate test for the residential and the business market.

We have chosen for the MST to focus on the standardized residential and standardized business retail products as large business deals are often bespoke offers (packaged with other information technology communication services such as software packages, other connectivity services, storage, security, networking solutions and support services) and therefore difficult to test in a model.

The non-discrimination terms, conditions and charges for VULA and LLU obligations will continue to apply to Telenor's large business deals. If Nkom were to observe behaviour in relation to large business deals, which raised concerns (or indeed any other pricing concerns), Nkom should consider intervention on the basis of this condition.

Telenor argued that IPTV should be included for retail bundles based on Fibre LLU as well. Telenor found the argument presented to exclude IPTV (technical investment needed by alternative operators to deliver TV will not be done since the P2P network is only a transitory state and will be migrated to a PON network) to be based on two

misconceptions:

- Additional investments per MPOP to enable IPTV for Fibre LLU are exaggerated as most alternative operators already have their TV distribution platform available either for VDSL, cable or fibre;
- Subscribers connected by Telenor's P2P fibre network are not migrated to GPON, and actually form a stable base of around 2000 customers.

As already stated, the inclusion of IPTV for LLU, would require additional IPTV equipment at the MPOP and most likely as well additional capacity in the aggregation links. Irrespective of the situation that some alternative providers already have IPTV equipment installed at Telenor's MDF sites or sites within their own network, to reach Telenor's P2P connected customers, additional IPTV equipment will need to be installed at the respective Telenor MPOP. Therefore the costs for the additional IPTV equipment needs to be considered in the business case for the modelled hypothetical operator.

As confirmed by Telenor, the limited number of foreseen subscribers for the alternative operator (400 at a maximum, based on 20% marketshare of 2000), still makes the provisioning of IPTV not a realistic business case. Thus, we consider as a second relevant business model the provision of a fibre-based double play product (broadband internet access and voice services) based on Fibre LLU.

- iii. Relevant retail products (e.g. flagship products) and prices (incl. promotions and temporary discounts) – Principle 3 (former)

The principle according to the consultation document

Principle 3 (former)

In line with the Recommendation only 'flagship products' are considered. Flagship product can be a standalone or a bundled product based on broadband access.

As the basic reference, 'flagship products' will be determined as follows: Flagship products comprises those tariffs with the highest revenue which cover 70 % of the revenue within the relevant 12 months term before the MST is conducted. In addition, products with a market share of 10 % either with respect to subscriber numbers or revenue within this time frame will be included in the MST.

However, in case of substantial changes of retail tariffs, Nkom may deviate from this way of determining the relevant retail 'flagship products'. With a future perspective it might consider new launched retail tariffs as 'flagship products'. In such a case the weights of the individual "flagship products" as part of the portfolio will be determined with a future perspective.

Consultative input

Broadnet identifies only a few flagship products from their data input since Broadnet do not offer IPTV services. Broadnet questions the robustness of the model when it is based on so few flagship products.

Broadnet also finds that it is not clearly defined when a product is designated as a flagship product. Broadnet asks Nkom to specify the criteria for a product to be designated as a flagship product, and that this must be done as clearly as possible and at the latest before the product is launched on the market. If not, there will be a lack of efficiency if Telenor can spend months on avoiding an ERT test just by not defining it as a flagship product.

TDC/Get agrees with WIK's suggested approach as long as the "flagship products" in question also reflect Telenor's product offering in the business markets (e.g. not only double and triple play offers including TV). However, WIK does not clearly define at which point in time a product is designated as a flagship product. In order to ensure predictability for both the incumbent and the alternative providers a product should be designated as a flagship product as early as possible, and in any case no later than 3 months before commercial launch of the product in question.

Telenor finds that using the criteria above, the determination of flagship products becomes very complex and the list of products very long. The basic reference to flagship products comprises 70% of revenue and in addition products with a market share of 10% either with respect to subscriber numbers or revenue in 12 month term before conduction of the MST. This could in Telenor opinion be simplified and still be well targeted towards the “arena of competition” over which entry and exit decisions are made. Performing the test over fewer products also reduces the cost of regulation.

As described by WIK, in the retail market competition typically occurs for bundles of services rather than for broadband as a service on its own. This means that the relevant “arena of competition” will be for portfolios of bundles, rather than fibre based broadband services on their own. Fibre based broadband will be just one component of the bundles in which it is sold. This will also apply for vertically integrated alternative operators and access seekers sourcing the inputs to provide the bundles needed. Telenor thus notes that any testing of individual products or contracts is likely to be excessive and unnecessary and preclude legitimate pricing strategies. CRA provides the following economic rationale for this perspective:

“Indeed, there is no economically non-arbitrary way to allocate bundle discounts among the various bundle components in order to test the NGA broadband service on its own when sold within a bundle. Any such test is prone to produce unreliable results.”

When testing bundles that are technically replicable by competitors, all of the incremental revenues and cost should be included in the test.

A more practical challenge related to the approach is the mismatch with the retail scope of the flagship products to be defined and the available wholesale scope of the wholesale inputs.

Finally, Telenor will remind WIK and also Nkom that in order to allow the regulated operator to secure compliance and to provide legal predictability it must be a prerequisite that when changing the flagship products on its own discretion any following MST needs to be forward looking only.

WIK's assessment of comments regarding principle 3 (former)

Broadnet remarked that standalone retail offers were not included and found the flagship specification not clear. Therefore, asked Nkom to further specify this and at least latest at commercial launch of a product.

As we clarified under principle 2, standalone retail offers are also considered in the process of identifying flagship products, hence also broadband products without IPTV from Telenor are considered. In respect to the specification of flagship retail products, we have added following description below;

Every 6 months, Nkom will collect subscription and related revenue data from Telenor for their residential and standard business retail offers. Based on this data, the tariff subscriptions (might be single, double- or triple-play products) are ranked at revenue. In a first round, the highest retail offers will be selected which have generated cumulatively 70% of Telenor's revenue. Secondly, those retail offers are added, which generated a revenue of at least 10 % or have at least 10 % of the subscribers. All of these retail offers are labelled as flagship product and tested. In addition, Nkom may pro-actively decide to label a new retail offer of Telenor as flagship product when it foresees that it will have a significant impact on the retail market. The latter scenario could take place at the 6 month test or at any time found appropriate by Nkom in line with trigger 3 described in principle 11.

TDC/Get agreed with the method for determining flagship products as long as Telenor's retail offers in the business market are included. Furthermore, TDC/Get voiced that it was unclear at what point in time a retail product is identified as flagship product.

We confirm that business customers using standardized business products or residential products are included, however most likely the mid and high end business customers are not included as described earlier. In respect to the timing of flagship identification, we refer to the above detailed description.

Telenor noted that the focus should be on testing of bundled retail offers only as testing of single retail offers is most likely excessive and that bundle discounts are difficult to allocate to individual products in the bundle.

As clarified under principle 2, standalone and bundled retail offers are considered in the process of determining flagship ship products, hence the same applies for testing. Furthermore, information provided by Telenor shows that the number of retail fibre tariffs offered by Telenor in Norway is quite limited. Thus, we do not agree that testing single retail offers is most likely excessive as the administrative burden for Telenor to provide the (available) information is reasonable. Telenor's remark in respect to bundle discounts apply to the individual retail products in a specific tariff offer, however have

no link with retail tariff offers consisting out of one retail product, which is identified as flagship.

iv. Retail price components – Principle 4

The principle according to the consultation document

Principle 4 (former)

All price elements of the flagship product(s) of the SMP operator for which the test is being conducted form the basis of the relevant revenues. All relevant service revenues have to be considered including recurring and non-recurring price elements.

If retail (list) prices are discounted permanently or are temporarily reduced in the form of promotions, such discounts or price reductions will be taken into consideration to calculate relevant revenues.

Nkom will in advance define user profiles needed to determine relevant revenues. Such parameters will be based not only on profiles provided by Telenor but also by alternative operators.

Consultative input

Broadnet agrees with Nkom's suggested approach and would like to underline the importance of calculating all relevant discounts, especially in the business market where a contract is negotiated and rebates one of the central elements in the process to win customers.

TDC/Get agrees with WIK's suggested approach to retail price components. In this context TDC/Get stresses the importance of taking all relevant discounts into account. Time-limited rebates are a key concern in the retail market as well as the SMB segment in the business market where subscriptions tend to be standardized.

Further, large business account customers rarely pay the listed prices. Permanent rebates are common. Telenor regularly offer large corporate accounts market various forms of rebates and remunerations. This is the price level alternative network operators have to compete with in order to win the customer.

TDC/Get does not have detailed information on what types of discounts Telenor *offer* large corporate accounts as this information is business sensitive. Nkom is however in a

position to request the necessary input from Telenor (for instance relating to the 10 largest customers) and update the model accordingly.

Nkom's accounting separation model has historically not been capable of identifying such practices. This is partly due to the fact that the Authority has decided to use average cost and revenue data for a 6 months period. This approach makes it possible for Telenor to effectively cut prices during the reporting period and recoup losses through higher prices at a later stage but still demonstrate profitability overall.

If Telenor for example in January launches an *offer* on speed X offering the customers the product for free in January and February, launches a (parallel) *offer* on speed Y in March and April, makes another *offer* on speed Z in May and June and so on, Telenor will be able to continually exclude the competitors in relation to attracting new customers.

This type of predation will however not be caught by the model if Telenor ensures that the total of the group of flagship products in question are profitable over a 6 month period. Thus Telenor will be able to use the fact that Telenor has a large (stable) base of customers with high revenue to subsidize its temporary discounts. An alternative operator with a smaller customer base would not be able to meet the competition from the incumbent on a level playing field.

Telenor supports the principle. However, they do not agree with the proposed approach for user profiles. This approach will not secure consistency, as Telenor's flagship products can be mixed with user profiles of other players. Telenor cannot see that a justification for such an approach has been provided.

NextGenTel comments on Telenor's response: Telenor seems to disagree with the WIK report in basing user profiles for the MST test on parameters not only on profiles provided by Telenor, but also on the user profiles of alternative operator's customers. NextGenTel disagrees with Telenor's position. If the MST should have any realistic opportunities in detecting and deterring margin squeeze harmful to competition and ultimately consumers,

NextGenTel finds it paramount to base the test on a realistic measurement of the actual competition in the markets. This means that the actual user profiles of alternative operators' customers should be taken into account in the MST.

WIK's assessment of the comments regarding principle 4

There is a general agreement on the suggested approach that all price elements of the flagship product(s) of the SMP operator for which the test is being conducted, form the basis of the relevant revenues. All relevant service revenues have to be considered including recurring and non-recurring price elements.

WIK again likes to confirm that all relevant discounts or price reductions should be taken into account as well (including those for a limited amount of time).

Regarding user profiles, Telenor argues that to secure consistency in reference to Telenor's flagship products user profiles of other players cannot be mixed with user profiles of Telenor. We agree that user profiles are specific in reference to a specific tariff structure, however alternative operators may offer the same or highly similar tariff structures. Thus, even though the user profiles provided by Telenor are the starting point, reconsiderations might be reasonable to determine average user profiles for a representative (larger) retail customer sample.

- v. The relevant time period and methodology for running the test (period-by-period, Discounted Cash Flow (DCF) or Steady State) – Principle 5

The principle according to the consultation document

Principle 5 (former)

A steady-state approach with following characteristics will be used to conduct the MST:

- It discounts/annualizes one-time costs and revenues.
- A steady-state approach is highly transparent and practical.
- Is conducted periodically appropriately taking into account market developments. It allows Nkom to adjust subscriber numbers, price changes etc. according to real market data instead of basing a calculation on uncertain forecasts.

Consultative input

Broadnet supports Nkom's approach and would like to stress the importance of making the test able to detect temporary marketing of discounts initiated towards the end of one year lasting into the next year.

TDC/Get agrees with WIK 's suggested approach to the relevant methodology for running the test

Telenor disagrees that a steady-state approach is appropriate for the MST. In Telenor's opinion a DCF approach is more appropriate.

The proposed annualisation of one-time costs allocates these uniformly across time, irrespective of revenue streams, which may vary over time according to demand and pricing strategies. Pricing strategies that are both legitimate and replicable and thus fully aligned with the Recommendation, such as penetrative pricing may fail a MST based on the proposed steady-state approach in some years even if the product is DCF positive over a customer life.

A DCF approach is less sensitive to the timing of costs and revenues within a customer life, and is thus more prudent to determine margin squeeze.

Furthermore, it is worth noting that the benefits of some investments last longer than one average customer life, and recovery of these should be accounted for with a terminal value of these investments in a DCF analysis, or in the case of a steady-state approach, longer amortisation periods.

NextGenTel comments on Telenor's response: With respect to the timeframe for the MST, Telenor argue for a Discounted Cash Flow (DCF) test rather than the proposed steady state test. NextGenTel strongly opposes the DCF test suggested by Telenor. Firstly, a DCF test may, dependent on how it is constructed leave substantial discretion to Telenor in shaping the outcome of the test, leaving Telenor's wholesale customers with a corresponding uncertainty.

Furthermore, NextGentel points out that a DCF may fail to detect a margin squeeze. If Telenor's cash flow includes a "margin squeeze period" and a corresponding recoupment period, the test will fail to detect margin squeeze as there is no margin squeeze according to the test.

NextGenTel's position is that the relevant time period used for assessing MST as far as possible should reflect the problem associated with a margin squeeze, which is depriving consumers from the benefits of competition by making impossible to profitable compete for consumers on the merits. Hence, NextGenTel finds that steady-state approach based on average user life time is likely to perform better than the DCF approach suggested by Telenor.

WIK's assessment of the comments regarding principle 5

Broadnet, TDC/Get and NextGenTel support the proposed approach in regards to a Steady State Model.

Telenor disagrees with proposed Steady State Model approach and argued for a DCF model as certain legitimate pricing strategies might lead to a squeeze in a steady state model, a DCF model is less sensitive for the timing of costs and that certain investments lasts longer than the customer lifetime.

WIK does not agree with Telenor that the DCF approach is better suited than the steady-state approach to conduct an ERT. It is hard to base a DCF model on reliable and robust input data since the actual future market developments face high uncertainty.

However, a steady-state approach conducted every 6 month in line with the collected market data covers the dynamics of the market as it allows Nkom to adjust subscriber numbers, price changes etc. according to real market data instead of basing a calculation on uncertain forecasts. Furthermore, a steady state model captures the investment cycles via annualisation of costs over the depreciation period appropriately and the revenues and annualized wholesale costs over the customer life time.

vi. Reference time – Principle 6

The principle according to the consultation document

Principle 6 (former)

The adequate reference time period for the multi-period analysis of the MST in form of a steady-state analysis will be set in accordance with the estimated average customer lifetime for the fibre-based retail services.

As long as there is no empirical evidence on fibre-based services, the average customer lifetime for copper-based broadband services will be used as an approximation for the fibre-based broadband customer life-time.

Consultative input

Broadnet supports the proposed approach. However, Broadnet underlines the importance of using estimated customer average lifetime other than Telenor. Broadnet

states that Telenor has traditionally a longer customer lifetime than alternative operators.

TDC/Get agrees with WIK's suggested approach to the reference time but points out that the average life time of Telenor's customers is normally longer than what is the case for the customers of alternative network operators. Nkom should take this into account and adjust the input if required.

Telenor does not find it appropriate to use average customer lifetime for copper-based broadband services as an approximation for the fibre-based broadband customer lifetime. Even without observations, it appears highly likely that fibre lifetimes are longer than copper life-times, as copper customers have the option to upgrade to fibre, whereas fibre customers are already at the most modern technology and cannot upgrade. Thus Telenor expect fibre lifetimes to be longer, and to not account for this in the MST will make the test inappropriately stringent, and failing in the objective to promote investment.

Furthermore, the empirical data available corroborate Telenor's stance on this. Registered public accountant controlled estimates for customer life times for financial purposes (IFRS) shows that average customer lifetime for Telenor residential fibre customers is significantly longer than for Telenor DSL customers.

WIK's assessment of comments regarding principle 6

Broadnet and TDC/Get agreed with the proposed approach, however noted that the customer average lifetime of alternative operator is considerably lower than Telenor's.

Telenor stated that it is highly likely that customer life-time for fibre is longer than for copper, as copper customers have the option to upgrade to fibre, where fibre customers are already at the most modern technology and cannot upgrade.

Since we don't have any reliable data on this issue, we recommend to stick to the proposed approach and consider to use customer life-time for copper as long as no reliable data for customer lifetime for the fibre-based retail services are available/provided.

- vii. The relevant cost standard (LRIC+ or FDC, current or historical costs) – Principle 7

The principle according to the consultation document

Principle 7 (former)

The LRIC+ cost standard to be used to determine downstream costs where available relying on bottom up or top down data from the SMP operator. Where LRIC data is not available (e.g. for retail costs), FDC to be used.

Consultative input

Broadnet agrees with Nkom's approach on using LRIC+ as the relevant cost standard.

TDC/Get agrees that this should be the relevant standard for calculating retail costs under the condition that Nkom's LRIC+ model is designed in accordance with the Commission and BEREC recommendations.

Telenor acknowledges that the Commission's guidance in the Recommendation is a LRIC+ approach, as correctly stated by WIK, but they disagree that the LRIC+ standard is the most suitable cost standard to determine downstream costs in the MST for the Norwegian fibre market. As set out in more detail in the CRA report, Telenor sees the purpose of the Recommendation on the margin squeeze regime to be based on *promotion of efficient investment in NGA infrastructure* by affording NGA investors pricing flexibility while simultaneously *safeguarding the degree of competition that already exists*.

Thus, the aim of the MST should be preserving the viability of existing competition rather than promoting new entry. This means avoidable costs or incremental costs without common costs are the most appropriate cost measures, as these are sufficient to safeguard existing competition, while at the same time provide maximum pricing flexibility to access providers, and thus also investment incentives.

NextGenTel comments on Telenor's response: Telenor argues against the application of LRIC+ as suggested in the WIK Report and Commission's guidance. Telenor argues that common costs should not be included in the test by instead applying an avoidable cost or incremental costs standard not including common costs.

NextGenTel disagrees with Telenor's position. Telenor, due to its size and scope, has larger possibilities than other market participants to recover common costs from other services. Telenor may find it profitable to operate with prices not covering common cost

in the relevant product markets for a time frame sufficient to drive competitors out of the market.

NextGenTel opinion is that the LRIC+, or ideally a fully distributed cost standard, should be applied in the MST.

WIK's assessment of comments regarding principle 7

Broadnet and TDC/Get agreed with the proposed LRIC+ cost standard.

Telenor disagrees by interpreting the purpose of the EC Recommendation as having a focus on safeguarding the existing competition in the market instead of allowing new entry. Hence, it argued that avoidable costs or incremental costs without common costs are sufficient for this purpose.

We do not agree. According to the EC Recommendation and BEREC, LRIC+ is clearly the proposed cost standard. To ensure recovery of cost it is essential that also common costs are considered and taken into account. Where LRIC+ data is not available (e.g. for retail costs), FDC should be used.

viii. The reasonable profit – Principle 8

The principle according to the consultation document

Principle 8 (former)

An alternative operator should be able to earn a reasonable rate of profit. The WACC reflects the risk of the retail business of an alternative operator. Nkom has determined a reasonable WACC of 8.9 % for a reference operator in the Norwegian fibre based fixed line market.

Consultative input

Broadnet finds that the use of WACC is appropriate in this model.

TDC/Get agrees with WIK that the model must ensure that an alternative network operator is in a position to earn a reasonable rate of profit. WACC reflects the risk of a retail business for Telenor 's competitors. WIK 's suggested approach is in line with inter alia the Commission recommendation and competition law principles.

Lyse and Viken asks how the term reasonable profit should be understood in relation to ongoing fibre deployment and investment risk in fibre access projects compared with access to an already existing nationwide copper access network?

As WIK refers to in point 3.6 "The reasonable profit", the recommendations from the European Commission contain no clear guidelines as to how reasonable profit should be understood. Despite this, no alternative approaches to the profit and margin terms are discussed in the note, and without more detailed consideration WIK assumes that fixed line WACC is the only factor that should be considered when the investment risk is evaluated in a margin squeeze test for fibre access. As far as Lyse and Viken are concerned, this approach assumes that the risk of investing in copper access (established nationwide network) and fibre access (network under deployment) is the same. We believe that this assumption is incorrect and that it should be discussed in more detail before becoming a central premise in a margin squeeze test for fibre access.

According to the note "Kapitalkostnad for norsk telekom fastlinjevirksomhet" which WIK refers to in its principles, the start-up costs for a new business should be taken into account by including an additional sum for other costs (in addition to WACC). Based on this, Lyse and Viken would like an evaluation of how the large startup costs per customer and per deployment area, in the form of the establishing of new access infrastructure (digging, engineering, fibre deployment), are reflected in the margin squeeze test for fibre access. These are investment costs which have not been relevant to include in the corresponding margin squeeze models in Market 4 and 5 for copper access because there already existed a nationwide copper access network when price/margin regulation for copper access was introduced.

Telenor points out that differently from WIK, the Recommendation does not provide any reference on how big the margin should be. This is not an omission, but a choice made by the Commission that is coherent with the objective of the Recommendation of promoting efficient investment. In order to do so, the Commission finds it convenient to leave some degree of freedom in setting prices to the operators. In particular, the Recommendation says:

"[d]ue to current demand uncertainty regarding the provision of very-high speed broadband services it is important in order to promote efficient investment and innovation, in accordance with Article 8(5)(d) of Directive 2002/21/EC, to allow those operators investing in NGA networks a certain degree of pricing flexibility to test price points and conduct appropriate penetration pricing."

Moreover, the WACC of 8.9% has been used as a maximum allowed return on capital for instance in determining termination fees based upon a certain cost model. Coherently with the logic of the Economic Replicability Test, one should instead

determine the lowest allowed return on capital. Hence, a lower reference point should be used.

NextGenTel comments on Telenor's response: The WIK Report suggests that a WACC of 8.9 percent is a reasonable standard in assessing the profitability of an alternative operator in the MST. Telenor suggest this number to be lower. NextGenTel cannot see how a lower WACC can be applied as a standard if there is to be competition in markets based on inputs from Market 4 and 5. If Telenor leaves margins for competitors that will not secure investors this level of return on capital, it is hard to see that it is possible to attract investors to these markets.

WIK's assessment of comments regarding principle 8

Broadnet and TDC/Get agreed with the proposed approach of using a WACC of 8,9% reflecting the risk of the retail operation of the modelled alternative operator in the MST.

Lyse/Viken questions the use of one WACC for all fixed line business as this assumes that the risk of investing in copper access (established nationwide network) and fibre access (network under deployment) is the same. Telenor argued that the WACC of 8,9% is a maximum and that in line with an ERT, the lowest WACC should be applied.

WIK concedes that the term reasonable profit rate should be determined with regard to risk in reference to those alternative operators that demand and use wholesale fibre access services (e.g. VULA) offered by Telenor to provide retail fibre broadband services. It might be that alternative operators which demand the Telenor's wholesale fibre services face a lower risk than Telenor. However, a WACC of 8.9 % is actually conceded to a reference operator in the Norwegian overall fixed line market and confirmed by Nkom. The underlying study recommends this WACC for both Telenor and alternative operators in copper and fibre markets.

ix. Relevant downstream costs – Principle 9

The principle according to the consultation document

Principle 9 (former)

The following five kinds of cost categories - own network cost, costs for terminating traffic in other networks; other costs (regulatory, number portability etc.), retail costs and common costs will be considered in the MST.

For retail costs a category-by-category approach will be in line with the categorisation presented by BEREC.

An EPMU approach will be employed for marking up other common costs.

Consultative input

Broadnet recognizes the listed cost elements as relevant.

TDC/Get finds that the downstream cost includes the relevant cost elements. With regards to costs obtain from the existing LRIC model replicating Telenor cost, Nkom must assure that these costs are adjusted to take into account the lower market penetration and lower utilization of the network given the footprint of the network. If trench sharing between core and access network is assumed in the existing LRIC-model, this sharing should be eliminated in the alternative operator cost since this network will primarily consist of core transportation and is established without possibility of trench sharing with access network. Cost sharing obtained with mobile network assets should be eliminated as well..

When looking at cost from the SMP operator's account, Nkom should be aware that an alternative operator is purchasing wholesale services from the SMP operator. Cost for a purchasing organization that handles renting and the ongoing communication with the SMP should therefore be included. Such cost is not a part of the retail cost that can be obtained from the SMP operator's account. For the retail cost, a cost of capital for e.g. IT assets (billing systems etc.) should be included similar to cost of capital for network costs.

Telenor agrees with the listed cost categories, but only as far as they cover avoidable or pure LRIC costs in line with our comments to principle 7. This means "common costs", and likely "other costs" should be excluded from the list, as these are not avoidable.

As common costs should not be allocated for the purposes of the MST, the EPMU approach is not needed.

NextGenTel comments on Telenor's response: Telenor argues that only avoidable costs are relevant. Hence, common costs and "other costs" should be excluded. As pointed out in the discussion of "The relevant cost standard" above, NextGenTel believes that all relevant costs associated with the production of the downstream products should be included in the MST, including a fair share of common costs.

NextGenTel fails to see the purpose of a MST at all if common costs are excluded from the test. In that case it is better to rely on the general margin squeeze test subsequent to competition law.

WIK's assessment of the comments regarding principle 9

The operators agree with the listed cost categories. As proposed the following five kinds of cost categories - own network cost, costs for terminating traffic in other networks; other costs (regulatory, number portability etc.), retail costs and common costs will be considered in the MST. For retail costs a category-by-category approach will be in line with the categorization presented by BEREC. An EPMU approach will be employed for marking up other common costs.

However, in line with its earlier remarks on the cost standard, Telenor asks to use avoidable costs or exclude common costs using pure LRIC. As said before, we do not agree with Telenor as the EC clearly stated that the LRIC+ standard is recommended, hence common costs have to be taken into account.

x. Relevant regulated wholesale input – Principle 10

The principle according to the consultation document

Principle 10 (former)

All elements of the pricing structure which an access seeker has to pay for purchasing the relevant elements of the wholesale input have to be taken care of. This includes recurring and non-recurring charges, charges for termination of the service, service provision, service cancellation if applicable.

Non-recurring charges have to be depreciated (or discounted) over a relevant time period. Volume discounts and/or long-term access pricing agreements will be taken into account in case they are representative for the business model of access seekers and/or they are in line with a competitive market structure.

Consultative input

Broadnet agrees that the test must take all elements of wholesale pricing into account. Broadnet finds it crucial for the effect of the ERT that the total cost of the complete value chain is reflected in the model.

Furthermore, Broadnet highlights that one of the main problems in market 4 and 5 is that Telenor systematically designs their wholesale products so that the alternative providers must purchase more elements than requested in order to get access to the customer. A bundle of non-regulated cost elements gives the alternative network owners actual cost that prevents them from competing effectively with a margin in the end-user market. These are cost elements related to backbone capacity (e-line), housing, contractor work combined with different volume discount models. For service providers reselling Telenor WS services the same challenge occurs. Telenor actual end-user pricing in their retail channels are down to the WS price for the service provider, leaving the service provider with a very small or no margin.

Broadnet also points out that implementation of customers varies for private and business customers. Deliveries of broadband access to the residential market can be to a great extent be atomized. Deliveries to the business segment are more complex and other cost elements like project management will incur.

TDC/Get agrees with WIK that the test must take all elements of the wholesale pricing into account. Nkom can not only look at the regulated wholesale costs but must also look at the other elements that are a natural part of an access product. If this is not being done, Telenor will be able to bypass the regulation.

TDC/Get finds that relying on input based on list/standard prices from Telenor are not sufficient, since they have experienced that additional cost is adding up during the fibre projects. TDC/Get find that *de facto* incurred cost for a sample of operator-projects should be investigated in order to establish a mark-up on the list prices and thereby capture the total fibre line cost.

Telenor argues that given an appropriate EEO approach (without scale adjustments) this principle is appropriate. No further comment to the principle as such.

WIK's assessment of comments regarding principle 10

Realising that there is a general agreement on this issue, we conclude that all elements of the pricing structure which an access seeker has to pay for purchasing the relevant elements of the wholesale input have to be taken into account. This includes recurring and non-recurring charges, charges for termination of the service, service provision and service cancellation if applicable.

Broadnet commented that Telenor increases wholesale costs for alternative operators by designing their wholesale products so that more elements than requested need to be purchased. We understand the issue at hand, however, this does not change the principle and also falls outside the scope of the MST. As noted before, this is an aspect to be considered while discussing the reference offers of Telenor.

TDC/Get noted that not only list/standard prices should be considered in the MST but also the real incurred costs during fibre projects as they tend to add up.

We note TDC/Get's comment and remark that during the data collection for the MST, alternative operators can provide Nkom with the incurred costs for the relevant fibre wholesale access services to ensure that all costs are considered in the MST.

xi. Trigger for applying the test – Principle 11

The principle according to the consultation document

Principle 11 (former)

Three triggers for conducting a MST are identified:

- The ex-ante MST will be conducted each time a new wholesale price in Market 4 or 5 is determined and/or a new wholesale product is introduced.
- A MST for individual wholesale products will be conducted periodically, every 6

months, in line with the existing 6 month collection of subscriber data for Nkom's statistics report.

- Additional MSTs may also be conducted under reasonable and proportionate circumstances. This may in particular be the case if competitors make justified reasoning of major market changes related to costs, prices, and customer distribution which would lead to different results compared to the original ex ante margin squeeze test.

Consultative input

Broadnet agrees that the test must be transparent and predictable for all market players, including alternative network operators. Telenor's planned launch of new services/offers at both the retail and wholesale level should trigger test (no launch before service/offer passes test).

Broadnet finds that the test should be conducted every 6 months and agrees that the test should be conducted in other circumstances if appropriate, e.g. following complaints from access seekers.

TDC/Get agrees with three triggers presented by WIK for applying the test are relevant:

Regular reviews of Telenor's margins for a predetermined period of time will provide the Authority with valuable information of Telenor's compliance with regulatory obligations. With regard to conducting a MST in case of a new wholesale price, TDC/Get is of the opinion that Nkom should also run the test if Telenor launches, retracts or alters the identified "flagship products" in the retail market. Material changes in prices should also trigger a review. Adoption of the test will give Telenor a strong incentive to aggressively market "non-flagship" offers that are not tested.

Further, the decision introducing the test should specify that Telenor may not launch or amend the product(s) in question before they have been tested. This will ensure a level playing field as the incumbent loses the "first mover advantage" Telenor benefits as of today from its status as both a wholesale provider and a competitor in the retail market.

Concerning the regular periodical test TDC/Get strongly suggests that Nkom commits to performing the test every 3 months instead of every 6 months. Once the model is in place the administrative resources required to review the wholesale and retail prices should be negligible compared to the potential welfare loss of a margin squeeze.

Telenor points out that WIK suggests three general triggers for conducting a MST that are indeed very broad and, used cumulatively, the proposed triggers would amount to a very interventionist procedure. Telenor will strongly advise against the proposed

procedural approach as it will be both unpredictable and discretionary in the sense that Nkom will have to assess each time, on the merits of the situation, why a test should or should not be conducted. In addition, WIK also suggests that in the case a new flagship product is launched the test should be conducted within 3 months.

CRA discusses different procedures for economic replicability testing thoroughly and Telenor recommends that WIK and also Nkom study chapter 6 in the CRA report in depth. Empirically, it also demonstrates that WIK's proposal is far removed from practice in other EEA countries (cf. figure 10, on page 64).

Telenor suggests a periodical test, at 12 month interval or complaint based only. This is more in line with the Nkom decisions in market 4 and market 5.

In practice, Telenor, the rest of the fibre companies as well as Nkom itself should not be burdened every 6 month with the processing of all the data information necessary to perform an update of the MST. The needed resource effort from all stakeholders makes such a frequency disproportional and hard to justify from any cost/benefit perspective. WIK is referring to the collection of subscriber data for Nkom's statistics report every 6 month, but that process will not be sufficient to provide all required input data. Major additions/changes are therefore necessary to report and process the required data.

NextGenTel comments Telenor's response: Telenor suggests "periodical test, at 12 month interval or complaint based only". This means longer periodicals than the 6 months periodicals suggested by the WIK report.

NextGenTel points out that if the MST promotes an ex ante restorative effect and not only an ex post based deterrent effect, the test must be applied with shorter intervals than 12 months. If Telenor performs a margin squeeze in the beginning of a 12 month period, an efficient competitor may already be out of the market when a margin squeeze is established by Nkom. Hence, the periodically tests should be performed every 6 months or more often.

In addition, NextGenTel, points out the need for a swift, easy-to-access and low cost complaint system. As pointed out in their initial comments, the periodical standard test is likely to fail in detecting margin squeeze on new innovative products introduced by Telenor's competitors. This gives Telenor an opportunity to free-ride on competitors' innovations, and discourages innovation by Telenor competitors in the first place. NextGenTel's experience is that general competition law is too rigid and slow to be relied on in such cases as case-handling time and procedural obstacles prevents competition law to be an effective instrument. This can be repaired by an easy to access complaint system within the electronic communication framework.

WIK's assessment of the comments regarding principle 11

Regular periodic MSTs/ERTs are essential to deal with new market developments and to prevent first-mover advantages of the SMP operator inducing competitive distortions. A periodical review every 6 months, in line with the existing 6 month collection of subscriber data for Nkom's statistics reports, seems to be sufficient but also necessary.

Once the model is in place and the input parameters needed from the operators are specified and clarified with the operators, the administrative resources required from the operators become limited compared to potential welfare losses.

To avoid competitive distortions we also consider it necessary that the ex-ante MST will be conducted each time a new wholesale price in Market 4 or 5 is determined and/or a new wholesale product is introduced. Additional MSTs may also be conducted under reasonable and proportionate circumstances. This may in particular be the case if competitors make justified reasoning of major market changes related to costs, prices, and customer characteristics which would lead to different results compared to the original ex ante margin squeeze test.