Commission for
Communications Regulation

Consultation Paper

Further specification of the price control obligation, the transparency obligation and the access obligation in relation to the market for wholesale terminating segment of leased lines

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All responses to this consultation should be clearly marked:-
"Reference: Submission re ComReg 10/70" as indicated above, and sent by post, facsimile, e-mail or on-line at www.comreg.ie (current consultations), to arrive on or before **22 October, 2010**, to:

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Please note ComReg will publish all respondents submissions with the Response to this Consultation, subject to the provisions of ComReg's guidelines on the treatment of confidential information in ComReg Document No. 05/24

Consultation on the price control obligation, the transparency obligation and the access obligation in relation to the market for wholesale terminating segment of leased lines

Contents

1 Executive Summary

1.1 The Commission for Communications Regulation ("ComReg") is the regulator for the electronic communications sector in Ireland. One of ComReg's statutory functions is the regulation of leased lines in the market for wholesale terminating segment of leased lines.

1.2 The term "leased lines" refers to fixed, permanent telecommunications connections providing symmetric[1] capacity between two points. A leased line is permanent, in that capacity is available between the two fixed points. A wholesale leased line may be used as an input to the provision of a retail leased line or may be used as an input to provide other retail services, such as fixed and mobile voice services, or Virtual Private Networks ("VPNs"). A retail leased line is typically used by business customers to connect office sites or to access the internet.

1.3 The European Commission has recommended a number of markets as being susceptible to *ex-ante* regulation[2]. These markets have been reviewed in an Irish context and obligations were imposed where operators were designated with significant market power ("SMP"). One such market is the market for wholesale terminating segment of leased lines.

1.4 In ComReg Document No. 08/103 (Decision No. D06/08[3]) ComReg concluded that the market for wholesale terminating segment of leased lines was: (i) not tending towards competition in the near future; and (ii) Eircom Limited ("Eircom") was designated as having SMP in this market and as such is susceptible to *ex-ante* regulation. As a result, a number of obligations were imposed on Eircom which included the obligation to provide access, a non-discrimination obligation, a transparency obligation, an accounting separation obligation and a price control and cost accounting obligation.

1.5 In that same decision, ComReg also set out that the market for the minimum set of retail leased lines (bandwidths up to and including 2 Mb/s) and the market for wholesale trunk segments of leased lines are competitive and therefore not subject to regulation. As a consequence, no *ex-ante* regulation was imposed on the trunk segment of the market. This is in line with the European Commission's view of the recommended markets for *ex-ante* regulation. ComReg also determined that certain routes between defined urban centres of 155 Mb/s (STM 1) and above were also competitive. This list of urban centres was further extended in ComReg Document

[1] ComReg is of the view that a leased line should be characterised by broad rather than absolute symmetry, in the sense that upstream and downstream capacities should not necessarily be equal, but should be broadly equivalent.

[2] Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex-ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services.

[3] ComReg Document No. 08/103 (Decision No. D06/08) Decision Notice and Decision Instrument: Market Analysis – Leased Line Market Review; 22 December 2008.

No. 10/12, (Decision No. D02/10[4]). This decision is an important milestone in the recognition of the developments that have taken place in recent years in the competitive landscape of the leased line market in Ireland. However, there still remains an enduring bottleneck at the terminating segment of leased lines which still requires regulation and that is the subject of this consultation on the appropriate regulation for this market.

1.6 The market for wholesale terminating segment of leased lines consists of legacy wholesale leased lines ("WLLs"), legacy private partial circuits ("PPCs") and more recently Ethernet technology.

1.7 The evolution of Ethernet technology to provide leased lines facilitates the delivery of larger leased line circuits i.e. above 10 Mb/s and up to 1,000 Mb/s at lower costs than legacy technologies. The transition from legacy leased lines to next generation leased lines is currently in progress and Eircom and other players in the market are in the process of deploying the networks and selling services to the market. Appropriate regulation in this fast changing environment are key to ensuring market distortions and anti-competitive effects do not occur in the medium to long term through vertical and horizontal leverage of the SMP operator. It is also important that given the evolving level of competition in the market that the SMP operator is not unduly constrained through a rigid regulatory framework which impedes their ability to compete at the retail level. Balancing these objectives is a difficult but highly important task for the regulator to ensure competition is fostered while ensuring the end-user benefits from better quality services at lower prices.

1.8 The aim of this consultation is to further specify the price control obligation, and to a lesser extent the transparency obligation and the access obligation (in respect of fairness, reasonableness and timeliness), which have already been imposed on Eircom in December 2008. While this consultation deals primarily with a further specification of the price control obligation, no draft decision is included at this point for the price control obligation. As part of the response to this consultation it is proposed to further consult on the price control obligation and the associated proposed pricing which may become available over the coming months. A draft decision on the price control obligation will also be consulted upon at that stage. With regard to the proposed changes to the transparency obligation and the access obligation, a draft decision is included in Appendix A of this document. It is proposed that a final decision will be taken on the transparency obligation and the access obligation as part of the response to this consultation.

1.9 The price control obligation in the market for wholesale terminating segment of leased lines applies to both rental products and ancillary[5] services/products to ensure prices are cost oriented. However, this document addresses the costing and pricing approach for the rental products only. For the ancillary services/products, the price control will require Eircom to demonstrate that the individual prices

[4] ComReg Document No. 10/12: Response to Consultation No. 09/86 and Final Decision – Leased Line Markets: Review of Urban Centres, 15 February 2010.

[5] Ancillary charges include connection charges, disconnection charges, fault charges, etc.

proposed by it are cost oriented i.e. recovers efficiently incurred costs and a regulated rate of return.

1.10 In summary this consultation proposes to further specify the price control obligation in relation to the market for wholesale terminating segment of leased lines. The proposed obligations in this regard are as follows:

1.10.1 To determine the costs relating to PPCs, current generation Ethernet leased lines (referred to throughout this document as wholesale Ethernet access (“WEA”)) and wholesale next generation network (“NGN”) Ethernet leased lines on the basis of a bottom-up (“BU”) long-run average incremental costs (“LRAIC”) plus (referred to throughout this consultation as ‘BU-LRAIC plus’) model.

1.10.2 To determine the costs relating to WLLs based on an appropriate economic space[6] assessment between WLLs and PPCs on the basis of a similarly efficient operator (“SEO”) test.

1.10.3 To set prices for the legacy products i.e. WLLs, PPCs and WEA in the market for wholesale terminating segment of leased lines on the basis of a national average pricing approach.

1.10.4 To set prices in relation to the wholesale NGN Ethernet leased line products based on Eircom’s proposal of geographic de-averaging, whereby the prices reflect the costs of the geographic regions i.e. high density regions and medium density regions. It is also proposed to adopt a high density pricing approach in some medium density regions where there is sufficient demand. ComReg believes that this approach should ensure that any significant existing or future direct investment which requires significant bandwidth is not materially disadvantaged through a de-averaged pricing approach to the detriment of end users.

1.10.5 To ensure that there is an appropriate economic space between the relative pricing of other wholesale products. The economic space assessment will apply between the related wholesale NGN Ethernet leased line products and separately it will apply between the related wholesale legacy leased line products in the market for wholesale terminating segment of leased lines so that other operators can compete with Eircom.

1.10.6 Not to create a margin (price) squeeze between the prices of products in the market for wholesale terminating segment of leased lines and its associated retail offerings. The proposed ex-ante margin (price) squeeze test will assess the prices for the wholesale legacy leased lines products against the prices for the corresponding legacy services at a retail level and similarly will assess the prices for the wholesale NGN Ethernet leased lines products against the prices for the corresponding retail NGN leased line services. The preliminary view is that the margin (price) squeeze test should be based on an Equally Efficient Operator (“”EEO”) approach. It is

[6] The appropriate space between the prices of Eircom’s WLLs and PPCs which would be sufficient to promote sustainable infrastructure competition. It is also a concept supported by the European Regulator’s Group (“ERG”) in Common Position 09 (21).

proposed that the ex-ante margin squeeze obligation on Eircom will be assessed on an ex-post basis. Therefore, Eircom will monitor its margin squeeze obligation in terms of the prices between the wholesale products and the prices of the associated retail products in the leased lines market. However, ComReg may only intervene where necessary on an ex-post basis.

1.11 ComReg is of the preliminary view that generally the most appropriate costing methodology in the context of the wholesale legacy leased line products and the wholesale NGN Ethernet leased lines products and services in the market for wholesale terminating segment of leased lines is a 'LRAIC plus' on the basis of a BU model. ComReg believes that this costing approach should ensure that the the correct "build/buy" signal are set and it should therefore encourage infrastructure investment while allowing operators to assess their possible investment decisions and should ensure that the SMP operator recovers its efficiently incurred costs while making an appropriate rate of return. ComReg also believes that this approach should encourage operator efficiency.

1.12 On the other hand, ComReg is of the preliminary view that the costing methodology for WLLs should ensure the recovery of a reasonable level of costs by the SMP operator while consideration is given to the appropriate economic space between WLLs and PPCs. The purpose of an appropriate economic space between WLLs and PPCs aims to ensure the promotion of efficient infrastructure investment and encourages other authorised operators ("OAOs") to climb the ladder of investment. ComReg believes that this approach should therefore facilitate effective and sustainable competition while ensuring that there is an appropriate economic space between WLLs and PPCs so that OAOs have the incentives to buy PPCs. It also serves to protect those operators who have already invested and who may be left with stranded assets where the appropriate price floors are not respected. The main principles for assessing the appropriate economic space between wholesale products and services are set out in detail in section 3 of this document.

1.13 In relation to the pricing approach, ComReg is of the preliminary view that a national averaged pricing approach should continue for the legacy products and services. The pricing approach for the legacy products is well established and understood by industry. Given the stability of the market in the context of the legacy product set ComReg believes that there is currently no need to adopt an alternative approach. Therefore, ComReg proposes that the national averaged pricing approach for the legacy products and services in the market for wholesale terminating segment of leased lines should continue for at least the timeframe of this review.

1.14 Eircom proposes an alternative pricing approach for wholesale NGN Ethernet leased lines products and services where prices are differentiated by geographic regions i.e. de-averaged pricing approach. The rationale set out by Eircom to ComReg for geographic de-averaging is generally to bring prices for the various regions (high and medium density) in the country closer to their actual economic costs. Given that wholesale NGN Ethernet leased lines is a new product available to the marketplace, ComReg is of the preliminary view and based on representations made by Eircom, that the de-averaged pricing approach is less likely to lead to market distortions than an averaged pricing approach and is likely to be more sustainable in the long-term. It should also encourage efficient investment by operators, as well as providing greater choice and competitive prices for consumers i.e. business customers.

1.15 In order to prevent foreclosing future investment in the medium density areas of Ireland, ComReg is of the preliminary view that the 'high density' pricing approach should be applied to those medium density regions on a case by case basis where the type of business involved will require very high bandwidth circuits from an exchange outside the high density regions. Where there is an increased demand in a region, currently recognised as a medium density region which would lead to a lower unit cost per Mb equivalent to that of a high density region, this may drive the re-designation of an aggregation node from medium to high density. ComReg has set out a number of options in this consultation in terms of proposed measures for determining demand requirements. The options proposed include bandwidth and footprint. ComReg believes that the proposed pricing approach should also ensure that any future direct investment which might be promoted through the various agencies in Ireland is not disadvantaged through a de-averaged pricing approach to the detriment of end users. ComReg welcomes views on this approach.

1.16 This document also sets out ComReg's preliminary view that Eircom should no longer be required to publish pricing information for WLL circuits of greater than 10 Mb/s generally. ComReg may revise this upper limit as appropriate at a later stage, in line with future characteristics of such a product. With regard to the access obligation, ComReg proposes to amend the frequency of billing offered by Eircom to OAOs from billing quarterly in advance to billing monthly in advance while allowing Eircom to continue offering 30 days credit terms. In the interests of proportionality and reasonableness, ComReg is of the preliminary view that these new terms should be effective from the next billing cycle, twelve months from any decision so that Eircom has a reasonable period of time to implement the changes to its systems and so that the changes are not overly disruptive to its own business planning.

1.17 ComReg believes that the further specification of the price control obligation as well as the proposed changes to part of the transparency obligation and access obligation presents a reasonable, practical and fair solution that takes into account the interests of Eircom, industry and consumers. It is intended that the proposals set out in this consultation will promote efficiency, sustainable competition and consumer welfare.

1.18 ComReg will consider all the views of respondents to this consultation and will take utmost account of any comments from the European Commission in this regard. Please note the following points in relation to this consultation document and the proposed next stages of the consultation process:

- This consultation document sets out the main proposals in relation to the price control obligation and to a lesser extent on the transparency obligation and the access obligation for the market for terminating segment of leased lines.

- This consultation document sets out a draft decision instrument (in Appendix A) in relation to the transparency obligation and the access obligation only.
- It is proposed that the response to this consultation will consider all of the points raised as part of this consultation as well as a further consultation on the appropriate price control obligation and the associated prices which will become available in the coming months.
- It is proposed that the response to this consultation will include a draft decision on the price control obligation and a final decision on the transparency obligation and the access obligation.

2 Introduction

Overview

2.1 ComReg is responsible for the regulation of the electronic communications sector in Ireland. Part of ComReg's statutory functions under the Communications Regulation Act, 2002 as amended by the Communications Regulation (Amendment) Act 2007[7] ("the Act") and a number of statutory instruments, is the regulation of the market for the wholesale terminating segment of leased lines.

2.2 The term "leased lines" refers to fixed, permanent telecommunications connections providing symmetric capacity between two points. A leased line is permanent, in that capacity is available between the two fixed points. However, capacity could be reserved or shared through the associated network depending on the nature of the leased line. A wholesale leased line may be used as an input to the provision of a retail leased line, or may be used as an input to provide other retail services, such as fixed and mobile voice services, or VPNs. A wholesale leased line may also be used by an operator seeking to extend parts of its network without there being a direct corresponding retail service.

2.3 A retail leased line is typically used by business customers to connect office sites or to access the internet. It is a matter for the end user to determine the nature and mix of the services carried over the leased line. The profile of retail leased line customers is predominately business customers, and business customers will normally purchase leased lines, particularly those purchasing fibre based (10 Mb/s + speeds), under defined business criteria, namely where:

- High quality around the clock access to the internet where a service level agreement ("SLA") is required;
- There is a requirement to run mission critical applications;
- Fast upstream speeds are required (e.g. remote workers accessing office based applications will be pulling away data from their office); and
- Access to view real time bandwidth monitoring statistics.

2.4 While leased lines deliver criteria such as security, resilience, symmetry and reliability, these criteria have meant that leased lines have been the more expensive option available to business customers.

2.5 The roll out of high speed broadband is now a popular alternative to leased lines and to previously integrated services digital network ("ISDN"). It is faster than ISDN and less costly than traditional leased lines. However, this depends on the requirements of the customer in question as current broadband performances generally only allow for high speed download with asymmetric upload speeds. This is generally not acceptable for most medium to large businesses who require resilience and consistency of speed to ensure downtime is at a minimum and day to day operations are not impeded through poor quality connections.

[7] No. 22 of 2007.

Regulatory Background

2.6 In line with its statutory obligations[8], ComReg must undertake a review of the markets for leased lines, and analyse whether the market(s) are susceptible to competition. If subsequent to the market analysis it transpires that the market is not working effectively or in a competitive manner, then, on foot of a finding of SMP, ComReg is obliged to impose at least one remedy on the dominant operator[9].

2.7 On 22 December 2008, ComReg issued its decision in ComReg Document No. 08/103 (Decision No. D06/08) on the leased lines market analysis. In that decision ComReg set out that the market for the minimum set of retail leased lines (bandwidths up to and including 2 Mb/s) and the market for wholesale trunk segments of leased lines are competitive and therefore not subject to regulation. As a consequence, no *ex-ante* regulation was imposed on the trunk segment of the market. This is in line with the European Commission's view of the recommended markets for *ex-ante* regulation[10].

2.8 ComReg also determined that certain routes between defined urban centres of 155 Mb/s (STM 1) and above were also competitive. This list of urban centres was further extended in ComReg Document No. 10/12, (Decision No. D02/10). This decision is an important milestone in the recognition of the developments that have taken place in recent years in the competitive landscape of the leased line market in Ireland. However, there still remains an enduring bottleneck at the market for wholesale terminating segment of leased lines which still requires regulation and that is the subject of this consultation on the appropriate regulation for this market.

2.9 Terminating segments generally supply lower densities of traffic on a less aggregated basis. In ComReg Document No. 08/103 (Decision No. D06/08) ComReg specified that everything outside of the trunk market is considered to be part of the terminating segment market, including the main points of handover. Those circuits which facilitate routes which run between urban centres and which are of a capacity less than 155 Mb/s also fall into this market.

2.10 In terms of the market for wholesale terminating segment of leased lines, ComReg in the same Decision No. D06/08 concluded that: (i) it is not tending towards competition in the near future; and (ii) Eircom has been designated as having SMP in this market and as such is susceptible to *ex-ante* regulation.

2.11 In the 2005 market review, ComReg set out in ComReg Document No. 05/29 (Decision No. D7/05) that Eircom did not have SMP in the retail market for leased lines greater than 2Mb/s but had SMP in the minimum set of retail leased lines up to and including 2 Mb/s, and in the markets for both the terminating and trunk segments of wholesale leased lines. With regard to the market for the minimum set

[8] Regulation 25, 26 and 27 of the European Communities (Electronic Communications Networks and Services) (Framework) Regulations, S.I. No. 307 of 2003 (as amended).

[9] Regulation 9 of the European Communities (Electronic Communications Networks and Services) (Access) Regulations, S.I. No. 305 of 2003 (as amended).

[10] Commission Recommendation as of 17 December 2007, 2007/879/CE.

of retail leased lines: as part of the 2005 review, the EC proposed that this market should be removed from the list of relevant markets, since wholesale regulation should ensure that there is a competitive supply at the retail level. The EC set out reasons that, in presence of effective wholesale regulation, this market does not meet the three criteria test that would qualify this market for *ex-ante* regulation. In ComReg Decision Document D06/08, ComReg has confirmed the EC's view and has decided that entry barriers to the retail markets are no longer high and non-transitory due to the presence of wholesale regulation, and this in turn allows existing and potential competitors to enter and compete.

2.12 It is therefore crucial, for both the wholesale and the retail element of leased lines provision that *ex-ante* regulation on the wholesale market, when deemed necessary, is effective in achieving its goals. Absent regulation, a vertically integrated operator with market power in the wholesale markets may be able to exert its market power by charging an excessive price for wholesale inputs, and may be able to foreclose the retail market by means of a margin squeeze. In this regard, ComReg has set out its proposed approach in relation to an ex-ante margin (price) squeeze test between the products within the market for wholesale terminating segment of leased lines and its associated retail offerings. The proposed ex-ante margin (price) squeeze test will assess the prices for the wholesale legacy leased lines products against the prices for the corresponding legacy services at a retail level and similarly will assess the prices for the wholesale NGN Ethernet leased lines products against the prices for the corresponding retail NGN leased line services. This is discussed in section 6.

2.13 The market for wholesale terminating segments of leased lines is further complicated with the constant evolution of new technologies used to provide leased lines. One example is the use of Ethernet technology which is facilitating the delivery of larger leased line circuits at lower costs than traditional technologies. The transition from traditional leased lines to next generation leased lines is currently in progress and Eircom and other players in the market are in the process of deploying the networks and selling services to the market. Appropriate regulation in this fast changing environment is key to ensuring market distortions and anti-competitive effects do not occur in the medium to long term through vertical and horizontal leverage of the SMP operator. It is also important that given the evolving level of competition in the market that the SMP operator is not unduly constrained through a rigid regulatory framework which impedes their ability to compete at the retail level. Balancing these objectives is a difficult but highly important task for the regulator to ensure competition is fostered while ensuring the end- user benefits from better quality services at lower prices.

2.14 The market for wholesale terminating segment of leased lines consists of legacy wholesale leased lines ("WLLs"), legacy private partial circuits ("PPCs") and Ethernet technology.

2.15 WLLs involve purchasing a full end-to-end leased line from the incumbent operator, while the use of PPCs allows an OAO to combine elements of their own network infrastructure with parts of Eircom's network. As a result of ComReg's market analysis and its finding of SMP on Eircom in the market for wholesale terminating segment of leased lines, a number of obligations were imposed on Eircom which included an access obligation pursuant to Regulation 13 of the Access Regulations as set out in sections 6 and 7 of the Decision Instrument in ComReg Decision No. D06/08, a price control obligation pursuant to Regulation 14 of the Access Regulations as set out in section 11 of the Decision Instrument in ComReg Decision No. D06/08 and a transparency obligation pursuant to Regulation 10 of the Access Regulations as set out in section 9 of the Decision Instrument in ComReg Decision No. D06/08.

2.16 With regard to the price control obligation, pursuant to Regulation 14 of the Access Regulations, it was also explicitly set out that PPC products should be cost oriented and that such costs should be calculated using a forward looking long run incremental costs ("FL-LRIC") or an alternative pricing model, if ComReg decides, following a further consultation. With regard to WLL products, ComReg did not stipulate any specific costing methodology for the application of the price control obligation going forward. In this document, ComReg has set out its proposals in relation to the basis for setting WLL charges going forward. In the same Decision Document (D06/08), ComReg also set out that Eircom has an obligation not to cause a margin squeeze.

2.17 In ComReg Decision No. D06/08, ComReg set out, pursuant to Regulation 10 of the Access Regulations that Eircom should continue to publish a reference offer and pricing information. In addition, ComReg specified that it may issue Directions to Eircom from time to time requiring it to publish specified information, such as prices. In addition, the decision also set out that Eircom should make public pricing information, in respect of leased line products, as specified by ComReg from time to time. In terms of its obligation to publish information, ComReg also specified in ComReg Decision No. D06/08 that Eircom shall publish at least three months in advance any proposed changes to the wholesale price and the application of such prices on its website for the purpose of notifying all interested parties of such changes. Eircom shall notify ComReg at least 5 days in advance of any such publication taking place. This period of 5 days may be varied from time to time with the agreement of ComReg. Proposed changes to the reference offer ("RO") and proposed changes to wholesale prices and the application of such prices shall not be implemented without prior notification to ComReg and OAOs and prior approval from ComReg. For the avoidance of doubt, any new product, service or associated facility in the Market shall not be launched without prior notification to ComReg and OAOs and prior approval from ComReg.

2.18 In relation to the access obligation, ComReg imposed an obligation on Eircom that access shall be subject to conditions of fairness reasonableness and timeliness, pursuant to Regulation 13(3) of the Access Regulations.

Regulatory Objectives of the Price Control obligation, the Transparency Obligation and the Access Obligation

2.19 The regulatory objectives in relation to the price control obligation, the transparency obligation and the access obligation were set out in ComReg Document No. 08/63 and in ComReg Document No. 08/103 (Decision No. D06/08) in relation to the market for the wholesale terminating segment of leased lines.

2.20 In summary, the objectives of a price control obligation are to promote retail competition by ensuring that the SMP designated operator does not charge excessive prices for wholesale inputs. In addition, it is necessary to promote efficient infrastructure investment and encourage operators on the ladder of investment.

2.21 The objectives of a transparency obligation is to ensure that ComReg and OAOs can observe price and non-price terms and conditions for Eircom's wholesale leased line terminating segment products. A transparency obligation is required to support any accounting separation obligations. This would also allow ComReg to monitor compliance with any non-discrimination obligations, and address competition problems relating to cross-subsidisation, price discrimination and the application of price squeezes. The Access Regulations provide for publication of a reference offer that is sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested – this should include a description of the relevant offers broken down into components according to market needs and a description of the associated terms and conditions, including prices.

2.22 The access obligation is subject to conditions of fairness, reasonableness and timeliness so that the access delivered to OAOs does not place them at a competitive disadvantage.

Purpose of this Consultation

2.23 The purpose of this consultation is to further specify the price control obligation, the transparency obligation and the access obligation in relation to the market for wholesale terminating segment of leased lines. In essence, this consultation proposes to address the following:

- To set out the proposed costing methodology in relation to WLLs, PPCs (including WEA) and the wholesale NGN Ethernet leased line products;
- To set out the relevant principles and options specific to an assessment of the appropriate economic space between WLLs and PPCs and to also set out the principles in relation to an assessment of the appropriate economic space between any of the other wholesale products i.e. between the related wholesale NGN Ethernet leased line products within the market for wholesale terminating segment of leased lines;
- To set out the proposed model inputs and assumptions to be used in determining the level of efficient costs for PPCs, WEA and wholesale NGN Ethernet leased line products and services;
- To set out the proposed pricing approach to ultimately determine the output charges for WLLs, PPCs, WEA and wholesale NGN Ethernet leased line products and services;

- To set out the ex-ante margin (price) squeeze test between the wholesale products within the market for wholesale terminating segment of leased lines and its associated retail offerings. The proposed ex-ante margin (price) squeeze test will assess the prices for the wholesale legacy leased lines products against the prices for the corresponding legacy services at a retail level and similarly will assess the prices for the wholesale NGN Ethernet leased lines products against the prices for the corresponding retail NGN leased line services. It is proposed that the ex-ante margin squeeze obligation on Eircom will be assessed on an ex-post basis.

- To further specify the transparency obligation in relation to WLLs, including WLLs greater than 10mb/s; and

- To further specify the access obligation and in particular the fairness, reasonableness and timeliness requirement with specific regard to Eircom's billing process.

2.24 With regard to the price control obligation, ComReg has set out below its preliminary views in relation to the most appropriate costing methodology to ensure that Eircom can meet its price control obligation. ComReg is of the preliminary view that the proposals set out below in relation to the costing methodology for WLL, PPCs, WEAs and wholesale NGN Ethernet leased lines will ensure the promotion of efficient infrastructure investment and encouraging operators on the ladder of investment. ComReg is of the view that the review of the appropriate costing methodology for setting the wholesale charges in the market for wholesale terminating segment of leased lines is of utmost importance in light of NGN network investment of Eircom and the OAOs. NGN network investment can provide significant benefits to industry and ultimately to consumers given the higher speeds associated with NGN technology as well as the potential for lower charges in the future.

2.25 Further to ComReg's preliminary view on the most appropriate costing methodology to apply in the context of leased lines ComReg has also set out its preliminary views on the model inputs, model parameters and the assumptions to be used as part of the modelling exercise. This will inform ComReg's preliminary views on the relevant capital cost, operating costs and demand for the cost model and will subsequently allow for the determination of the output charges for WLLs, PPCs, WEAs and wholesale NGN Ethernet leased lines, at a later stage. At this point given the early stages of development of NGN infrastructure, this document will only consult insofar as possible on NGN Ethernet technology.

2.26 The consultation also addresses the proposed pricing approach in order to determine the relevant charges both for the legacy products and the wholesale NGN Ethernet leased line products. This discussion includes the options available in terms of setting wholesale Ethernet leased line charges and the most reasonable and appropriate approach to take in this regard.

2.27 ComReg is also consulting on a set of principles and appropriate options in relation to an assessment of the appropriate economic space between WLLs and PPCs, and which can also be applied to the any future assessment of the appropriate economic space between other wholesale products i.e. between the wholesale NGN Ethernet products. In addition, this document also sets out an ex-ante margin (price) squeeze test between the wholesale products in the market for wholesale terminating segment of leased lines and its associated retail offerings. The proposed ex-ante margin (price) squeeze test will assess the prices for the wholesale legacy leased lines products against the prices for the corresponding legacy services at a retail level and similarly will assess the prices for the wholesale NGN Ethernet leased lines products against the prices for the corresponding retail NGN leased line services.

2.28 In relation to the transparency obligation, ComReg is setting out its preliminary views on the level of transparency required in relation to WLLs greater than 10mb/s.

2.29 In relation to the requirement that access shall be subject to conditions dealing with fairness, reasonableness and timeliness, ComReg is setting out its preliminary views on billing. ComReg proposes to amend the frequency of billing offered by Eircom to OAOs from billing quarterly in advance to billing monthly in advance while allowing Eircom to continue offering 30 days credit terms. ComReg is of the preliminary view that these new terms should be effective from the next billing cycle, twelve months from any decision so that Eircom has a reasonable period of time to implement the changes to its systems and so that the changes are not overly disruptive to Eircom's business.

2.30 Please note the following points in relation to this consultation document and the proposed next stages of the consultation process:

- This consultation document sets out the main proposals in relation to the price control obligation and to a lesser extent on the transparency obligation and the access obligation for the market for terminating segment of leased lines.
- This consultation document sets out a draft decision instrument (in Appendix A) in relation to the transparency obligation and the access obligation only.
- It is proposed that the response to this consultation will consider all of the points raised as part of this consultation as well as a further consultation on the appropriate price control obligation and the associated prices which will become available in the coming months.
- It is proposed that the response to this consultation will include a draft decision on the price control obligation and a final decision on the transparency obligation and the access obligation.

Structure of this document

2.31 **Section 3** of this document contains ComReg's preliminary views in relation to the most appropriate costing methodology to use in order to determine the efficient level of costs in relation to the market for wholesale terminating segment of leased lines products, services and associated facilities and so that Eircom is in compliance with the price control obligation. This section also includes ComReg's preliminary views in relation to an assessment of the appropriate economic space between WLLs and PPCs, and also in relation to the other wholesale products in the market for wholesale terminating segment of leased lines i.e. between wholesale NGN Ethernet leased line products.

2.32 **Section 4** of this document sets out ComReg's preliminary views on the model inputs, engineering rules and model assumptions in relation to the capital costs, the operating costs and the demand requirements in relation to the provision of PPCs and wholesale NGN Ethernet leased lines.

2.33 **Section 5** of this document sets out ComReg's preliminary views on the most appropriate pricing approach to adopt in terms of setting charges for WLLs, PPCs (including WEA) and wholesale NGN Ethernet leased line products, going forward.

2.34 **Section 6** of this document contains ComReg's proposed ex-ante margin (price) squeeze test between the wholesale products in the market for wholesale terminating segment of leased lines and its associated retail offerings. The proposed ex-ante margin (price) squeeze test will assess the prices for the wholesale legacy leased lines products against the prices for the corresponding legacy services at a retail level and similarly will assess the prices for the wholesale NGN Ethernet leased lines products against the prices for the corresponding retail NGN leased line services. It is proposed that the ex-ante margin squeeze obligation on Eircom will be assessed on an ex-post basis.

2.35 **Section 7** of this document contains ComReg's preliminary views in relation to the level of transparency required in relation to the publication of prices for WLLs.

2.36 **Section 8** of this document contains other issues raised by industry which are relevant to the market for wholesale terminating segment of leased lines such as billing.

2.37 **Section 9** of this document contains the regulatory impact assessment ("RIA") which sets out ComReg's proposed options and the likely impact on the various stakeholders.

2.38 **Section 10** of this document contains the proposed changes in terms of the draft decision in relation to the transparency obligation and the access obligation. The draft decision is included in Appendix A of this document.

3 Proposed Further Specification of the Price Control Obligation

Overview

3.1 This section of the document sets out ComReg's preliminary views in relation to the specification of the price control obligation imposed on Eircom in the market for wholesale terminating segment of leased lines.

3.2 On 30 March 2005 in ComReg Document No. 05/29 (ComReg Decision No. D7/05), ComReg completed its first round market analysis in relation to the leased lines markets. In that Decision ComReg set out that the price control for WLLs up to and including 2Mb/s should be based on a retail minus price control i.e. the WLL charges should be at least 8% less than the retail price charged by Eircom to its end-users for an end to end leased line, which is the retail equivalent of such WLLs. WLLs above 2Mb/s should be offered to other operators on terms and conditions equivalent to those offered to Eircom's retail arm. That Decision also set out that PPCs should be cost oriented and such costs should be calculated using a pricing model based on FL-LRIC. As Ethernet technology did not exist at that time no specific price controls were set out in this regard.

3.3 In the second round market reviews the price control obligation as set out in ComReg Document No. 08/103 (Decision No. D06/08) stipulated that the prices charged by Eircom for PPCs should be cost oriented and calculated based on a FL-LRIC model unless ComReg decided, following a consultation, to adopt an alternative pricing model. With regard to WLL products ComReg did not stipulate any specific costing methodology for application of the price control obligation.

3.4 It was also stipulated in ComReg Document No. 08/103 (Decision No. D06/08) that Eircom would not make available any new product, service or associated facility to the market without ComReg's prior approval of the related prices.

3.5 ComReg believes that the price control obligation should ensure that the SMP designated operator does not charge excessive prices for wholesale inputs and at the same time should promote efficient infrastructure investment and encourage operators on the ladder of investment. This section of the document discusses how ComReg intends to further specify the price control obligation in the context of the products within the market for wholesale terminating segment of leased lines.

3.6 A number of options, defined by regulatory practice, are available to ComReg in order to determine regulated wholesale prices. ComReg believes that consideration of the following factors is necessary in assessing the options available to establish the underlying basis of the price control obligation:

- the regulatory objectives that the price control is required to achieve;
- the current and foreseeable demand of the product, service or associated facility in question within the relevant market;

- the data available to the regulator; and
- the speed of technological advancement.

3.7 Set out below are ComReg's preliminary views on the proposed pricing methodologies appropriate to ensure compliance with the price control obligation for the products, services and associated facilities within the market for wholesale terminating segment of leased lines. In setting out its preliminary views, ComReg seeks industry views of its assessment and preliminary conclusions. ComReg's preliminary views are set out under two headings as follows:

- *Possible costing methodologies for setting a price control for the market for wholesale terminating segment of leased lines products/services*; and
- *Application of the price control obligation in relation to PPCs, WEA, wholesale NGN Ethernet leased lines and WLLs*.

Possible costing methodologies for setting a price control for the market for wholesale terminating segment of leased lines products/services

3.8 The aim of this section is to assess the various options available to ComReg in terms of determining the most appropriate costing methodologies to be used to ensure compliance with the price control obligation for products, services and associated facilities in the market for wholesale terminating segment of leased lines and to seek industry views on ComReg's preliminary views and proposals.

3.9 In ComReg Document No. 08/103 (Decision No. D06/08), ComReg set out that the prices charged by Eircom for PPCs should be cost oriented and calculated based on a FL-LRIC model unless otherwise decided by ComReg following consultation.

3.10 It is proposed that the price control will be applied to both rental products and ancillary services/products in the market for wholesale terminating segment of leased lines to ensure that prices are cost oriented. In the case of the rental products within the market for wholesale terminating segment of leased lines, it is proposed that the price control will be based on the modelling principles set out in this document. For the ancillary services/products, the price control will require Eircom to demonstrate that the individual prices that they propose are cost oriented and maximum prices will be set.

3.11 As part of this review ComReg considered whether WLLs above 10Mb/s generally should be subject to a differentiated price control. ComReg is of the preliminary view that the approach set out below in terms of the costing methodology and pricing approach for WLLs relates to all WLLs generally within the market for wholesale terminating segments of leased lines. It should also be clear that WLLs between the urban centres and less than STM1 generally are part of the market for the wholesale terminating segments of leased lines and therefore the proposals set out below in terms of the costing methodology and the pricing approach for WLLs also relates to these.

3.12 As set out above, there are a number of options available to ComReg in terms of the costing methodologies used to determine the appropriate regulated wholesale prices.

Figure 1: The four possible costing methodologies for the setting charges in the market for wholesale terminating segment of leased lines

	Top-down		Bottom-up	
	Historic costs	Current costs	Historic costs	Current costs
FL - LRAIC		TD LRAIC		BU LRAIC
FDC	HCA	CCA		

3.13 Before we discuss each of these options, it is important to recap on the regulatory objectives and the current status of competition in the wholesale market in the Irish telecoms sector.

3.14 The relevant objectives which must be considered when applying remedies are set out in section 12 of the Act are as follows:

- To promote competition;
- To contribute to the development of the internal market; and
- To promote the interests of users within the Community.

3.15 ComReg is of the view that competition would be best served by encouraging OAOs to use PPCs rather than traditional WLLs where possible, as this involves a greater investment in infrastructure by operators, and a lesser reliance on reselling Eircom's product. The preliminary views set out by ComReg below in terms of the price control measures are largely based on this objective.

3.16 In ComReg Document No. 08/63, it was noted that there was a significant shift within the market for wholesale terminating segment of leased lines from the purchase of WLLs to the purchase of PPCs. Data provided to ComReg in the course of the market analysis process suggested that most OAOs were migrating from WLLs to PPCs where possible.

3.17 ComReg has a number of options available to it in terms of achieving its regulatory objectives which takes into account the current demand and supply situation in the relevant market, technological advancements and the data available to ComReg. ComReg is of the view that the relevant options to determine an appropriate costing methodology can be summarised as follows:

1. Historic costs or current costs;
2. LRAIC or fully distributed costs ("FDC"); and
3. Top-down ("TD") model, bottom-up ("BU") model or hybrid model.

1. Historical Costs or Current costs:

3.18 A key regulatory decision to consider in determining wholesale regulated charges is the cost base to adopt, i.e. historic costs or their current cost equivalents. In deciding the relevant cost base, ComReg believes that the promotion of competition and the interests of end-users are paramount.

3.19 Under the historic cost basis, the operator recovers costs actually incurred in providing the products, services or associated facilities, plus a normal rate of return on the investment. The historical cost accounts ("HCAs") is based upon the actual reported financial results of an operator for a given period which has expired. The results from the HCAs should be directly reconcilable with the statutory financial statements of the operator. However, one of the main issues with the HCA accounts is the lack of granularity of the data contained within them.

3.20 The historic cost basis has the advantage that there is no risk of an undertaking being paid for services it did not provide, nor being paid more than it spent to provide those services. The European Regulators Group ("ERG")[11] recommends that historic costs are not satisfactory for regulatory decision making.

3.21 A wholesale charge calculated solely on the basis of historical costs would not give the appropriate signals for operators to reduce costs and would not give alternative operators a relevant reference point against which they can compare their possible investment decisions.

3.22 In considering the most appropriate cost base to adopt in this context, it is important to take account of the need to incentivise investment while at the same time accounting for the cost of modern equivalent assets ("MEA"). ComReg is of the preliminary view that given the objective of promotion of wholesale competition the current cost approach is the most relevant cost base to determine the wholesale leased line charges at hand. Given that the telecommunications industry is driven by technological improvements and change, there are many types of technologically driven equipment where costs are considerably lower under current costs than under the historic cost basis. ComReg is of the preliminary view that unlike the historic cost approach, the current cost approach sends the correct "build/buy signal" to industry and therefore encourages infrastructure investment while allowing operators to compare their possible investment decisions.

ComReg's Preliminary View

3.23 ComReg is of the preliminary view that in general current costs are the most appropriate basis on which to set wholesale regulated charges for the products, services and associated facilities in the terminating segment of the leased lines market. The current cost approach sends better "build/buy signal" to industry and therefore encourages infrastructure investment while allowing operators to assess

[11] ERG Common Position: Guidelines for implementing the Commission Recommendation C (2005) 3480 on Accounting Separation and Cost Accounting Systems under the regulatory framework for electronic communications.

their possible investment decisions.

2. ***Top down or Bottom up:***

3.24 Another key regulatory decision to consider in determining wholesale regulated charges is the most appropriate modelling approach to use. This choice is interlinked with the choice of the cost valuation base and the cost accounting methodology, and in turn depends on the regulatory objectives given the current and prospective situation in the market.

3.25 Traditionally the choice of cost models has been between a Top Down ("TD") and a Bottom Up ("BU") approach.

3.26 In TD models the starting source of information for estimating the costs of services is normally the costs actually incurred by the operator. The main disadvantage of the TD approach is that it requires a significant amount of detail from the operators accounting systems and on the inventory of the operator's network. The TD information relies heavily on the robustness of the data provided by the operator. ComReg has in the past requested and obtained more granular top down historic cost information from Eircom which has enabled it to compare the outputs of a modelling exercise with top down information and to understand any differences.

3.27 TD models can be developed with either a current cost or a historic cost base. Similarly, both FDC and LRAIC are compatible with a TD approach. However, the TD approach implies that the reference point is the operator's actual set of accounts. The main issue in this regard is that there will always be some legacy issues by which the model is inevitably constrained in the analysis or, put it differently, the TD approach is not, and cannot be converted into, a forward-looking approach. This can potentially yield inefficient results and, more importantly, may provide the wrong "build/buy signal" to industry.

3.28 Equally, TD models might provide the SMP operator with incentives to over-invest, since incurred costs are generally allowed to be recovered.

3.29 On the other hand, the advantages of using a TD approach stem from the same aspect of the model, i.e. the starting point of the analysis is the formal accounts of an existing operator. As a consequence:

- all incurred costs are accounted for (critics of BU models argue that certain cost categories are erroneously ignored);
- TD models manage to avoid disincentives for the SMP operator to invest, since incurred costs are generally allowed to be recovered.

3.30 The starting point of BU models is forward-looking demand data; this is used to dimension, through economic, engineering and accounting principles, an efficient network capable of serving that demand (hence its name). The Gross Replacement Costs ("GRC") of the network is then estimated and annualised. Service/product costs are then estimated by allocating the costs of the different network components to the services/products which use them.

3.31 Given that BU models do not depend as heavily as TD models on complex accounting data, BU models better reflect the choices of a hypothetical, forward-looking efficient operator from both a technical and an operational point of view, as network legacy cost issues are less of a problem than in a TD context. For the same reasons, they are easier to develop and maintain.

3.32 BU models are better suited than TD models to provide an appropriate "Build/Buy signal" to the market since they are more reflective of the conditions of a new entrant in the infrastructure market. This option is therefore more consistent with the regulatory objectives of encouraging infrastructure investment than the TD option is.

ComReg's preliminary view

3.33 ComReg is of the preliminary view that a BU model is likely to be more compatible with the use of current costs as the relevant cost base. The implementation of a BU model is very much synonymous to the theoretical concept of developing a network for an efficient operator and this modelling approach provides the appropriate "Build/Buy" signal to the market.

3.34 ComReg is also of the preliminary view that the results of the BU model should be compared with Eircom's top down cost accounting information and engineering rules, where material and where available. This principle is consistent with the findings of the European Court of Justice ("ECJ") in the *Arcor*[12] case in 2008.

3. LRAIC, LRAIC plus or FDC:

3.35 Another key regulatory decision to consider in determining wholesale regulated charges is the cost accounting approach to adopt. ComReg considers that the 'LRAIC' methodology, the 'LRAIC plus' cost accounting methodology and the fully distributed cost ("FDC") methodology (also known as fully allocated costs) are relevant in this regard.

3.36 ComReg is of the preliminary view that the most appropriate cost accounting approach to adopt is "LRAIC plus". This cost accounting methodology includes all of the average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned, plus an apportionment of joint and common costs. 'LRAIC plus' includes appropriate amounts of variable, fixed and common costs, which is the calculus faced by any operator when deciding to enter or expand. 'LRAIC plus' is a mark up to allow recovery of fixed and common costs typically using an equi-proportionate mark up ("EPMU"). The LRAIC cost accounting methodology does not include a mark-up for joint and common costs.

3.37 The most informative and relevant case in this regard was the Telefonica[13] ruling which set out that

[12] Case C-55/06 Arcor AG & Co. KG v Federal Republic of Germany, dated 24 April 2008.

[13] Paragraph 319, Commission Decision of 4.7.2007 relating to a proceedings under Article 82 of the EC Treaty (Case COMP/38.784 – Wanadoo Espana vs. Telefonica).

'*The long run incremental cost of an individual product refers to the product-specific costs associated with the total volume of output of the relevant product. It is the difference between the total costs incurred by the firm when producing all products, including the individual product under analysis, and the total costs of the firm when the output of the individual product is set equal to zero, holding the output of all other products fixed. Such costs include not only all volume sensitive and fixed costs directly attributatble to the production of the total volume of output of the product in question but also the increase in the common costs that is attributable to this activity'.*

3.38 ComReg is of the view that an alternative to the 'LRAIC plus' cost accounting is FDC. The FDC methodology allocates all the operators' costs from their financial information to all the services, products or regulated operations of the company. ComReg believes that the FDC approach is not appropriate as it is based on historic accounting information. The use of historic costs does not incentivise efficiency. Such inefficiencies are normally the result of legacy issues associated with former state controlled monopoly companies. Historic costs require the calculation of an "efficiency" adjustment which can prove problematic and extremely difficult to quantify. Unlike the historic cost base, the current cost approach also encourages operator efficiency.

3.39 FDC data is also open to a level of subjectivity from a regulated entity. In addition, a FDC methodology can be used only with a TD model and therefore is not comparable with a BU approach.

3.40 For the reasons already set out ComReg is of the preliminary view that a 'LRAIC plus' approach combined with a BU costing model is the most appropriate method to set leased line charges in the market for wholesale terminating segment of leased lines. This approach provides the appropriate "Build/Buy" signal to the market while reflecting the conditions of a new entrant in the infrastructure market. This option is therefore more consistent with the regulatory objectives of encouraging infrastructure investment.

3.41 One point for further consideration is the issue regarding the most appropriate cost base for those areas of the access network where density and demand are low in the country. While ComReg is of the preliminary view that the BU-LRAIC plus cost approach is generally the most appropriate basis to adopt given that its main objective is to incentivise infrastructure investment, ComReg also believes that it is worth considering whether TD historical cost data (on the basis of fully distributed costs) is relevant in those areas of the access network where densities and demand are lower. In ComReg Document No. 10/10[14] (Decision No. 01/10) ComReg has taken a view on the extent of local loop unbundling ("LLU") in Ireland due to factors such as economies of scale. ComReg believes that a proportion of leased lines infrastructure in Ireland may also demonstrate similar economics to that of LLU. This is further discussed below.

[14] ComReg Document No. 10/10 (Decision No. D01/10): Response to Consultation and Final Decision – Local loop unbundling ("LLU") and sub loop unbundling ("SLU") Maximum Monthly Rental Charges, dated 9 February 2010.

ComReg's preliminary view

3.42 ComReg is of the preliminary view that a 'LRAIC plus' is the preferred cost accounting methodology for the setting of wholesale leased line prices in Ireland combined with a BU cost model. It is recommended that this approach is used as the basis of setting charges in the market for wholesale terminating segment of leased lines as it mirrors the price that would prevail in a competitive market and it should send the right "build/buy" signals to new entrants.

3.43 ComReg also believes that consideration should be given to the question of whether top down FDC historical cost data is more relevant for those parts of the access network where densities and demand are lower. ComReg is of the preliminary view that its main regulatory objective should be to incentivise infrastructure investment on the basis of BU-LRAIC plus costs. However, ComReg welcomes views from industry in this regard.

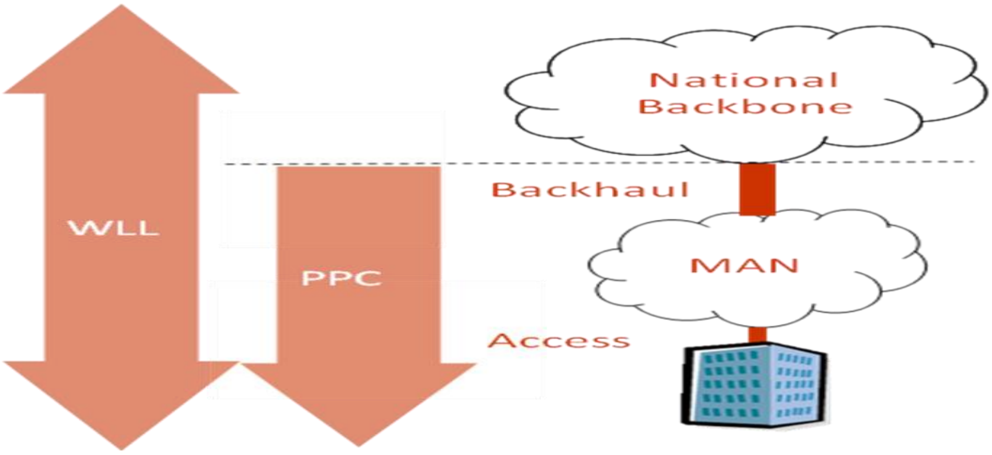
Q. 1. Do you agree that in general a 'LRAIC plus' approach on the basis of a BU model is the most appropriate costing methodology to use for determining the cost oriented wholesale charges for the products, service and associated facilities in the market for wholesale terminating segment of leased lines? Please provide reasons for your response.

Application of the price control obligation in relation to WLLs, PPCs, WEA and wholesale NGN Ethernet leased lines

3.44 In ComReg Document No. 08/103 (Decision No. D06/08) ComReg set out that Eircom were obliged to comply with the obligation of a price control for those products and services in the terminating segment of the wholesale leased lines market. ComReg also set out as part of the decision instrument (section 6.1) that the product and services referred to were irrespective of technology and included products and services provided over Ethernet technology. It also clarified that the obligation included the continued provision of WLLs and PPCs including handover.

3.45 In the context of the Irish market, Eircom is currently mandated to provide two specific products in the market for wholesale terminating segment of leased lines: WLLs and PPCs. WLLs relates to the purchasing of a full end-to-end leased line from the incumbent operator, while PPCs allow an OAO to combine elements of its own network infrastructure with parts of Eircom's network. The illustration below shows the categorisation of the network elements involved in the provision of the two products.

Figure 2: **Network elements for WLL and PPC**



3.46 The importance of WLLs in the Irish market has decreased steadily over the last number of years as a result of take up of PPCs. The reduction in the demand for WLLs and the increase in demand for PPCs are consistent with the alternative usage of infrastructure at the national backbone level where competition is developing but is not yet strong enough to allow OAOs to provide such a service without the need to interconnect to Eircom's national backbone. This is consistent with the market analysis carried out in 2008.

3.47 ComReg has set out below its further specification of the price control obligation in relation to WLLs, PPCs, Wholesale Ethernet Access ("WEA") and wholesale NGN Ethernet leased lines. While Ethernet technology is at a relatively early stage of deployment in Ireland ComReg has set out its preliminary views insofar as possible so that it can seek the views of industry as part of this consultation process.

3.48 The application of the price control obligation is discussed under four headings below:

1. PPCs;
2. Wholesale NGN Ethernet leased lines;
3. Wholesale Ethernet Access ("WEA") leased lines; and
4. WLLs.

1. PPCs:

3.49 As set out in ComReg Document No. 08/103 (Decision No. D6/08), it is ComReg's preliminary view that the general principles of cost orientation will continue to apply in relation to PPCs. It is proposed that a 'LRAIC plus' cost approach through the development of a BU model should be the basis for determining such charges, in line with the analysis carried out in the section above. In ComReg Document No. 08/103 (Decision No. D06/08) it was specified that PPC costs should be calculated on the basis of a pricing model based on FL-LRIC. ComReg would like to clarify that the LRAIC approach proposed in its 2008 decision allowed for the recovery of a reasonable or pertinent proportion of the common costs (e.g. general, administrative and corporate costs) and therefore generally equates to the 'LRAIC plus' approach discussed in detail at the beginning of this section. This pricing approach for PPCs is generally consistent with the costing approach adopted in relation to PPCs as part of the first round of market analysis in 2005. Therefore, no significant changes to the methodology are proposed in this regard.

ComReg's preliminary view

3.50 ComReg is of the preliminary view that the principle of cost orientation should continue to apply to PPCs on the basis of a 'LRAIC plus' cost approach through the development of a BU model.

2. Wholesale NGN Ethernet leased lines:

3.51 Given the early stages of development of NGN infrastructure ComReg have set out below high level preliminary views in relation to the appropriate price control measure for determining cost oriented wholesale NGN Ethernet leased line charges.

3.52 Given the early stages of roll-out of NGN technology, ComReg believes that it will have to take a view on the relevant and appropriate level of costs and volumes relating to wholesale NGN Ethernet leased lines in the absence of disaggregated cost information from Eircom's accounts. In addition, ComReg will also have to take a forward looking view on the demands (traffic) on NGN technology and the level of associated costs over the period of this review. On this basis ComReg is of the preliminary view that the cost modelling approach for wholesale NGN Ethernet leased lines should be based on a somewhat dynamic model where the inputs and assumptions of the model can be amended on a periodic basis, if necessary. ComReg will also have to consider the fact that there are also a number of other players in the market investing in NGN technology and the impact that this may have in the context of the current cost modelling exercise from a wholesale perspective.

3.53 At this stage and similar to the approach proposed in relation to PPCs, it is proposed to use a 'LRAIC plus' approach on the basis of a BU model. The approach proposed will be based on a national network build with roll-out to the main aggregation nodes in the main towns/cities throughout the country.

3.54 ComReg's proposed model inputs and assumptions in relation to wholesale NGN Ethernet leased line products and services are based largely on Eircom's costing information and engineering rules. The details are set out in section 4 below.

ComReg's preliminary view

3.55 ComReg is of the preliminary view that wholesale NGN Ethernet leased line charges should be in line with the principle of cost orientation. ComReg believe that the cost oriented charges should be based on a 'LRAIC plus' approach on the basis of a BU model.

3. Wholesale Ethernet Access ("WEA") leased lines:

3.56 WEA leased lines is similar to PPCs, but is partially delivered using Ethernet technology over Eircom's legacy core transmission network. The WEA product is a national product in scope, delivered primarily over copper with speeds ranging from 512 Kb/s to 10 Mb/s. As with the proposed modelling approach for PPCs and wholesale NGN Ethernet leased lines, it is proposed to use a 'LRAIC plus' approach on the basis of a BU model.

ComReg's preliminary view

3.57 ComReg is of the preliminary view that the cost oriented charges for the WEA leased lines product should be based on a 'LRAIC plus' approach on the basis of a BU model.

4. WLLs:

3.58 The proposed price control in relation to WLL represents a change from that previously adopted in 2005. As set out in the beginning of this section, WLL charges were previously set on the basis of retail minus price control. Historically, OAOs in Ireland have purchased Eircom's WLL services to enable the offering of retail services to end users in areas where their own networks have not been built. The availability of WLLs priced at a discount to retail equivalents has enabled the development of a limited amount of service based competition, and as a consequence efficient OAOs have been able to grow larger customer bases. As the customer bases of OAOs achieves a critical mass, this provides a more stable environment for further infrastructure investments in core networks by OAOs. OAOs have had the opportunity to migrate, and have migrated (to a certain extent), from using Eircom's WLL products to using Eircom's PPC products. In saying that, the price control approach in relation to the market for wholesale terminating segment of leased lines is designed to allow development of a framework that promotes efficient infrastructure investment and encourages OAOs to climb the ladder of investment, for example through the mandated PPC product. This should therefore facilitate effective and sustainable competition.

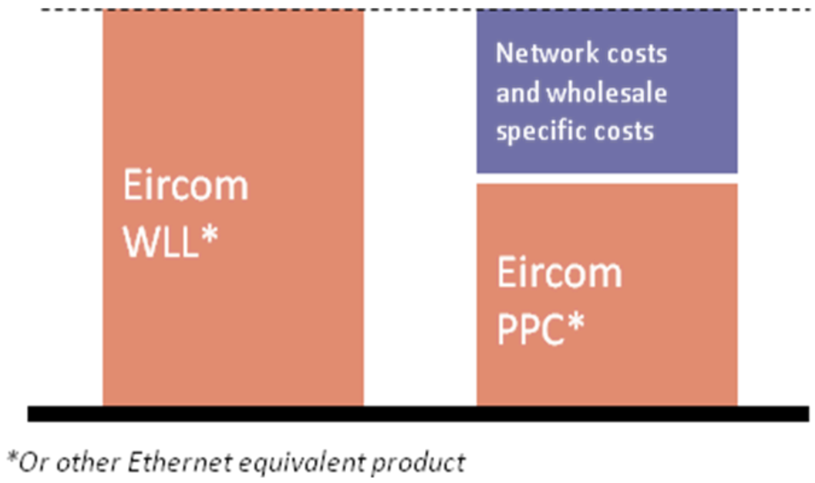
3.59 As determined by ComReg in ComReg Document No. 08/103 (Decision No. D06/08), the retail market for leased lines is competitive and therefore no longer subject to *ex-ante* regulation. As a result the maintenance of retail minus price control in the wholesale market which depends on the publication and monitoring of prices in the retail markets becomes more difficult to implement and enforce. In some cases this may have an impact on Eircom's ability to compete on price where competitors have advance notice of Eircom's pricing.

3.60 With regard to WLLs ComReg is of the preliminary view that the costing methodology for WLLs should ensure the recovery of a reasonable level of costs while consideration is given to the appropriate economic space[15] between PPCs and WLLs. The purpose of an appropriate economic space between the respective pricing of wholesale products is to promote efficient infrastructure competition and

[15] Appropriate space between the prices of Eircom's wholesale products/services would be sufficient to promote sustainable infrastructure competition. It is also a concept supported by the ERG in Common Position 09 (21).

sustainable competition and thus to ensure that there is consistent pricing between wholesale products and that there is no price squeeze to the detriment of end-users. Set out below is a high level illustration of the main cost elements for WLLs and PPCs.

Figure 3: Cost Elements for WLLs and PPCs



3.61 In this regard, ComReg is of the preliminary view that the costs of WLLs should then be estimated using the PPCs costs as their starting point while taking into account the cost elements specific to WLLs which a typical alternative operator would incur to be in a position to compete. These are:

- WLL wholesale network costs; and
- WLL wholesale specific costs.

3.62 As stated earlier in this section, ComReg considered whether WLLs above 10Mb/s generally should be subject to a differentiated price control. ComReg is of the preliminary view that the approach set out in terms of the costing methodology and pricing approach for WLLs relates to all WLLs generally in the market for wholesale terminating segments of leased lines. It should also be clear that WLLs between the urban centres and less than STM1 generally are part of the market for the wholesale terminating segments of leased lines and therefore the proposals set out in terms of the costing methodology and the pricing approach for WLLs also relates to these.

ComReg's preliminary view

3.63 ComReg is of the preliminary view that the costs of WLLs should be estimated using the PPCs costs as their starting point while taking into account the cost elements specific to WLLs i.e. WLL network costs and WLL specific costs. ComReg believes that this will ensure the recovery of a reasonable level of costs while consideration is given to the appropriate economic space between PPCs and WLLs. This is further discussed in detail below.

Q. 2. Do you agree that the WLL charges should be based on the PPC costs,

WLL network costs and WLL specific costs while taking into account the appropriate economic space between PPCs and WLLs? Please provide reasons for your response.

Appropriate economic space between WLLs and PPCs

Overview

3.64 Further to ComReg's preliminary views above in relation to determination of the relevant costs in relation to WLL, ComReg has set out below its preliminary views in relation to the proposed principles in terms of assessing the appropriate economic space between WLLs and PPCs.

3.65 While the preliminary views set out by ComReg below relates to its proposals in relation to the current market legacy products of WLLs and PPCs, the principles consulted upon would also be relevant in terms of any future assessment of the appropriate economic space between any of the wholesale products including NGN Ethernet leased lines products within the market for wholesale terminating segment of the leased lines.

3.66 The approach proposed by ComReg in relation to the appropriate economic space between WLLs and PPCs aims to ensure the promotion of efficient infrastructure investment and encourages OAOs to climb the ladder of investment. This should therefore facilitate effective and sustainable competition. ComReg is of the preliminary view that the margin between WLLs and PPCs must be sufficient so that OAOs have the incentives to buy PPCs rather than WLLs.

3.67 The main areas of consideration in terms of determining the wholesale regulated charges for WLL are as follows:

1. Appropriate operator cost base.
2. Appropriate operator volume base.
3. Appropriate cost standard.
4. Appropriate model type.
5. Product-by-product or portfolio basis.

3.68 Each of the above points is considered below.

1. Appropriate operator cost base

3.69 ComReg has considered the following options with regard to the relevant operator cost base to use:

a) Reasonably efficient operator ("REO") i.e. using the costs of an alternative operator.

b) Equally efficient operator ("EEO") costs.

c) Similarly efficient operator ("SEO") costs.

a) REO:

3.70 While using the costs of an alternative operator may appear to be more in line with the actual experience of a new market entrant it is important to note the lower level of platform competition from OAOs in Ireland to date. While OAOs in some other European jurisdictions may have larger market shares, this is not the case in Ireland. ComReg is of the preliminary view that a key consideration before adopting a REO approach is whether the quality and efficiency of the OAOs data is robust. ComReg believes that it is more prudent to compare the relevant costs with OAO data, where available. The option of REO is not in line with ComReg's practice to date. ComReg is of the preliminary view that REO data is not appropriate given the general issue regarding the robustness of OAOs data. However, ComReg believes that where relevant and appropriate and where OAO's data is available that a comparison should made against it.

b) EEO:

3.71 The EEO approach is for the most part based on the information of the SMP operator i.e. Eircom's unadjusted costs. The EEO approach recognises that in a competitive situation an effective alternative operator will be able to compete only if it is as efficient as the SMP operator in the market. One of the key regulatory objectives of an EEO approach is to encourage efficient investment in infrastructure. However, given the limited extent of competition in the market for wholesale terminating segment of leased lines ComReg is of the preliminary view that the EEO approach is not appropriate and would not achieve its regulatory objective of encouraging infrastructure investment while encouraging OAOs to climb the ladder of investment due to the importance of economies of scale.

c) SEO:

3.72 The SEO approach is for the most part based on the information of the SMP operator but adjusted for economies of scale and scope differences. ComReg is of the preliminary view that Eircom's adjusted costs ('SEO' approach) would provide a reasonable basis upon which to base the costs of a model which should provide the appropriate "build/buy" signal to new entrants. The SEO approach will also ensure that the regulatory objective of encouraging infrastructure investment is achieved while encouraging OAOs to climb the ladder of investment.

3.73 However, in order to ensure that the relevant cost base reflects the costs of an efficient operator it would be necessary to carry out two possible adjustments to Eircom's data as follows:

- Adjustments due to the differences between the operating efficiencies of a new entrant compared to that of Eircom.

- Adjustments due to the different demand volumes faced by a new entrant i.e. economies of scale compared with that of Eircom. This is discussed further below.

3.74 Ofcom in setting a margin squeeze test between bitstream access products chose the SEO approach as it was of the view that "*entrants are likely to benefit less from economies of scope than BT and considers it reasonable to take this into account when setting the margin, given the objective of promoting competition*".

ComReg's preliminary view

3.75 ComReg is of the preliminary view that the SEO approach is the most appropriate operator cost base to use in the context of assessing the appropriate economic space between WLLs and PPCs given that competition has not yet developed in the market. This approach should send the appropriate investment signal to new entrants which should encourage infrastructure investment and encourage OAOs to climb the ladder of investment.

3.76 In addition, ComReg is also of the preliminary view that the SEO approach is relevant in assessing the appropriate economic space between any of the wholesale products in the market for wholesale terminating segments of leased lines i.e. any future assessment of the appropriate economic space between the wholesale NGN Ethernet leased line products.

3.77 The proposed *ex-ante* obligation not to create a margin (price) squeeze is set out in section 6.

2. Appropriate operator volume base

3.78 ComReg is of the view that it can be difficult to assess whether a new entrant should be more (or less) efficient than Eircom in the operation of this part of the network. On one hand, new entrants are not subject to the legacy issues typically inherent in an incumbent operator network and a new entrant can therefore "dimension" their network on the basis of current requirements given current technology and the corresponding network structure. However, new entrants lack the experience of the incumbent and lag behind given their later entry to the market place. Even if it were deemed desirable to adjust Eircom's costs for efficiency, this may be difficult to achieve without a detailed efficiency study. ComReg believes that the core network may be somewhat more efficient than the access network on the basis that the core network is more technology (or equipment) based and has over the past ten years been the subject of more competition than the access network. On the other hand, the access network is more labour intensive given the extent of civil works required and the larger amount of capital required to invest in it. ComReg is of the preliminary view that an adjustment for economies of scale should be carried out in determining the WLL charges.

3.79 The additional WLL network and WLL specific costs, to be accounted for in addition to the 'LRAIC plus' costs for PPCs (based on BU model), present a share of fixed costs that, by definition, do not vary with the amount of WLLs being supplied. These fixed costs would have to be divided by the WLL volumes of traffic in order to obtain the relevant unit costs to be added to the corresponding PPC's unit costs. Using Eircom's volumes may allow for the exact recovery of these costs, but may jeopardise and disincentivise the ability of alternative operators to enter the market by building the relevant infrastructure (they would be able to spread the fixed element of the costs on the basis of smaller volumes).

3.80 On the other hand, using a lower level of volumes may allow for the promotion of infrastructure competition in this segment of the market and a continuation of the current trend of OAOs substituting WLLs for PPCs. The downside of this approach is that Eircom may over-recover its costs, while the overall wholesale costs would be higher. However, a balance may be necessary between the lower unit costs in densely populated areas and the higher unit costs in less densely populated areas.

3.81 In order to address the issue of the relevant volume data to be used ComReg is of the preliminary view that the relevant volumes should be based on one of the following market share options:

- An operator with a 10% market share;
- An operator with a 15% market share; or
- An operator with a 25% market share.

ComReg's preliminary view

3.82 ComReg is of the preliminary view that an adjustment for economies of scale should be carried out to determine the WLL charges. Given the different volume base between Eircom and a typical new entrant ComReg is of the preliminary view that the relevant volume base should be based on an operator with a market share of 25%. However, ComReg welcomes the views of industry in this regard.

3. Appropriate cost standard

3.83 The appropriate cost standard options include the following:

a) Average Variable Cost ("AVC");

b) Average Avoidable Cost ("AAC");

c) LRAIC,

d) 'LRAIC plus'; or

e) Average Total Cost ("ATC").

a) AVC:

3.84 AVC approximates to the variable cost of producing an additional unit of output. AVC does not consider fixed costs, which are the major cost component faced by telecom operators. Therefore, ComReg is of the preliminary view that applying a cost standard on this basis could therefore significantly constrain the potential for entry by efficient entrants and also could lead to a medium to long term exit of operators who cannot sustain an entry strategy that may involve loss leaders for example.

b) AAC:

3.85 ComReg considers that AAC are the short-run avoidable variable and incremental fixed costs of the additional sales of the product in question. The inclusion of fixed costs which would otherwise be avoided, if the incremental output were no longer produced, distinguishes AAC from AVC. Furthermore, the exclusion of a mark-up for overall fixed and common retail costs, distinguishes AAC from ATC. As AAC standard does not include provision for (non-avoidable) fixed costs and common costs in an ex-ante margin squeeze test, it could be argued that this provides the SMP operator with an advantage given the broad range of products and services over which it could conceivably recover such common costs. ComReg believes that the decision to enter the market depends on the expectation that fixed and common costs are going to be recovered; not only additional avoidable costs incurred by the SMP operator. Cost measures such as AAC do not ensure this, as the total full costs of an operator are not covered. ComReg is of the preliminary view, that to apply an AAC cost rule to an ex-ante context could therefore lead to sub-optimal entry conditions with little entry occurring. This would be to the detriment of competition and, in turn, consumers.

c) LRAIC, 'LRAIC plus' or ATC:

3.86 The European Commission in its 'Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty [now Article 102 of the Treaty on the Functioning of the European Union (TFEU)] to abusive exclusionary conduct by dominant undertakings'[16] noted that:

"*Long-run average incremental cost is the average of all the (variable and fixed) costs that a company incurs to produce a particular product. LRAIC and average total cost (ATC) are good proxies for each other, and are the same in the case of single product undertakings. If multi-product undertakings have economies of scope, LRAIC would be below ATC for each individual product, as true common costs are not taken into account in LRAIC. In the case of multiple products, any costs that could have been avoided by not producing a particular product or range are not considered to be common costs. In situations where common costs are significant, they may have to be taken into account when assessing the ability to foreclose equally efficient competitors.*"

3.87 Therefore, as noted by the European Commission above, ComReg does recognise

[16] C (2009) 864 dated 9 February 2009 – at footnote 18.

that LRAIC and ATC are good proxies for each other in the case of single product provision.

3.88 ComReg is of the preliminary view that, given that one of the regulatory objectives is to promote infrastructure competition, the only three options available that ComReg believes is consistent with its objectives in this context are LRAIC, 'LRAIC plus' and ATC. ComReg is of the view that the differences between LRAIC, 'LRAIC plus' and ATC are as follows:

- LRAIC is the average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned over the long-run. This approach does not include an apportionment for common costs.

- 'LRAIC plus' is the average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned over the long-run, plus a mark-up for joint and common costs.

- ATC is the average total cost and includes variable, fixed, joint and common costs based on historical cost data but with no adjustments for efficiencies.

3.89 The LRAIC approach is a forward looking approach but does not allow an operator to recover all of its efficiently incurred costs i.e. its common costs which would be the calculus faced by any operator when deciding to enter or expand. The 'LRAIC plus' approach is a forward looking approach which allows an operator to recover all of its efficiently incurred costs, including an apportionment of joint and common costs. As stated above, this is the calculus faced by any operator when deciding to enter or expand. The ATC approach is based on all of the relevant historical costs but with no adjustments for efficiencies. This approach may encourage inefficient investment by operators.

ComReg's preliminary view

3.90 ComReg is of the preliminary view that the 'LRAIC plus' cost standard is the relevant approach to determine the WLL network costs and WLL specific costs, given that this approach allows any operator to recover all of its efficiently incurred costs including a mark-up for joint and common costs. This is the calculus faced by any operator when deciding to enter or expand.

3.91 In addition, ComReg is also of the preliminary view that the 'LRAIC plus' cost standard is relevant in assessing the appropriate economic space between any of the wholesale leased lines products and services in the market for wholesale terminating segment of leased lines.

4. Appropriate model type

3.92 In carrying out an assessment of the appropriate economic space (or margin squeeze test) there are two model options:

(a) discounted cashflow ("DCF") model (also known as a dynamic model); or
(b) static model.

3.93 An assessment can be conducted either taking the analysis over one period, generally an accounting year i.e. a static model, or estimating all future cash flows of the offer under consideration and discounting them to arrive at their present value i.e. a DCF, or dynamic model.

3.94 ComReg proposes that for the purposes of determining the WLL costs, as described above, the relevant basis is a static model based on an alternative operator's current operating costs for the particular year under review. In addition, ComReg set out a number of options for adjusting for the differences in economies of scale. ComReg proposes that such an adjustment should be based on an operator with a proposed 25% market share but ComReg welcomes the views of industry in this regard. ComReg believes that the overall approach is consistent with the "replicability" principle which allows for the offer under consideration to be replicated by an efficient alternative operator.

3.95 However, ComReg believes that some consideration on a dynamic model may be necessary in relation to any future assessment of the appropriate economic space between any of the other related wholesale NGN Ethernet leased line products in the market for wholesale terminating segments of leased lines. This is further discussed below.

(a) DCF Model:

3.96 The DCF analysis is the method which is more appropriate in assessing specific investment decisions. An investment is deemed to be worthwhile if the sum of the DCFs over its life is positive: this would be consistent with a situation by which the initial cash flows are negative and the subsequent ones are positive and significant enough, given the cost of capital that is used for discounting, to offset the initial negative cashflows.

3.97 An alternative operator that does not have significant capital available to it as an SMP operator is effectively cut out of the market if the margin squeeze is assessed through a DCF model which shows a positive sum of DCFs with substantial initial losses (largely compensated for in the future). Moreover, the DCF model relies on a number of assumptions and forecasts that, within an *ex-ante* approach need be made by the company under scrutiny. In addition, the European Commission also recognised that the DCF model allows for the recovery of initial losses by future profits and therefore a positive net present value ("NPV") may reflect the outcome of the anti-competitive behaviour.

3.98 The main point which warrants consideration in relation to a dynamic model in the context of the current proposed economic space assessment between the other wholesale products i.e. between the wholesale NGN Ethernet leased line products in the market for wholesale terminating segments of leased lines is the likely need to forecast the demand for fixed and mobile broadband and the impact that this may have on the recovery of costs in the context of Ethernet over the next few years. Eircom proposed that additional capacity for backhaul to mobile network operators ("MNOs") should be considered as part of the forward looking cost modelling approach for traffic on the NGN core network. The backhaul for mobile operators is required to deliver next generation mobile broadband services. Eircom believes that given the geographic coverage of the Eircom's NGN network compared with the competing infrastructures a considerable proportion of this traffic may be carried over Eircom's NGN network. ComReg is of the preliminary view that these volumes should be reflected in the cost model in order to account for the NGN investment and to ultimately determine appropriate unit costs.

(b) Static Model:

3.99 The static model is based on assessing the analysis over one period, generally an accounting year. The main advantage of the static model is that it is consistent with the principle of "replicability" whereby an *ex-ante* margin squeeze test valued on a period-by-period basis allows for the offer under consideration to be replicated by an efficient alternative operator.

3.100 Both, ARCEP[17] (French Regulator) and IBPT[18] (Belgian Regulator) have used the static model in their recent decisions regarding Ethernet margin squeeze tests.

3.101 ComReg is of the preliminary view that the static model can easily replicate the DCF approach by taking the cost per month and applying an annuity factor to it.

ComReg's preliminary view

3.102 ComReg is of the preliminary view that a static approach is the preferred approach in the context of determining WLL costs. This approach ensures that the actual operating costs of an alternative operator are taken into account for the particular year under review. ComReg proposes that the adjustment for economies of scale should be based on an alternative operator with a proposed 25% market share but welcomes industry views in this regard. ComReg believes that the static approach also ensures consistency with the "replicability" principle so that the offer under consideration can be replicated by an efficient alternative operator.

3.103 In terms of any future assessment of the appropriate economic space between any of the wholesale NGN Ethernet leased line products in the market for wholesale terminating segment of leased lines, ComReg believes that consideration of a dynamic approach may be more appropriate in the future given the likely need to forecast the demand for mobile broadband and the impact that this may have on the recovery of costs over the next few years. ComReg welcomes industry views in this regard.

5. Product-by-product or portfolio of products

3.104 An assessment of the appropriate economic space (or margin squeeze test) can be conducted either on the single leased line product offered by the SMP operator or on leased line products as a whole i.e. a portfolio of leased line products.

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[17] ARCEP Decision No. 05-0674

[18] IBPT document: 'Le test de ciseaux tarifaires des lignes Louees Ethernet, April 2009.

3.105 Given that the proposed price control obligation in relation to WLLs should ensure the recovery of a reasonable level of costs while consideration is given to the appropriate economic space between PPCs and WLLs, ComReg is of the preliminary view that a product-by-product basis appears more appropriate. In addition, given that technology in the wholesale leased lines market is changing towards NGN Ethernet it seems appropriate that any future assessment of the appropriate economic space between wholesale products in the terminating segment of leased lines market should be based on a product-by-product basis in order to take account of these technology changes.

3.106 There is one main advantage of assessing the appropriate economic space (or margin squeeze test) on every single product: the "replicability" principle is satisfied at the most disaggregated level, giving the alternative operators the freedom not to reproduce the portfolio of the SMP operator in order to compete. This point was deemed to be crucial in the assessment of BNetzA (German Regulator) and Ofcom (UK Regulator) in their specific cases.

3.107 BNetzA stated that: *"It cannot be assumed […] that the regulated company can require competitors to offer particular combined services on the market in order to avoid margin squeeze".* [19]

3.108 Ofcom[20] stated that*: "2.43 […] Ensuring that there is no margin squeeze on any individual product level should avoid an entrant having to replicate BT's product mix in order to be viable. Conducting the margin squeeze at the level of the individual product would also prevent BT from targeting particular competitors."*

3.109 In previous margin squeeze decisions, ComReg has conducted the margin squeeze test on an individual product basis. In ComReg Document No. 06/01[21], (Decision No. D01/06) in the Wholesale Broadband Access ("WBA") case, ComReg justified its choice by the fact that it is not possible to assess the new entrant product portfolio in advance:

> *"Entrants are also likely to offer a portfolio of services and could choose to compete with eircom across a similar product portfolio. However, it seemed premature for ComReg to make judgments about the nature of entry."*

3.110 In ComReg Document No. 07/61[22], (Decision No. D07/61) in the retail narrowband bundles case, ComReg recognised that a portfolio analysis would lead to a lack of flexibility for alternative operators:

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[19] The Federal Network Agency (Bundesnetzagentur) of Germany issued notes on margin squeeze on 14 November 2007.

[20] Direction setting the Margin between IPstream and ATM interconnection Prices; dated 26 August 2004.

[21] Retail minus wholesale price control for the Wholesale Broadband Access Market; 13 January 2006.

[22] Market Analysis: Retail Fixed Narrowband Access Markets; 24 August 2007.

> *"ComReg believes that applying the obligation only to bundles as a whole would make Eircom's own range of bundles, and its pricing across bundles, a reference point, from which it would be difficult for competitors to deviate."*

ComReg's preliminary view

3.111 ComReg is of the preliminary view that a product-by-product basis appears to be the most appropriate approach for now given that the market is not competitive to advocate the portfolio approach. However, given the evolution to Ethernet technology over the coming years ComReg believes that it may be necessary to further assess the options available on a case by case basis in the future. A competitive assessment may be carried out for example where a product is immaterial and is unlikely to have a negative impact on the market.

Q. 3. Do you agree with ComReg's preliminary views, as set out above, on the main principles for the appropriate economic space assessment between WLLs and PPCs? Please provide reasons for your response.

Q. 4. Do you agree with ComReg's preliminary views, as set out above, on the main principles in relation to an assessment of the appropriate economic space between the other related wholesale products i.e. wholesale NGN Ethernet leased line products in the market for wholesale terminating segment of leased lines? Please provide reasons for your response.

4 Proposed Model inputs, engineering rules and assumptions

Introduction

4.1 In the former part of section 3, ComReg proposes that a BU-LRAIC plus model is the most appropriate basis to determine the costs related to the provision of the leased line services in the market for wholesale terminating segment of leased lines.

4.2 Given Eircom's price control obligation, imposed on it subsequent to ComReg Document No. 08/103 (Decision No. D06/08), the proposed modelling approach set out below aims to ensure that the appropriate level of costs are determined in the BU-LRAIC plus model so that Eircom does not over or under recover its efficiently incurred costs in the provision of its leased lines services in the market for wholesale terminating segment of leased lines.

4.3 This section of the document sets out ComReg's preliminary views on the proposed cost model inputs (capital and operating costs), the proposed engineering rules and the proposed assumptions used in the proposed BU-LRAIC plus model of the core and access network in the context of the legacy network products (WLLs and PPCs) and the wholesale NGN Ethernet leased line products.

Background

4.4 Before addressing the key proposed inputs to the model for both the legacy network and for the next generation infrastructure, ComReg has set out below some background information in terms of the infrastructure used to provide the current generation WLLs and PPCs and its views in relation to the provision of future Ethernet products and services over next generation infrastructure.

4.5 As stated previously, leased lines refer to fixed, permanent telecommunications connections providing symmetric capacity between two points. A leased line is permanent, in that capacity is available between the two fixed points. However, capacity could be reserved or shared through the associated network depending on the nature of the leased line. A wholesale leased line may be used as an input to the provision of retail leased line, or may be used as an input to provide other retail services, such as fixed and mobile voice services, or VPNs. A wholesale leased line may also be used by an operator seeking to extend parts of its network without there being a direct corresponding retail service.

4.6 Traditional leased lines products are typically delivered over Synchronous Digital Hierarchy ("SDH") and plesiochronous digital hierarchy ("PDH") transmission layers. Going forward there will be a general move towards delivering leased lines over Ethernet and NGN technologies.

4.7 There are a number of product variants of leased lines in the wholesale terminating segment of leased lines market which are currently offered by Eircom, namely:

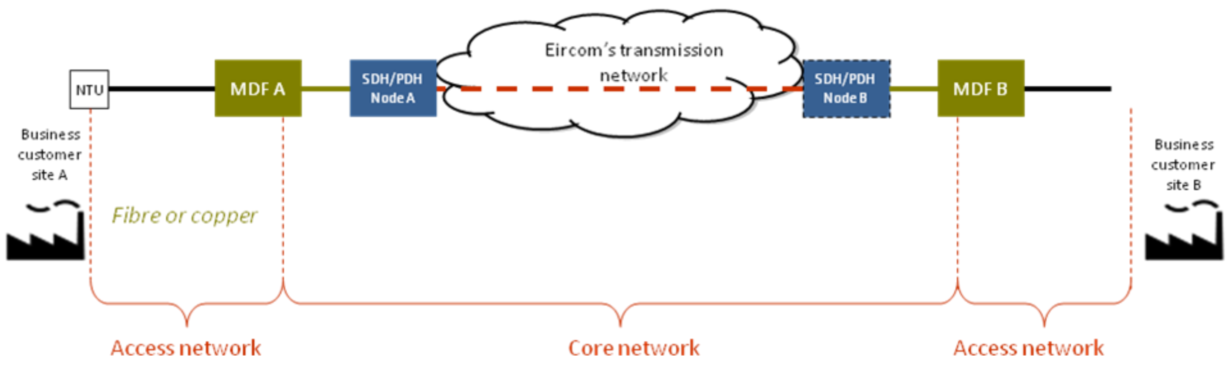
- WLLs;
- PPCs;

- Current Generation Ethernet Leased Line Products:
    - Wholesale Ethernet Access ("WEA") Contended;
    - WEA Uncontended;
    - Wholesale Regional Ethernet Access ("WREA"); and
    - Wholesale Dublin Ethernet Access ("WDEA").

- Wholesale NGN Ethernet leased lines over fibre:
    - Wholesale Symmetrical Ethernet Access ("WSEA"); and
    - Wholesale Ethernet Interconnect Link ("WEIL").

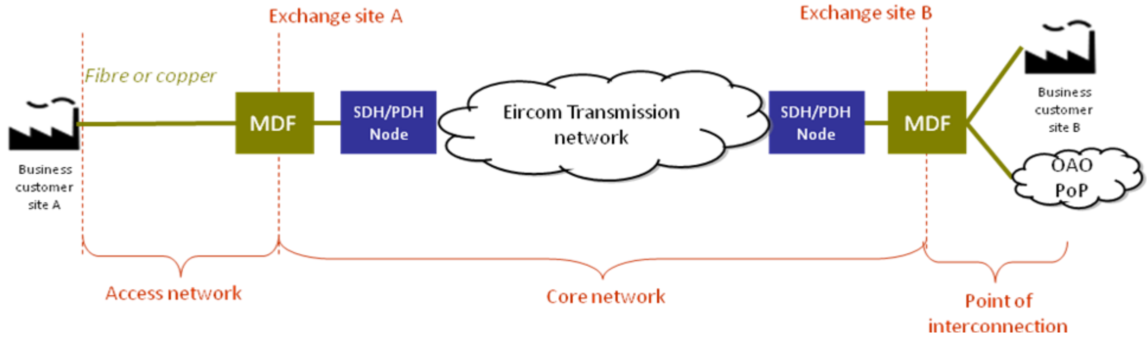
4.8 As stated earlier in the document, the provision of WLLs involves purchasing a full end-to-end leased line from an incumbent operator, while PPCs allows an OAO to combine elements of their own network infrastructure with parts of Eircom's network. A WLL is essentially the same product that Eircom's sells at the retail level. WLLs are national in scope, delivered primarily over copper and fibre with speeds ranging from 64Kb/s upwards.

Figure 4: Provision of a WLL



4.9 A PPC is a generic term used to describe a category of private circuits that terminate at a point of connection between two communication providers networks. The PPC product description includes a transport link which facilitates handover between the trunk and terminating segments. PPCs are therefore wholesale inputs enabling an operator to provide retail and wholesale products using alternative infrastructure and can also be used to aggregate interconnect circuits and termination segments to provide economies of scale for operators. It may also be termed a part leased line. PPCs are national in scope, delivered over copper and fibre with speeds ranging from 64Kb/s and upwards.

Figure 5: Provision of a PPC



4.10 As stated earlier, WLLs and PPCs are delivered primarily over SDH technology using Martis equipment.

4.11 Ethernet is a family of packet -based computer networking technologies initially developed for local area networks ("LANs"). It defines a number of wiring and signalling standards for the Physical Layer of the open systems interconnection ("OSI") network model as well as a common addressing format and media access control at the data link layer. The Ethernet interface standard[23] is now adopted as a method for connecting equipment/networks to Wide Area Networks ("WANs"). The physical media can be wireless, copper or fibre.

4.12 There are a number of contended[24] and [25]uncontended Ethernet products which are delivered over a combination of Eircom's legacy (SDH/PDH) network with "Ethernet Service Units" (ESU's) and various legacy Ethernet technologies. These are as follows:

- Contended Wholesale Ethernet Access ("WEA");
- Uncontended WEA;
- Contended WDEA; and
- Contended WREA.

4.13 All of the above Ethernet wholesale products are interconnect based products, similar to PPCs. The WEA product is a national product in scope, with national pricing, delivered primarily over copper with speeds ranging from 512 Kb/s to 10 Mb/s. The WEA product has contended and uncontended variants. The WDEA service is available in Dublin while the WREA service is available in a selected

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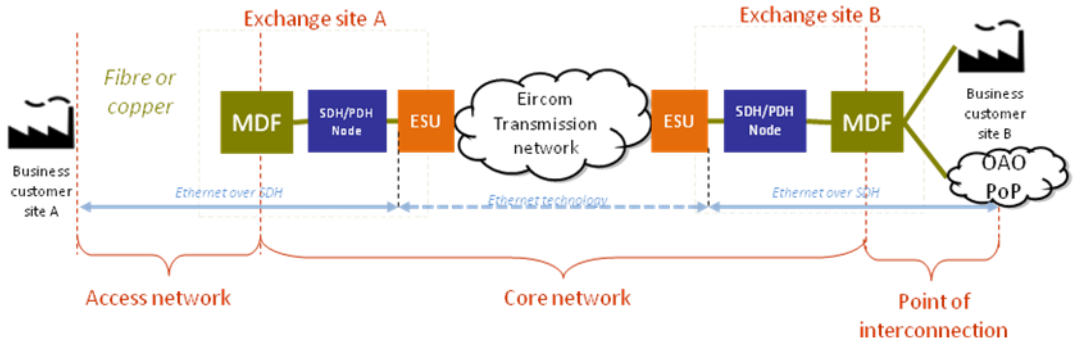
[23] It is defined under standard IEEE 802.3 in the OSI Model Layer 2 "Data Link Media Layer" or TCP/IP Model Layer 2, Data Link (Network Interface) layer.

[24] In simple terms, contention refers to the number of users that may share a link. There is a prescribed level of contention (e.g. 4:1) which would not be suitable for running voice, video, teleconferencing, any high dependent bandwidth related applications or links to mission critical sites.

[25] Uncontended means that the bandwidth you buy is dedicated to you (1:1), up and download speeds are the same and bandwidths can be scaled up to 1Gbps in line with your business needs. An uncontended symmetrical service is very suited to running voice, video, teleconferencing or any high dependent bandwidth-related applications.

number of major urban areas and therefore geographic area specific. The geographical constraint of these services is primarily determined by the fact that they are generally delivered over fibre, with service speeds ranging from 10 Mb/s to 1,000 Mb/s. The WDEA and WREA services will be replaced by wholesale NGN Ethernet leased lines, therefore WDEA and WREA will not be considered as part of this consultation.

Figure 6: Provision of a WEA



4.14 Ethernet products above 10 Mbps (and up to 1,000 Mb/s) ("wholesale NGN Ethernet leased lines") will be provided over Eircom's NGN core network. Wholesale NGN Ethernet leased lines is also an interconnection based product and is also similar to a PPC.

4.15 NGN involves a number of main architectural changes where:

- In the core network, NGN implies a consolidation of several (dedicated or overlay) transport networks each historically built for a different service into one core transport network (based on Internet Protocol ("IP") and Ethernet). It implies amongst the migration of the transport element of various legacy services, both voice and data, (e.g. traditional switched voice services and Virtual Private Network ("VPN")) onto a single transport network. In other words, the assorted networks which deliver these services across the network will be replaced with a single network.
- In the wired access network, NGN implies the migration from the dual system of legacy PSTN voice next to broadband DSLAM's[26] setup in local exchanges in the case of copper, to a converged setup in which the DSLAMs integrate voice ports or VoIP[27], making it possible to remove the voice switching infrastructure from the exchange. Similarly for the fibre access network, many of the current suite of services delivered over the fibre access network would be migrated to a unified NGN access platform, or replaced by new products e.g. Ethernet.

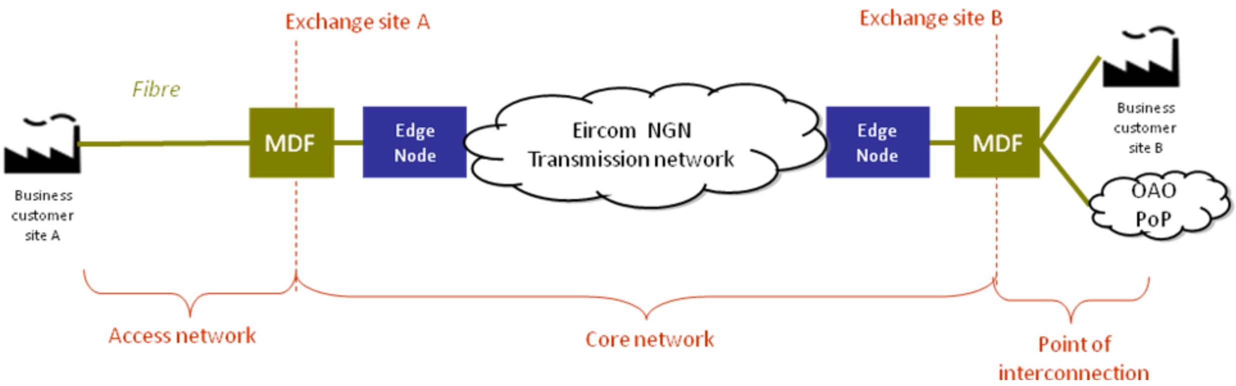
4.16 In an NGN environment, there is a more defined separation between the transport (connectivity) portion of the network and the services that run on top of that

[26] DSLAM –Digital Subscriber Line Access Multiplexer, exchange based equipment used to deliver broadband services, usually over copper to the customer premises.

[27] Voice over Internet Protocol –a technology for delivering telephony type voice over Internet Protocolor DSL.

transport. This means that whenever a provider wants to enable a new service, it can do so by defining it directly at the service layer without considering the transport layer i.e. services are independent of transport details. Increasingly applications, including voice, tend to be independent of the access network (de-layering of network and applications) and will reside more on end-user devices (phone, PC, set-top box), or outside the network, as in cloud computing.

Figure 7: Provision of wholesale NGN Ethernet leased lines



4.17 The wholesale NGN Ethernet leased line product (above 10 Mbps and up to 1,000 Mb/s) considered in this consultation is a NGN Ethernet PPC product. No NGN Ethernet WLL type product has been offered or mandated at this time. However, any such future NGN Ethernet WLL type product would in essence, be a WLL delivered over an NGN core network.

4.18 Currently there are approximately 600 exchange sites throughout the country providing legacy leased line products such as WLLs and PPCs. With the gradual migration to NGN technology there will be approximately 120 sites capable of providing wholesale NGN Ethernet leased line services associated with the initial launch of the fibre based wholesale NGN Ethernet leased line product. These sites will be located predominantly in urban and provincial centres, initially. Please see Eircom's wholesale website at www.eircomwholesale.ie for further details on this.

4.19 Set out in the table below is a summary of leased line products and services in the market for wholesale terminating segments of leased lines that are considered as part of this consultation, as they are currently offered.

Product	Legacy/NGN	Type	Speeds	Coverage
WLL	Legacy	Point to Point	64Kb/s and upwards	National
PPCs	Legacy	Interconnect	64Kb/s to 155Mb/s	National
WEA	Legacy	Interconnect	512Kb/s to 10Mb/s	National
Wholesale NGN Ethernet leased lines	NGN	Interconnect	10Mb/s to 1Gb/s	Currently Limited Nationally

4.20 WLLs and PPCs are currently provided over Eircom's core legacy network and access network. It is envisaged that these legacy products will continue to be provided over the core legacy network. Ethernet products above 10 Mbps (and up to 1,000 Mb/s) will be provided over the NGN core network. In saying that, ComReg is of the preliminary view that the provision of Ethernet products should be modelled on the NGN core network while the legacy WLLs and PPCs should be modelled on the legacy network. This is reflective of Eircom's current network topology. This is discussed further below.

4.21 In order to understand the specific network elements to be included in the BU-LRAIC plus model exercise it is important to note that legacy and NGN leased lines are made up of the following network elements:

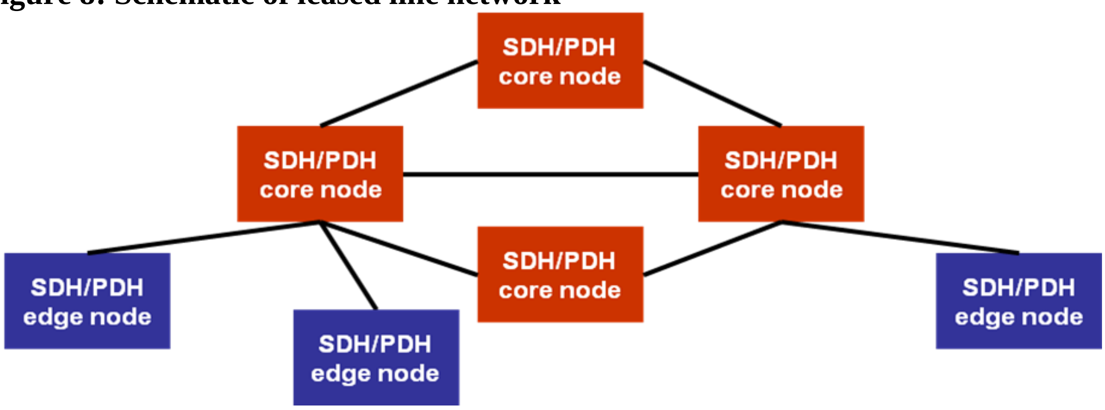
- An access element which runs from the end user to the main distribution frame ("MDF") using copper or fibre links (the MDF is considered to incorporate the optical distribution frame ("ODF")); and
- A core element which runs from the MDF to the core elements of the network.

4.22 The access network costs and the core network costs differ on the basis that the access network costs are mainly civil works costs and are not very traffic dependent while the core network costs relate mainly to active equipment which can be very traffic dependent.

4.23 Wholesale legacy leased lines and wholesale NGN Ethernet leased lines are delivered over the common access network, where legacy leased lines are delivered over both copper and fibre. The legacy core network is made up of switching layer and a transmission layer. The legacy core switching layer is dedicated to the leased line network. The transmission layer of the legacy core system for leased lines generally consists of two hierarchical levels (though in some instances there may be some overlap):

- SDH/PDH edge node for the connection to the access network; and
- SDH/PDH core node for the interconnection of edge nodes.

Figure 8: Schematic of leased line network

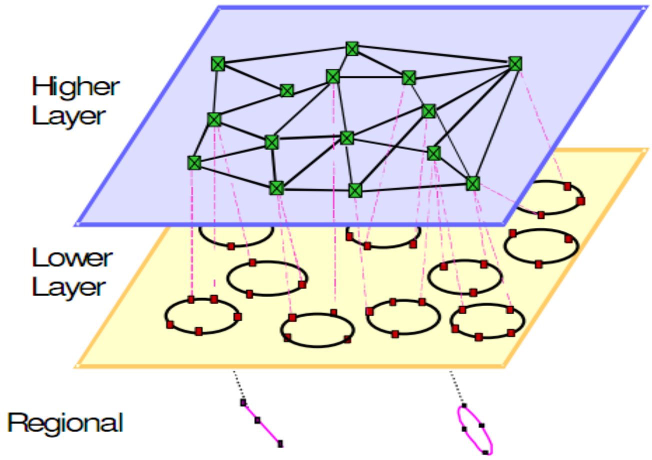


4.24 The transmission layer is shared between different services. The transmission network is made up of three different layers:

- The higher layer, made of SDH meshed links;

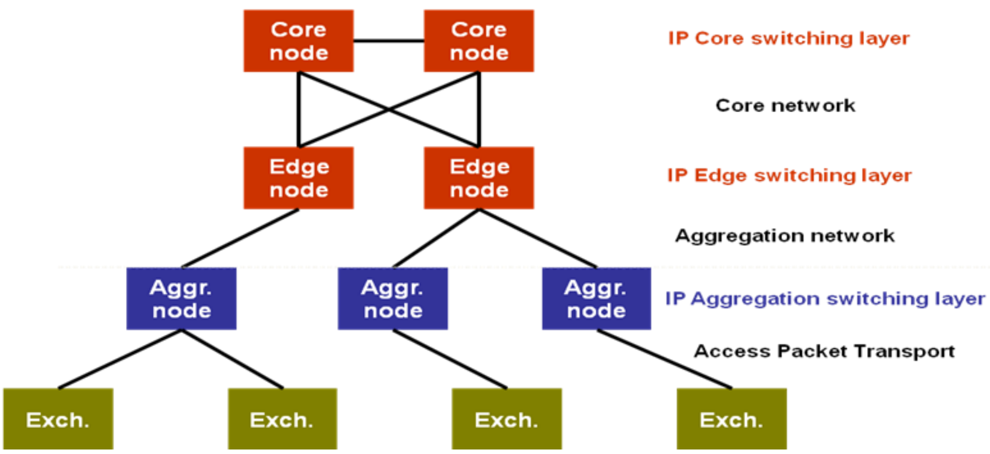
- The lower layer, made of SDH rings; and
- The regional or metro layer, made of SDH rings.

Figure 9: Schematic of typical SDH network



4.25 The NGN core network is made up of NGN nodes and NGN links with WDM capabilities. Unlike the legacy core network switching nodes the NGN nodes are shared between different services.

Figure 10: Overview of Eircom's NGN core network:



Background to cost modelling approach

4.26 In December 2009, ComReg engaged TERA Consultants ("TERA") to develop a cost model to determine the appropriate costs and charges for legacy WLLs and PPCs and wholesale NGN Ethernet leased line products.

4.27 In March 2010, a detailed data request was submitted to Eircom in order to obtain capital cost information, operating cost information and demand requirements relating to both the legacy network and the NGN Ethernet network. The data request also included the engineering rules currently applied by Eircom in the deployment of its legacy network and its NGN network. Basically, the engineering rules are the guidelines or rules used by Eircom in the deployment of its core legacy network and its new NGN network.

4.28 A number of interactive workshops were held with Eircom over the past few months. These workshops allowed ComReg to understand the data provided by Eircom as well as the engineering rules applied by them. Based on the relevance and granularity of the data provided by Eircom it is proposed to use the cost data and engineering rules applied by Eircom as a starting point for the proposed cost model. However, a number of adjustments are deemed necessary to reflect current market costs and the engineering rules of an efficient operator. ComReg also proposes to give due consideration to the model built for the purposes of determining the LLU monthly rental charge (ComReg Document No. 10/10) and the modelling work carried out for voice interconnect purposes.

4.29 In addition, ComReg held a number of interviews with the OAOs in order to understand the current leased lines services purchased and provided by them as well as the related costs thereof.

4.30 A number of site visits were also undertaken by ComReg of the Eircom exchanges so as to allow ComReg to understand how the current legacy network is deployed and to understand how the NGN network will be deployed in Ireland.

4.31 Given that a significant amount of the information obtained in relation to the proposed cost model is commercially sensitive, ComReg is limited in terms of the data consulted upon in this document. However, the main principles and parameters applied within the proposed cost model are set out below.

4.32 The proposed cost modelling exercise involves a cost model for the entire legacy network products and services and a cost model for the entire wholesale NGN Ethernet leased line products and services. As set out in section 3 above, ComReg is of the preliminary view that the costing methodology for WLLs should ensure the recovery of a reasonable level of costs while consideration is given to the appropriate economic space between PPCs and WLLs. In this regard, ComReg is of the preliminary view that the costs of WLLs should then be estimated using the PPCs costs as their starting point while taking into account the cost elements specific to WLLs. These are:

- WLL network costs; and
- WLL specific costs.

4.33 The details of the proposed margin squeeze test between WLLs and PPCs is set out in detail in section 3 above.

4.34 In relation to PPCs and as set out in section 3 above, it is ComReg's preliminary view that the 'LRAIC plus' approach on the basis of a BU model should continue to apply in relation to PPCs as well as for the WEA product. In modelling the PPC costs ComReg has taken into account the BU model which was developed for voice interconnection and the LLU access model (ComReg Document No. 10/10).

4.35 ComReg also propose that the 'LRAIC plus' approach on the basis of a BU model should apply in relation to wholesale NGN Ethernet leased line products going forward. On 23 March 2010, Eircom notified industry and ComReg, by way of publication on its wholesale website, of its intention to launch its wholesale NGN Ethernet leased line product set on 23 June 2010. Eircom also published all the relevant documentation on its wholesale website including the proposed prices for these products. Since 23 March the proposed modelling approach for wholesale NGN Ethernet leased lines has been prioritised and has been the subject of an intensive review by Eircom, ComReg and its consultants, TERA. Significant discussions have also taken place at the Leased Lines Forum between ComReg, Eircom and industry. Given that Eircom and OAOs are currently investing in or about to invest in NGN technology, ComReg believes that a number of important points require consideration by industry before a final decision can be taken by ComReg.

4.36 Set out below are the main areas in relation to the modelling approach for the legacy network product set and the NGN network product set for the leased lines in the market for wholesale terminating segment of leased lines.

Proposed cost modelling approach to be adopted

4.37 The main areas discussed below are as follows:

1. Proposed modelling approach specific to the leased lines access network (legacy and wholesale NGN Ethernet leased lines):

   a) Possible modelling approaches for the leased lines access network;
   b) Location of fibre access leased lines;
   c) Fibre access volumes;
   d) Civil works;
   e) Allocation of civil works costs between fibre and copper access network; and
   f) Operating Costs.

2. Proposed modelling approach specific to the leased lines legacy core network:

   a) Possible modelling approaches for the leased lines legacy core network;
   b) Traffic volumes on core legacy network;
   c) Allocation of legacy core network costs; and
   d) Operating Costs.

3. Proposed modelling approach specific to the leased lines NGN core network:

   a) Possible modelling approaches for the leased lines NGN core network;
   b) Traffic volumes on NGN core network;
   c) Capacity requirements for voice traffic on the NGN core network;
   d) Allocation of NGN core network costs; and
   e) Operating Costs.

4. Proposed modelling approach specific to WEA:

a) Possible modelling approaches for WEA.

5. Proposed modelling principles common to both the access and core networks:

a) Tilted annuities and price trends;
b) Asset Lives;
c) Allocation of common assets between the core and access networks;
d) Allocation of civil works costs between the core and access networks; and
e) Allocation of fibre cable costs between the core and access networks.

1. Proposed modelling approach specific to the leased lines access network:

(a) Possible modelling approaches for the leased lines access network:

4.38 ComReg is of the preliminary view that there are three possible approaches for modelling the access network for leased lines;

- Modelling of a pure copper access network;
- Modelling of a mix of a copper access network and a fibre access network; or
- Modelling of a pure fibre access network.

4.39 Currently, the predominant technology in the access network is copper with a very limited amount of fibre access lines deployed for high speed leased lines. ComReg is of the preliminary view that even if the number of fibre access active lines were to increase, it would not represent a significant number of lines in the medium to long-term i.e. over the next 5 to 10 years. The main reasons are due to the high level of investment required and the fact that the copper network meets the vast majority of customer needs. On this basis ComReg is of the preliminary view that the most reasonable and appropriate approach to take is to model a mix of the copper access network and the fibre access network as this will reflect the reality and the gradual migration to NGN over the next few years.

4.40 ComReg is of the preliminary view that the model previously built for the purposes of determining the monthly rental charge for LLU (ComReg Document No. 10/10 (Decision No. D01/10)) is also appropriate in the current context as the LLU model provides for the cost of all copper pairs, including those used for leased lines. Therefore the main principles adopted within the LLU access model are also relevant in the context of the leased lines model. However, there are a number of principles specific to the provision of leased lines which are discussed below.

(b) Location of fibre access leased lines:

4.41 Eircom provided ComReg with data in relation to the current fibre access leased lines located in its Main Distribution Frame ("MDF") sites. While the number of access fibre leased lines currently in Eircom's network varies between Eircom's MDF sites, the majority of the fibre access leased lines are in the larger MDFs. It is proposed that the model will deploy the fibre access leased lines to reflect the location of where they are currently located in Eircom's network.

4.42 ComReg is of the preliminary view that it is also necessary to assess the likely location of any new access fibre leased lines going forward. ComReg believes that in some cases fibre access leased lines will replace the current copper leased lines. As a result ComReg proposes to account for this in the model by taking account of the current ratio of fibre access leased lines to the total leased lines (copper and fibre) at the current MDFs.

4.43 Further to the assessment of the current location of the fibre access lines in Eircom's network an assessment was carried out to see if the fibre access lines were located inside a housing area as opposed to isolated houses. In ComReg Document No. 09/39[28], ComReg set out that a housing area represented concentrations of residential and commercial buildings. Some of the housing areas in Ireland were small while others were large. It was also noted that a housing area may contain multiple main distribution frames ("MDFs"). On the other hand an isolated house is a 'one off' house or a very small cluster of houses i.e. most common in rural parts of the country.

4.44 Based on the analysis carried out by ComReg in relation to the location of the fibre access lines it appears that the large majority of fibre access leased lines are inside the housing areas. ComReg therefore proposes to assume that all access fibre leased lines are located inside the housing areas in the model.

(c) Fibre access volumes:

4.45 In order to take a view on the evolution of fibre access leased line volumes over the next few years, ComReg has assessed the data provided by Eircom in relation to its forecasted volumes for the retail leased lines product set and the forecasts for each of the wholesale products (split between copper and fibre).

4.46 Eircom proposed that in addition to expected growth of fixed broadband that capacity for backhaul to MNOs should be considered as part of the forward looking cost modelling approach for traffic on the NGN core network. The backhaul for mobile operators is required to deliver next generation mobile broadband services. Eircom believes that where there is no competing infrastructure a considerable proportion of this traffic may be carried over Eircom's NGN network given the geographic coverage of it. ComReg is of the preliminary view that these volumes should be reflected in the cost model in order to account for the NGN investment and to ultimately determine appropriate unit costs.

4.47 ComReg is of the preliminary view that an additional point worth consideration is the fact that volumes may increase given that operators can obtain higher bandwidth

[28] Response to Consultation Document No. 08/56 and Further Consultation on local loop unbundling ('LLU') and sub loop unbundling ('SLU') monthly rental charges, dated 8 May 2009.

services at a lower cost over a NGN network. ComReg believes that there is a correlation between the availability of bandwidths and the relative increase in demand for services over Eircom's NGN network. ComReg believes that this should be reflected in the model to ensure that forward looking unit costs and prices are reflective of current and future market condition. However, given the potential changes in demand in the future ComReg proposes to keep these assumptions under review.

4.48 ComReg is also of the preliminary view that the number of access fibre lines will increase slightly over the next three years. Based on information provided by Eircom and which was reviewed by ComReg and TERA, it is proposed that the access fibre lines will increase annually by approximately 3.3% during the proposed price control period.

(d) Civil works:

4.49 ComReg is of the preliminary view that where fibre access leased lines are deployed, the trench will have to accommodate both copper cables and fibre cables. While fibre cables can be deployed in the same trenches as in the copper network, these trenches may not have a sufficient number of ducts to carry the fibre cables. As a consequence, trenches with a higher number of ducts may be required.

4.50 ComReg is of the preliminary view that there are two ways of deploying fibre cables to the copper network already in place.

- In some parts of the network there are enough spare bores in the trench deployed in the copper network to accommodate fibre cable; and
- In some parts of the network there are not enough spare bores in the trench deployed in the copper network to accommodate fibre cable.

4.51 ComReg proposes to consider the spare capacity of the bores in the trench for fibre access and will adopt the most appropriate way depending on the capacity of the bores for the particular part of the network being modelled.

(e) Allocation of civil works costs between fibre access and copper access network:

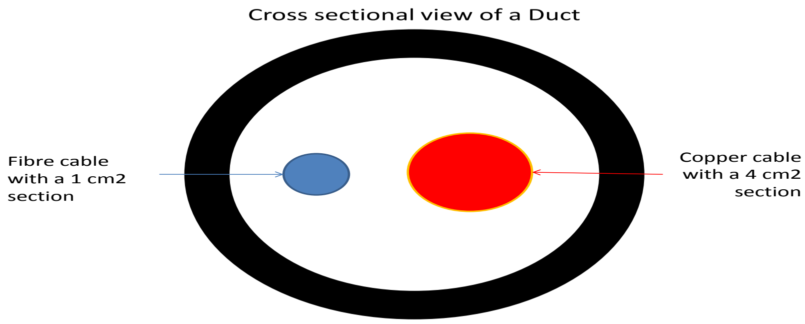
4.52 ComReg is of the preliminary view that there are three options available in terms of allocation of civil works costs between access fibre and access copper. The options are as follows:

- Option 1: Incremental Costs:
  The costs allocated to the fibre network correspond to the difference between the civil works costs of a network for fibre and copper and the civil works costs of a network for copper only i.e. the civil works costs determined in the LLU access model. For example, if the trenches deployed by the copper model have sufficient space for the fibre cable then the incremental cost is zero.

- Option 2: Allocation based on the cable surface:
  The civil works costs are allocated based on the cross sectional area of cable in the ducts. For example, if the fibre cable cross-sectional area is 1cm^2 and

the cross-sectional area of the copper cables is $4cm^2$ the allocation key for fibre will be 20% (= 1/(1+4)).

Figure 11: Illustration of cable surface allocation



- Option 3: Allocation based on the number of cables:
  This approach is based on the number of cables within a given section of civil works and allocating the costs between copper and fibre on the basis of the number of cables in each.

4.53 ComReg is of the preliminary view that option 1 (incremental costs) may prevent double counting of costs in the copper network. However, this option may lead to lower prices given that a significant amount of the civil works costs are not accounted for. This option may also lead to the eviction of competitors from the market for those operators who have in recent years invested in their network or for those who intend investing in the future. Hence, this option may dis-incentivise further investment by other operators.

4.54 Option 2 corresponds with the actual dimensioning rules in Eircom's network. This option is a reasonable balance in terms of ensuring that there is no over-recovery of costs while competitors are not evicted from the market.

4.55 ComReg is of the preliminary view that option 3 could lead to double counting of costs with the copper network.

4.56 ComReg is of the preliminary view that the cross sectional approach (option 2) is the most pragmatic and balanced approach and is reflective of the current dimensioning rules in Eircom's network. ComReg believes that the cost driver for the ducts and the trenches is the section of cable that needs to be laid in the ground and not the number of cables: if the section of the cables that need to laid is too large then other ducts may be required. On the contrary, if it is necessary to lay a significant number of cables down, it will not necessarily mean that many ducts are required as it will depend on the section of all these cables. This means that option 3 is less reflective of the cost drivers and is therefore less relevant from an economic point of view.

(f) Operating Costs:

4.57 The appropriate level of operating costs for the access network was determined by

ComReg as part of the LLU pricing decision earlier this year. These costs were determined on the basis of a BU-LRAIC model and the model enabled ComReg to calculate a level of operating costs per line for each MDF area depending on the level of the line fault index ("LFI").

4.58 ComReg is of the preliminary view that fibre cables are less susceptible to the same level of faults as copper cables. The LFI in the LLU pricing decision was based on all copper lines rather than fibre lines. However, given that fibre cables would be based in less rural areas and it would be assumed that rural areas may have a higher instance of faults where overhead infrastructure is more prevalent, ComReg believes that a lower level of LFI may be more appropriate in the context of leased lines. Similar to the proposal in relation to the consultation on the appropriate price control for the WBA market[29], ComReg proposes that an assumed fault rate of 5% (average faults per number of lines in the year) may be more appropriate in relation to the fibre access lines in the context of leased lines.

Q. 5. Do you agree with ComReg's preliminary views, as set out above, in relation to the modelling approach adopted for the leased lines access network? Please provide reasons for your response.

2. Proposed modelling approach specific to the leased lines legacy core network:

(a) Proposed modelling approaches for the leased lines legacy core network:

4.59 ComReg is of the preliminary view that there are three possible approaches for modelling the core network for leased lines:

- Modelling a pure legacy core network;
- Modelling a legacy core network with some NGN deployment; or
- Modelling a full NGN core network.

4.60 ComReg is of the preliminary view that the provision of legacy PPCs and WLLs should be based on a pure legacy core network model whereas the provision of Ethernet technology should be modelled on a full NGN core network. ComReg is of the view that the core network model for leased line should be implemented using a 'scorched node' approach, which, to the extent practicable and relevant, reflects Eircom's actual network topology.

4.61 The legacy core network for leased lines includes two main elements, a switching layer and a SDH transmission layer. The switching layer of the legacy core network consists of two hierarchical levels:

- A SDH/ PDH edge node for the connection of the access network;
- A SDH/PDH core node for the interconnection of edge nodes.

[29] ComReg Document No. 10/56: Wholesale Broadband Access: Consultation and Draft Decision on appropriate price control; dated 15 July 2010.

4.62 These nodes are completely (100%) dedicated to the leased lines network. These nodes can be used differently according to the topology of the leased line end users.

4.63 As set out in the background information above, the transmission network in the legacy core network consists of three different layers:

- The higher layer, consisting of SDH meshed links;
- The lower layer, consisting of SDH rings; and
- The regional layer, consisting of SDH rings.

All of these transmission links are shared between the different services i.e. voice, broadband and leased lines.

(b) Traffic volumes on core legacy network:

4.64 In order to determine the leased line traffic on the core legacy network ComReg requested Eircom to provide data on the leased lines and Ethernet links operated in its current network. As a starting point, ComReg proposes to take the current level of traffic on Eircom's core legacy network and continue to use these traffic volumes as a basis for the traffic on the legacy core network. ComReg welcomes industry views on this proposal.

(c) Allocation of legacy core network costs:

4.65 ComReg is of the preliminary view that the switching costs of the legacy core network should be calculated based on the total costs of the node, the traffic solely for leased lines and the associated routing factors.

4.66 ComReg proposes that for each level of the transmission layer, it will be possible to calculate the SDH transmission costs in terms of usage per service and the length of the network i.e. €/kbps/km. It is proposed that the transmission costs will be shared between the different services which use the transmission layer, i.e. voice, broadband and leased lines. For each service, the busy-hour demand, which is used to dimension the network will be calculated. For voice services, the busy hour traffic will be calculated using typical engineering rules (for example on the basis of a call blocking probability). For broadband services, the busy hour traffic will be calculated using the average bandwidth requirement per broadband line at the busiest hour of the year. For leased lines, the busy hour traffic will be the speed of existing leased lines for uncontended leased lines and the speed multiplied by the contention ratio for contented leased lines. The total busy hour traffic will assist in determining the transmission equipment required at the different levels of the network and the total cost associated with it. The cost of the SDH transmission network will then be allocated to the different services (voice, broadband, leased lines) based on the busy hour traffic of each service at the different levels of the network (capacity based allocation). ComReg welcomes the views of industry on what it deems as a reasonable level of busy hour demand based on their experience on their networks.

(d) Operating costs:

4.67 ComReg and Eircom are currently assessing the appropriate level of operating costs that are relevant to the legacy core network. ComReg proposes to use the operating cost data from Eircom as a starting point. However, a number of adjustments are deemed necessary to reflect current market costs and the engineering rules of an efficient operator.

Q. 6. Do you agree with ComReg's preliminary views, as set out above, in relation to the modelling approach adopted for the leased lines legacy core network? Please provide reasons for your response.

3. Proposed modelling approach specific to the leased lines NGN core network:

(a) Proposed modelling approaches for the leased lines NGN core network:

4.68 ComReg is of the preliminary view that there are three possible approaches for modelling the core network for leased lines:

- Modelling a pure legacy core network;
- Modelling a legacy core network with some NGN deployment; or
- Modelling a full NGN core network.

4.69 ComReg is of the preliminary view that as Eircom is currently deploying NGN technology the modelling approach for the core network should to some extent reflect it. In addition, NGN Ethernet is more efficient to carry traffic.

4.70 ComReg is of the preliminary view that the provision of legacy PPCs and WLLs should be based on a pure legacy core network model whereas the provision of Ethernet technology should be modelled on a full NGN core network. ComReg is of the view that the core network model for leased line should be implemented using a 'scorched node' approach, which, to the extent practicable and relevant, reflects Eircom's actual network topology. In this regard, ComReg has considered the following points with regard to NGN:

- The nodes (exchange sites, aggregation nodes, IP Edge nodes, core nodes) remain at the same locations as they are currently;
- Same regions as Eircom's NGN network were considered;
- Same systems as Eircom's wavelength division multiplexing ("WDM") network were considered.

(b) Traffic volumes on the NGN core network:

4.71 In order to determine the leased line traffic on the core network ComReg requested Eircom to provide data on the leased lines and Ethernet links operated in its network. As a starting point, ComReg proposes to take the current level of traffic on Eircom's core legacy network and to use these traffic volumes as a basis for the traffic on the NGN core network. Eircom provided data in relation to the two extremity exchange sites of the link, the commercial speed of the link and the contention rate. In order to take account of the potential increase in volumes as a result of migration to NGN, a number of points for consideration are set out below.

4.72 Eircom proposed that in addition to expected fixed broadband that capacity for backhaul to mobile network operators ("MNOs") should be considered as part of the forward looking cost modelling approach for traffic on the NGN core network. The backhaul for mobile operators is required to deliver next generation mobile broadband services. Eircom believes that where there is no competing infrastructure that a considerable proportion of this traffic may be carried over Eircom's NGN network given the geographic coverage of its network. ComReg is of the preliminary view that these volumes should be reflected in the cost model in order to account for the NGN investment and to ultimately determine appropriate unit costs.

4.73 ComReg is of the preliminary view that an additional point worth consideration is the fact that volumes may increase given that operators can obtain higher bandwidth services at a lower cost over a NGN network. ComReg believes that there is a correlation between the availability of bandwidths and the relative increase in demand for services over Eircom's NGN network and this should be reflected in the model to ensure that forward looking unit costs and prices are reflective of current and future market conditions. Given the potential changes in demand ComReg will keep these assumptions under review.

4.74 Similar to the approach taken in relation to the forward looking volume of leased line traffic on the access network, ComReg also proposes to take the preliminary view that the volume of traffic generated by leased lines will increase slightly over the next three years with an annual increase of approximately 3.3% during the proposed price control period. This data is based on forecasted information from Eircom which has been reviewed by ComReg and TERA.

Q. 7. Do you agree with ComReg's proposed approach regarding the traffic volumes for the NGN core network for the next three years? Please provide reasons for your response.

(c) Capacity requirements for voice traffic on the NGN core network:

4.75 As part of the modelling exercise ComReg has also assessed the capacity requirement of the voice traffic in a SDH network. ComReg is of the preliminary view that the voice services will for now remain on the legacy network and the costs of the legacy network will be allocated between the various services on it i.e. voice, broadband and legacy leased lines.

(d) Allocation of NGN core network costs:

4.76 ComReg proposes that the model will calculate the cost of the different parts of the NGN core network for each of the services that use it. This will include the cost relating to the following:

- The costs of nodes and WDM equipment relating to both leased lines and broadband services; and
- The cost of trenches and fibre relating to leased lines, broadband and voice services.

4.77 ComReg proposes to allocate NGN core network costs to the different services i.e. leased lines, broadband and voice based on the dimensioning capacity i.e. the peak traffic. In the case of traffic related products, the resulting annual demand is converted to busy-hour demand, which is used to dimension the network. The busy-hour demand grows with the evolution of usage towards more bandwidth intensive services. Eircom provided their forecasts of average bandwidth requirement per broadband line at the busiest hour of the year. This forecasted level of busy-hour demand is considered in the model. The peak traffic rate has also been considered as part of the WBA pricing review to ensure consistency of approach between this review and the WBA price control review. ComReg welcomes the views of industry on what it deems as a reasonable level of busy hour demand based on their experience on their networks.

4.78 In addition to the above, ComReg intends to monitor any potential new services that may be introduced in the future to ensure that all services are allocated its appropriate share of NGN costs.

(e) Operating costs:

4.79 ComReg and Eircom are currently assessing the appropriate level of operating costs that are relevant to an NGN core network. It is difficult to determine the level of operating costs given that the NGN network is not yet fully built. However, ComReg is of the preliminary view that while the level of operating costs for an NGN network may be higher initially, it will reduce overtime and the operating costs of a NGN network should be lower than the operating costs levels of the core legacy network.

Q. 8. Do you agree with ComReg's preliminary views, as set out above, in relation to the modelling approach adopted for the leased lines NGN core network? Please provide reasons for your response.

4. Proposed modelling approach specific to WEA:

(a) Possible modelling approaches for WEA:

4.80 As discussed above, the WEA product is a national product in scope, with national pricing, delivered primarily over copper with speeds ranging from 512 Kb/s to 10 Mb/s. WEA is similar to PPCs, but is partially delivered using Ethernet technology over Eircom's core transmission network. It is proposed that the modelling approach for the WEA product is a 'LRAIC plus' approach on the basis of a BU model.

4.81 However, as this is a legacy Ethernet product consideration should be given to the type of core technology to be employed, either:

- A legacy core network, using Martis switching layer and SDH transmission layer, which also incorporates Ethernet service units ("ESUs"). This would be consistent with the proposed approach for PPCs; or

- An NGN core network, using IP switching layer. This would be consistent with modern equivalent assets ("MEA") principles and a signal to promote (< 10Mb/s) services over NGN.

4.82 ComReg is of the preliminary view that in order to be consistent with the MEA concept and the approach proposed for wholesale NGN Ethernet leased lines (discussed below), the WEA product should be based on an NGN core network model.

> **Q. 9. Do you agree with ComReg's preliminary views, as set out above, in relation to the modelling approach adopted for the WEA product? Please provide reasons for your response.**

5. Proposed modelling principles common to both the access and core networks:

(a) Tilted annuities and price trends:

4.83 In regulatory cost models and in accounting systems, investments are depreciated to derive annual depreciation charges of the assets. There are several types of depreciation formulas that can be used to derive annual depreciation charges, such as straight line depreciation which is normally used in accounting systems. However, in regulatory cost models, and especially in BU models, the preferred methodology is often the "tilted annuity formula" because of the way that this method accounts for future prices. This approach is chosen by many NRAs in Europe including ARCEP (France), NITA (Denmark), BIPT (Belgium) and PTS (Sweden). In this context, the tilted annuity formula is a formula which calculates for a given asset an annuity which covers both the associated cost of capital and the depreciation charge for each year of the economic life of the asset.

4.84 The timing of investments does have an important role to play in providing Eircom and the OAOs with efficient incentives for their investment decisions. Where prices of assets are rising, OAOs should recognise this in their investment decisions and therefore, purchase assets earlier than if the price was constant (because the more time left before investing, the greater the cost of that investment). Similarly, where prices are falling, OAOs should delay their investments to take advantage of the lower prices that will be available to them in the future. The application of tilts to regulated prices has a similar effect, thereby providing OAOs with efficient incentives for the timing of their investments. This provides the appropriate "make" or "buy" signals for both Eircom and OAOs. ComReg is of the preliminary view that this is a reasonable method of ensuring the appropriate level of cost recovery, as well as providing efficient investment incentives, over the timeframe of the review to industry.

4.85 An additional element to consider in setting the depreciation profile, (tilted annuity formula) is the timing of the revenue receipts after an investment has been made.

4.86 In building BU-LRAIC models NRAs generally assume that the network is built almost instantaneously in that revenues can be received shortly after the investment cost is incurred (certainly within one year).

4.87 ComReg considers that three options/concepts are relevant in determining the appropriate payment terms which are outlined below.

- **Option 1** assumes that revenues are realised the same time as investments are made.
- **Option 2** assumes that revenues are realised approximately 6 months after the investments are made. This was the approach taken by ComReg in its LLU pricing decision (ComReg Document No. 10/10) earlier this year.
- **Option 3** assumes that revenues are realised approximately 12 months after the investments are made.

4.88 ComReg is of the preliminary view that the payment of contractors' invoices, the operational launch of the network and the generation of revenues, generally occur at approximately the same time. However, in order to be conservative, ComReg considers a six month time lag between the out payments of the investment and revenue generation strikes a reasonable balance between assuming simultaneous recovery and recovery in periods in excess of one year or more.

4.89 Similar to the formula applied in the context of LLU (ComReg Document No. 10/10 (Decision No. D01/10), ComReg proposes to use the annuity formula set out below. This formula assumes that revenues are realised approximately 6 months after the investments are made.

$$A_1 = \mathrm{I} \times \frac{1}{\sqrt{1+\mathrm{w}}} \times \frac{w-P}{1-\left(\frac{(1+P)}{(1+w)}\right)^N}$$

Note:

- *A1, the annual charge in year one (used for price calculation)*
- *I, the investment value of the asset*
- *w, the cost of capital (parameter)*
- *P, the annual change in the price of an asset*
- *N, the useful life of the asset.*

4.90 In order to implement the tilted annuities, it is necessary for ComReg to consider the future price trends for the relevant leased line assets on both the core and access networks. In doing so, ComReg considers whether it is appropriate to focus on long-term price trends or on short-term price trends.

4.91 For the access network, ComReg proposes to use the price trends from the LLU access model for trench costs and duct costs. These price trends were based on long-term trends over a 12 year period. The details of the price trends in this regard are set out in ComReg Document No. 10/10, (Decision No. D01/10). The price trends applied in the context of the access network for leased lines ensure that a consistent approach is applied in relation to trench and duct. In relation to those assets relevant to fibre access, ComReg proposes to assess the changes in asset prices over a shorter period i.e. over a period of approximately 3 years for the optical distribution frame ("ODF"). In terms of the network terminating unit ("NTU") ComReg proposes to use the assumptions provided by Eircom. ComReg is of the preliminary view that given the rather dynamic changes in the prices of equipment, as opposed to the somewhat more static changes in civil costs, an assessment of prices over the short term is more appropriate for equipment type assets.

4.92 With regard to the network assets relevant to the provision of leased lines services over the core network, ComReg proposes to use the same approach as that set out above in relation to the NTU and the ODF. The assets on the core network are predominantly equipment. Given the dynamic nature of the price changes for equipment ComReg is of the preliminary view that an assessment of prices over the short-term is more appropriate. In addition, the equipment assets on the core network, particularly in relation to NGN technology, are only available to the marketplace in the last number of years so the availability of assets prices for the equipment at hand is relatively recent. For trenches, it is proposed to adopt the price trends used previously in the LLU price review (ComReg Document No. 10/10).

(b) Asset Lives:

4.93 ComReg is of the preliminary view that the asset lives for those assets relevant to the provision of products and services in the market for wholesale terminating segment of leased lines across the access and core network should be consistent with ComReg Document No. 09/65[30] (Decision No. D03/09).

(c) Allocation of common assets between the core and access networks:

4.94 There are two types of assets which are common assets between the core and access network. These are as follows:

1) Ducts, chambers and trenches; and

2) Fibre cables.

4.95 The ducts, chambers and trenches are shared between the access copper network, the access fibre network and core network. On the other hand, fibre cables are shared between core network and access fibre network. ComReg has taken into consideration the fact that common assets are shared between the core and access network as part of the modelling exercise.

(d) Allocation of civil works costs between the core and access networks:

4.96 The allocation of civil works costs between the access and core model was previously considered as part of the LLU model review. In essence, the LLU model allocates 50% of trench and chamber between core and access where there is a core network presence. In order to be consistent with the LLU modelling approach, ComReg proposes to use this parameter in the context of the leased lines modelling exercise. To clarify, there is no double counting of costs with those recovered as part

[30] Response to Consultation Document No. 09/11: Review of the regulatory asset lives of Eircom Ltd., 11 August 2009.

of the LLU charge.

(e) Allocation of fibre cable costs between the core and access networks:

4.97 Fibre cables can be shared between the access and core network. Therefore, the cost of fibre should be allocated between the access and core networks. ComReg is of the preliminary view that consideration should be given to the length of the fibre cables that are shared with the core network. Similar to the allocation of trench costs between the access and core network, ComReg proposes to allocate the fibre cable costs 50:50 between the core and access networks. This allocation approach is consistent with that used in the LLU model.

Q. 10. Do you agree with ComReg's preliminary views, as set out above, in relation to the modelling approach adopted in relation to the common areas between the leased lines core and access network? Please provide reasons for your response.

Proposed price control period

4.98 ComReg is of the preliminary view that a multi-year maximum price(s) is not suitable at this time for a number of reasons. Firstly, given the migration to NGN and the early stages of roll-out of NGN technology, ComReg considers that a multi-year maximum price would only be appropriate when a level of migration from the legacy network to the NGN network has taken place. Given the level of instability and uncertainty in terms of volume demands and the costs directly related to NGN ComReg believes that a shorter price control period seems a reasonable approach at this time. Secondly, given Eircom's proposal to set wholesale NGN Ethernet leased line charges on the basis of geographic de-averaging, it may be necessary to ensure that Eircom's revenues recover its total efficiently incurred costs and that the risk of over-or-under recovery is minimised. It is also necessary to ensure that a consistent approach is adopted in the medium term between the proposed price control for the WBA market, as set out in ComReg Document No. 10/56 published on 15 July 2010.

4.99 ComReg is of the preliminary view that the maximum prices should be set for at least one year in the first instance at which point the maximum prices would be reviewed to see if a change is required. Following this review and depending on whether it is necessary to carry out any future changes to the maximum price(s), ComReg proposes that the maximum prices would be set for a period of at least two years[31]. However, this further period will depend on the stability and certainty regarding the input data to the BU-LRAIC plus model and in relation to market conditions at that time. In order to give predictability to OAOs in making their investment decisions, ComReg proposes that the maximum charge(s) would be set on a forward looking basis using a BU-LRAIC plus cost approach, as discussed in earlier sections of this document. ComReg is of the preliminary view that there

[31] Subject to the results of any market review in the interim period which might necessitate a simultaneous review of the price control.

would be no mechanism for setting forward looking prices to compensate for over/under recovery in the maximum price in previous periods. However, this would be reassessed in exceptional circumstances.

4.100 ComReg believes that intervention may be deemed appropriate if exceptional circumstances arise which warrant it. This may be particularly relevant given the migration to NGN over the next number of years. ComReg is of the preliminary view that exceptional circumstances should be determined on a case by case basis by ComReg.

ComReg's preliminary view

4.101 ComReg is of the preliminary view that any proposed maximum charges for products and services within the market for wholesale terminating segment of leased lines be set for an initial period of one year. Following a review at the end of the first year and depending on whether it is necessary to carry out any future changes to the maximum price(s), ComReg proposes that the maximum prices should then be set for a period of at least two years. However, this further period will depend on the stability and certainty regarding the input data to the BU-LRAIC plus model and in relation to market conditions at that time. This review will also seek to ensure that the prices charged, either at the maximum amount or at a lower level, remains cost oriented as set out in section 5.

Q. 11. Do you agree with the duration and future review of the price control? Please provide reasons for your response.

5 Proposed Pricing Approach

Overview

5.1 As set out in ComReg Document No. 08/103 (Decision No. D06/08), the terminating segment of the leased lines market is national in scope and the remedies or obligations applied to the market i.e. Access, Non discrimination, Transparency, Price Control and Accounting Separation refer to this national market.

5.2 In order to discuss the proposed pricing approach in relation to, firstly the legacy products i.e. WLLs and PPCs and secondly, the wholesale NGN Ethernet leased lines products, ComReg have split this section into two main parts as follows:

a) Proposed pricing approach for legacy leased line products and services; and
b) Proposed pricing approach for NGN Ethernet leased line products and services.

A. Proposed pricing approach for legacy leased line products and services:

Background

5.3 To date, the regulated prices for the legacy WLLs and PPCs have been determined on a national basis and the wholesale pricing is reflective of this. The key drivers of the prices of WLL and PPC prices is predominately speed (in Kb/s) and distance (in Km), where the greater the speed and distance of the respective elements of these leased lines, the higher the price. There is no differentiation in WLL and PPC prices in terms of geographical location.

ComReg's preliminary view

5.4 ComReg is of the preliminary view that the current pricing methodology of nationally averaged prices for the legacy WLLs and PPC products should remain in place, going forward. These products have been priced on a nationally averaged basis for a number of years and the pricing approach is well established and understood by industry. In addition, there is currently a large in-situ base of WLLs and PPCs in Ireland. The importance of WLLs in the Irish market has decreased steadily over the last number of years as a result of take up of PPCs. The reduction in the demand for WLLs and the increase in demand for PPCs are consistent with the alternative usage of infrastructure at the national backbone level where competition is developing but is not yet strong enough to allow OAOs to provide such a service without the need to interconnect to Eircom's national backbone.

5.5 ComReg believes that there is currently no need to change the pricing approach over the timeframe of this review as changes to this pricing approach may be unduly disruptive. ComReg welcomes industry's views in this regard.

> **Q. 12. Do you agree that the pricing approach for legacy WLL and PPC products should continue on the basis of nationally averaged prices? Please provide reasons for your response.**

B. Proposed pricing approach for wholesale NGN Ethernet leased lines products and services:

Background

5.6 Over the last number of years, Eircom has initiated a significant project to deploy next generation network Ethernet ("NGNE") equipment. Unlike traditional Leased Lines which were deployed over the course of many years in the absence of any competition, NGNE is now being deployed initially in areas of high density and will then be rolled out to regional areas. At this stage, it is uncertain whether such NGNE will be deployed nationally, as the business case may be more uncertain the further the network is rolled out to rural areas. In fact, ComReg has already reviewed a similar set of conditions in the recent LLU pricing decision, where it was recognised that Ireland is quite different to other European countries in that the demographic profile means that it can be uneconomic to deploy network in some parts of the country. NGNE is no different to this concept except that the customer base is small, medium and large businesses which are predominately in medium and large towns and city areas.

5.7 There are also significant constraints with leased lines where in some cases fibre is required rather than copper to deliver higher bandwidths and this can constrain the ability of Eircom or other operators to deliver services the further away from exchanges the demand might be.

5.8 In October 2009, Eircom published a reference offer and the associated pricing[32] for current generation contended wholesale Ethernet products. The contended wholesale Ethernet services were discussed in section 4 above but to summarise these are as follows:

- Contended Wholesale Ethernet Access ("WEA");
- Wholesale Dublin Ethernet Access ("WDEA"); and
- Wholesale Regional Ethernet Access ("WREA").

5.9 On 23 April 2010, Eircom published its proposed wholesale NGN Ethernet leased lines product offering and proposed price list. The wholesale NGN Ethernet leased lines product is a national product in scope, delivered primarily over fibre with service speeds ranging from 10 Mb/s to 1,000 Mb/s. The wholesale NGN Ethernet leased lines product effectively replaces the WDEA and WREA services set out above. The proposed pricing submitted by Eircom is based on a nationally de-averaged pricing model, where the main drivers of the prices are determined by geographic area and capacity (in Mb/s). This proposed pricing approach is the subject of this section of the consultation.

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[32] http://www.eircomwholesale.ie/dynamic/pdf/Proposed_Netpricelist%20V3.7.pdf

5.10 There are three main elements to the pricing:

- Wholesale Ethernet Interconnection Link ("WEIL")[33]
- Wholesale Symmetrical Ethernet Access Physical ("WSEA Physical")[34]
- Wholesale Symmetrical Ethernet Access Logical ("WSEA Logical")[35].

5.11 The proposed wholesale NGN Ethernet leased lines prices from Eircom are set out in Eircom's network price list[36]. In summary, these are as follows:

	WEIL	**WSEA Physical**	**WSEA Logical**
Geographic area	**Urban, Provincial & Rural**	**Urban, Provincial & Rural**	**High Density & Medium Density categorised into specific geographical regions and combinations thereof.**
Speed	1,000 Mb/s	10 Mb/s to 1,000 Mb/s	10 Mb/s to 1,000 Mb/s

5.12 The proposed Eircom wholesale NGN Ethernet leased lines prices are nationally de-averaged wholesale prices. To ensure that the proposed approach from Eircom does not create anti-competitive effects and is consumer friendly, ComReg has carried out an assessment to ensure that the pricing approach is in line with ComReg's objectives as set out in the Communications Regulation (Amendment) Act 2007.

5.13 The main pricing proposals in relation to wholesale NGN Ethernet leased lines are set out below under four main headings:

- Price differentiation between 'best efforts' conveyance and 'real time' conveyance;
- Price differentiation by geographic area;
- Gradients;
- Compliance with the cost orientation obligation; and
- Avoidance of anti-competitive practices.

1. Price differentiation between best efforts and real time services

5.14 In order to determine the appropriate level of costs and the appropriate cost oriented charges, Eircom proposes to differentiate between its wholesale Ethernet leased line products on the basis of the quality of service of conveyance. Eircom has identified two types of services in this regard:

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[33] WEIL is the point of handover to the OAO, between the OAO designated aggregation node and the OAO network.

[34] WSEA physical is the **access** element from the ODF in the nearest aggregation Eircom node to the NTU in the end-users premises.

[35] WSEA logical is the **conveyance** element between the OAO designated aggregation node and the aggregation node connection to the end user.

[36] Network price list v3.7 – refer to service schedule 013 and service schedule 014.

- Best efforts; and
- Real time.

5.15 Real-time traffic requires end-to-end dedicated bandwidth which is reserved for the use of each real-time customer connection. A best efforts connection can share resources with other connections thereby achieving greater cost savings. Real time traffic, such as live voice, requires a higher performance and quality of service e.g. less latency, jitter and dropped packets, to ensure the end-to-end delivery of a coherent signal. The requirement of high performance and quality of service is not as vital for best efforts type traffic given that this relates to the delivery of data such as email. Given the distinction between the two types of services, Eircom proposes that the charges for real time traffic are higher than those for best efforts traffic.

5.16 In addition, Eircom also proposes to provide a traffic based class of service. This will allow an operator or customer to better tailor the mix of real time and best efforts traffic required for a specific products or service, or efficient delivery of a combination of products and services. ComReg believes that this proposal should allow operators and customers to customise its products and services to its specific needs and therefore should allow greater opportunity for product differentiation within the overall marketplace.

ComReg's preliminary view

5.17 ComReg is of the preliminary view that given the importance of delivery of real-time traffic, it is reasonable that the transmission of real time traffic warrants an additional associated cost compared with best effort traffic.

Q. 13. Do you agree that 'real-time' traffic conveyance has an additional associated cost compared with 'best efforts' traffic conveyance? Please provide reasons for your response.

2. Price differentiation by geographic area

5.18 Set out below is the discussion on the geographic element of the proposed pricing structure, which refers specifically to the *WEIL, WSEA Physical* and *WSEA Logical* elements referred to above.

5.19 Geographic de-averaging is a method of determining charges or prices based on geographic regions. In general, the rationale for geographic de-averaging is to bring charges closer to their actual economic costs. De-averaged prices can be determined by density and distance. Geographic de-averaging can promote efficient competition by making it possible to send a clear signal to potential entrants. The key to this is how exactly the geographic de-averaging is implemented in each region such that it does not create distortions in the marketplace and unduly penalise more remote users.

5.20 Eircom believes that costs of the core network are driven by the "topology" of the core network and in turn Eircom identifies two types of regions: high density and medium density. As ComReg understands it, high density is based on eight urban aggregation regions while the medium density is based on nine provincial aggregation regions. In other words high density regions refer to the major urban areas in the major cities such as Dublin, Cork, Limerick, Waterford and Galway. Medium density regions refer to all other areas outside of the urban regions in the country.

5.21 The proposed product differentiation foresees seven pricing options for this dimension depending on the geographical location of the handover nodes (same NGN node, same Region handover and different Region handover) and on the density of the area where the nodes are located, as shown in the diagram below.

Figure 12: Eircom's proposed pricing options relating to Eircom's published pricing tables for the wholesale NGN Ethernet leased line products

Location of WEIL / Location of WSEA	Same NGN node (same agg. node)	Same Region Handover (same agg. region)	Different Regions (diff. agg. regions)
High density	1 Table 3 *no circuit based class of service*	3 Table 4	5 Table 6 *(High Density to High Density)* 6 Table 7 *(Medium Density to High Density)*
Medium density	2 Table 3 *no circuit based class of service*	4 Table 5	7 Table 8 *(Medium Density to Medium Density)*

5.22 ComReg is of the preliminary view that density is indeed a cost driver in terms of the provision of leased line services, as it is demonstrated in the BU model. In theory, accounting for the density of various regions means spreading a considerable large amount of fixed costs that characterise the cost structure underlying leased lines provision onto different amounts of volumes, depending on the geographic location of the handover nodes. Hence, from the principle of cost orientation, the wholesale product charges should take this element into account.

5.23 ComReg also believes that this proposed price structure is adequate to take account not only of the density but also the distance, even if at an aggregate level. Eircom has also proposed to apply a gradient to the cost structure in order to determine the wholesale NGN Ethernet leased lines charges for high and medium density areas. Gradients are discussed below.

5.24 There are a number of advantages to a de-averaged pricing approach. Firstly prices set in this manner, which will more closely reflect underlying costs should set more accurate price signals. In particular, all operators should face the correct signals as to whether it is better to rent or buy capacity. For example, because there would be no cross subsidy from urban areas based on Eircom's prices an alternative operator may be more likely to build its own infrastructure in some less densely populated areas than otherwise would have been the case. From Eircom's perspective it is more likely to supply remote areas since it now would be in a position to recover its costs. Conversely, in cities Eircom's prices will be lower than otherwise which should improve the competiveness of services in these areas. As a result, this should help improve the competitiveness of Irish cities internationally.

5.25 Secondly, this approach proposed by Eircom is likely to be more sustainable in the long term. However, under a national averaged pricing approach as competition develops in cities it is likely that, since they would by definition be above cost, Eircom would increasingly be unable to compete in these areas thereby eroding the profitability in urban areas required to subsidize rural pricing which would not recover the full costs under a nationally averaged pricing approach.

5.26 ComReg believes that a concern with the approach on de-averaged pricing proposed by Eircom relates to the fact that more rural regions will be more expensive than the urban regions due to economies of scale. As a consequence of this, some existing or potential future key business areas in regions across the country may consider moving or relocating in urban regions to avail of lower Ethernet prices. High density regions have a lower unit cost per Mb/s than medium density regions and therefore the associated pricing for high density regions is lower. In order to mitigate against this risk in medium density regions of Ireland, ComReg is of the preliminary view that the 'high density' pricing approach should be applied to those medium density regions where there is an increased demand in a region, currently recognised as a medium density region which would lead to a lower unit cost per Mb close to or equivalent to that of a high density region. This may drive the re-designation of an aggregation node from medium to high density. It is envisaged that the node categorisation will be somewhat dynamic over time, as demand in regions change, impacting economies of scale and unit costs per Mb. Therefore it is likely that the categorisation of aggregation nodes, into medium and high density, will be somewhat organic over time, whether it be as a result of foreign direct investment initiatives or changes in demands. ComReg believes that there may be a number of options to consider in terms of determining demand requirements for specific medium density regions. ComReg is of the preliminary view that the options include the following:

- Option 1: Bandwidth requirements;
- Option 2: Footprint requirements; or
- Option 3: Determined on a case by case basis by ComReg.

5.27 ComReg believes that demand requirements should be determined on a case by case basis and that any re-categorisation of aggregation nodes would be notified through the formal LLRO notification procedures. This will give ComReg the opportunity to review the proposals and to consider whether demand is sufficient enough to allow for re-designation of the region to a high density region. However, ComReg welcome industry view on this proposal or whether an alternative measure i.e. footprint or bandwidth is more appropriate.

5.28 ComReg believes that this proposed pricing approach should ensure that any future direct investment which might be for example promoted through the various agencies in Ireland is not disadvantaged through a de-averaged pricing approach to the detriment of end users. ComReg welcomes views on this approach.

5.29 It should be noted that while there is currently no NGN Ethernet WLL products in existence in the market place, ComReg will consider whether a de-averaged pricing approach is also relevant and appropriate for NGN Ethernet WLLs should such a product be introduced to the market place in the future.

ComReg's preliminary view

5.30 ComReg is of the preliminary view that product differentiation by capacity and differentiation by geography appears reasonable for *WEIL, WSEA Physical* and *WSEA Logical* but only if the principles of cost orientation and the avoidance of anti-competitive practices are adhered to. Each of these principles is discussed separately below.

5.31 ComReg is of the preliminary view that the 'high density' pricing approach should be applied to certain medium density regions where there is sufficient demand. Where there is an increased demand in a region, currently recognised as a medium density region which would lead to a lower unit cost per Mb equivalent to that of a high density region, this may drive the re-designation of an aggregation node from medium to high density. ComReg believes that consideration should be given to whether demand should be determined on the basis of footprint, bandwidth or determined by ComReg on a case-by-case basis. While ComReg believes that each proposal should be assessed on case-by-case basis it welcomes the views of industry in this regard. ComReg believes that this pricing approach should ensure that any future direct investment is not disadvantaged through a de-averaged pricing approach to the detriment of end users.

Q. 14. Do you agree that geographic density is one of the main cost drivers in terms of the provision of leased lines services on the core network? Please provide reasons for your response.

Q. 15. Do you agree that the pricing approach for 'high density' areas should be extended to 'medium density' areas, where there is demand envisaged in those medium density areas? Please provide reasons for your response.

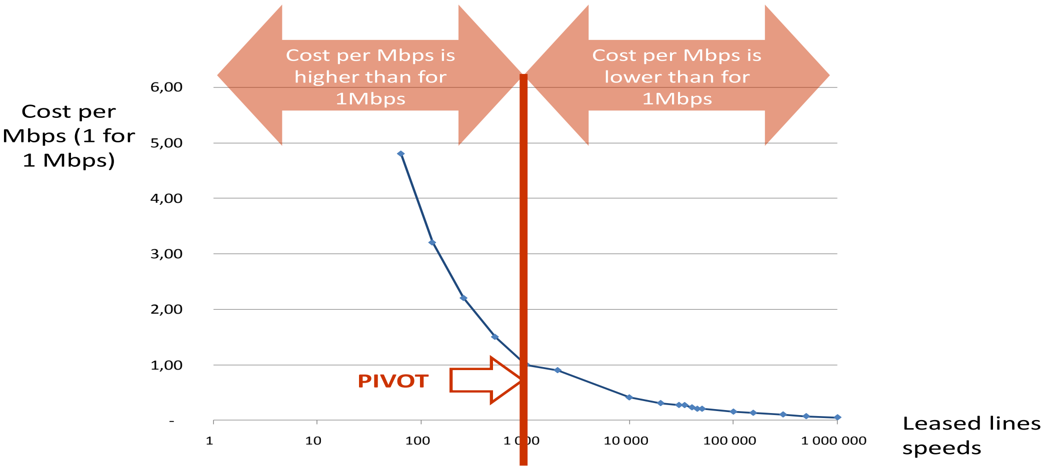
Q. 16. Do you believe that the assessment of demand for those medium density areas should be determined by footprint, bandwidth or determined by ComReg on a case-by-case basis? Please provide reasons for your response.

3. Gradients

5.32 A gradient refers to the degree of a slope; in the telecoms environment it can be used in two different contexts. In the first context, gradients are algebraic tools aimed at producing a set of prices from a common base. A classical example of gradients is the distinction between weekly peak and off-peak, and weekend prices for (both wholesale and retail) termination charges. To the average termination charge, generally obtained as the result of a cost model that does not factor in time of the day and day of the week, a gradient is applied to obtain week and weekend prices, and within the week prices between peak and off peak prices.

5.33 In the context of setting wholesale NGN Ethernet leased lines charges, the gradient, is usually measured with reference to the cost of a base unit, generally 1 Mb/s (this is called the pivot). The overall charges for the product increase by capacity (measured in Mb/s) but the charges of each 1Mb/s unit diminishes with capacity. In other words, the charges increase with the size of the connection, but less than proportionally. The gradient measures the extent of this proportionality.

Figure 13: Illustration of the pivot at 1 Mb



5.34 The gradient is discussed under three main headings:

- How and when should a gradient be used;
- Why should a gradient be used; and
- Are gradients applied in other countries.

(i) ***How and when should a gradient be used**:*

5.35 When prices are "reflective" of costs they yield an efficient allocation of resources. However, in the telecoms environment the amount of costs that are specific to any single product is very limited compared to the total costs; this issue is even more acute in the leased line market where the large majority of costs are shared between different products (or in other words, a very limited amount of the total costs are specific to any single product). Therefore, in this context, the use of gradients makes sense: gradients allow, when used in their active role, to obtain a set of prices on the basis of the price of a single product.

(ii) Why should a gradient be used:

5.36 A key question for ComReg is whether a price structure should be imposed upon the operator in question, for example by way of the use of a gradient, or whether the operator should be free to set its own price structure for wholesale and retail prices. This would of course be subject to the operators' obligation to comply with its non-discrimination obligation, its obligation not to create a margin (price) squeeze and that the charges set ensure that the total revenues cover the total costs and therefore comply with its cost orientation obligation.

5.37 ComReg believes that the following considerations are relevant:

- Economic theory suggests that, under standard assumptions and in the presence of common costs, a set of prices that maximises consumer welfare and an undertaking's profit can also be referred to as "Ramsey pricing". These prices are obtained by spreading the common share of the underlying costs across the different products according to an inverse relationship with the elasticities of the products' demand (i.e. the more elastic a given product's demand to its price, the less the share of common costs to be attributed to this product). However, the use of the Ramsey approach is difficult and often not practical as not in ComReg Document No. 09/66b[37] in August 2009.

- Profit maximisation in any single period may not be the operator's main objective. Longer term objectives may imply strategic behaviour aimed at hindering competition and setting charges accordingly, e.g. products in uncompetitive market segments may be charged a higher share of common costs than products in more competitive market segments (regardless of their demand elasticity).

- As indicated above, both in the core network and within the leased line increment, the relative amount of common costs is significant and, as a result, the gradients can tend to be very steep. It is therefore important to ensure that the charges for leased lines as a whole are such that the "total revenues cover total costs". This would require a substantial amount of information about the other increments as well.

- The issue might be circular, i.e. setting up gradients implies setting up (wholesale and retail) charges; charges have in turn an impact on volumes; volumes have an impact on revenues and revenues might be used in the first place to set the gradients themselves.

(iii) Are gradients applied in other countries:

ComReg has also noted that gradients are applied in the context of setting leased lines charges in other jurisdictions including France, Netherlands and Belgium.

[37] Report prepared for ComReg by TERA Consultants – Assessment whether a Ramsey-pricing methodology can be implemented for setting local loop unbundling ('LLU') and line share ('LS') prices in Ireland – August 2009; dated 18 August 2009.

ComReg's preliminary view

5.38 ComReg is of the preliminary view that it is reasonable to apply a gradient in order to determine the charges for leased line products within the market for wholesale terminating segment of leased lines so long as Eircom comply with its other obligations, including its cost orientation obligation and its obligation not to create a margin (price) squeeze.

5.39 The current charges for the legacy products i.e. WLLs and PPCs are based on gradients. Gradients are also applied in other jurisdictions including France, Netherlands and Belgium.

Q. 17. Do you agree with the application of a gradient to set leased line charges in the market for wholesale terminating segment of leased lines is reasonable so long as the SMP operator recovers its efficiently incurred costs and does not create a margin (price) squeeze? Please provide reasons for your response.

4. Compliance with the cost orientation obligation

5.40 Given the foregoing considerations, ComReg is of the preliminary view that the principle of cost orientation should be applied at a high level of aggregation, i.e. the price structure to be adopted should ensure that total wholesale revenues recover the total costs. Specifically, given the different assets involved in the provision of the different parts of the leased lines products, this condition should separately be applied to *WEIL*, *WSEA physical* and *WSEA logical*.

5.41 The availability of a BU-LRAIC plus model provides ComReg with a very useful tool to assess, given volumes, an efficient level of total costs to be recovered. As set out in section 4, the model takes account of the fact that the total costs will be allocated to other increments (on top of leased lines as a whole), so that over- or under-recovery of costs from other Eircom products can consistently be avoided. As set out in section 4, the proposed cost standard is BU-LRAIC plus, which is in line with ComReg's main regulatory objective, i.e. to provide incentives to invest in infrastructure.

5.42 With regard to the total revenues, ComReg believes that this should be assessed on the basis of Eircom's current price structure and product volumes, appropriately categorised by capacity and geography.

5.43 Setting prices for wholesale products on the basis of current wholesale volumes (so that total revenues equal total costs) may have an impact on retail charges. In addition, changes in retail charges, and more generally shifting demand conditions, may in turn have an impact on end-users volumes (as a whole and within different capacity and geography groups). In turn, end-user volumes will have an impact on both wholesale revenues and costs, but, given the lack of a one-to-one relationship between costs and prices, it is likely that the impact on costs and revenues will not be of an equal magnitude: hence the initial “revenues equal costs” condition may not need to be maintained over time. If this condition is not maintained the gradient may be modified in the future.

5.44 ComReg is of the preliminary view that a revision of the price structure at the end of the initial proposed price control period i.e. 1 year may avoid any significant under- or over-recovery of costs due to any potential changes in demand which may affect the prices set.

5.45 In addition to the above, ComReg also believes that in setting any maximum regulated wholesale prices it is necessary to ensure that:

- Prices set are not so excessive that they create a margin (price) squeeze at a retail level;

- Prices set are not too low that an efficient operator would decide not to invest and compete directly in the retail market where such a choice exists.

ComReg’s preliminary view

5.46 ComReg is of the preliminary view that the principle of cost orientation should be applied at a high level of aggregation, i.e. the price structure should ensure that the total revenues recover the total costs.

5.47 ComReg also believes that in setting any maximum prices it would also be necessary to ensure that there is appropriate economic space between its wholesale products, that the principle of ‘replicability’ is adhered to and that there is no margin (price) squeeze between its wholesale and retail products. In addition, in setting any maximum prices it is also necessary that the prices do not give rise to the eviction of OAOs who have already invested in network build. This has been addressed further in the section below in relation to the avoidance of anti-competitive practices.

Q. 18. Do you believe that the principle of cost orientation should be applied at a high level of aggregation, i.e. the price structure to be adopted should ensure that total revenues recover the total costs for the various elements of the wholesale NGN Ethernet leased lines products? Please provide reasons for your response.

5. Avoidance of anti-competitive practices

5.48 One of ComReg’s regulatory objectives is to ensure that Eircom (the SMP operator) does not engage in anti-competitive practices by means of price setting. Anti competitive price setting practices could mean setting “relatively high” charges in the non-competitive segments of the market (at the moment the low bandwidth circuits) and "relatively low" charges in the segments of the market which potentially could tend towards being more competitive (10 Mb/s and above).

5.49 A better understanding of what "relatively high" and "relatively low" charges means may be explained by using the concept of Cost Volume Relationships ("CVRs"). CVRs link capacity (in Mb/s) to costs (in Euros) ideally for each of the major assets making up the leased lines' products. CVRs can enable the regulator to assess the relative amount of fixed and variable costs for each asset class and hence, combining this information, for the totality of assets making up the totality of leased lines. This split may then be used as a proxy for the relative amount of common costs (the fixed amount) and "specific" costs (the variable amount) and hence the possible steepness of the gradient. In essence, the more common costs that are included the potentially steeper the gradient. This is due to the fact that given the need to spread a relatively large amount of common costs, it is then a matter of establishing exactly how to spread those common costs to the different services.

5.50 It is clear from the points discussed above, that the information requirements for such an assessment are quite demanding and may potentially rely too heavily on arbitrary assumptions.

5.51 ComReg is of the preliminary view that an alternative approach is to assess the use of the gradient i.e. the inverse relationship between product capacity and its price per Mb/s, as a result of the operator offering volume discounts in response to a cost structure that foresees considerable fixed (and hence sunk) costs. In other words, given that the provision of extra units comes at relatively low costs (given the relatively larger amount of fixed costs over variable costs), then it may be reasonable to provide customers with incentives to buy large amounts.

5.52 One point worth consideration in this regard is whether an alternative operator, given its own volumes, and most importantly its own customer base, would be able to replicate Eircom's price structure, and in particular its "relatively low" charges for higher bandwidth products. The underlying assumption of this hypothetical exercise is that alternative operators cannot move their customer base from the "relatively cheap" high bandwidth customers towards the "relatively profitable" low bandwidth customers. Hence, by multiplying Eircom's wholesale charges by the product volumes of different alternative operators, it may be possible to determine total revenue which could be compared with the total cost of the alternative operator.

5.53 Section 3 of this document discusses the different options available in relation to the setting WLL charges so that there is appropriate economic space between WLLs and PPCs prices while ensuring the promotion of efficient infrastructure investment. In section 3, ComReg has also set out its preliminary views in relation to an assessment of the appropriate economic space between any of the other wholesale products in the market for wholesale terminating segment of leased lines i.e. between the wholesale NGN Ethernet leased line products. Since the concepts discussed in this section and the objectives to be achieved (namely providing incentives for OAOs to climb the ladder of investment) are similar in this context, ComReg refers to section 3 of the document for a discussion of the different cost bases; the preliminary conclusion on the most appropriate cost base to adopt is the SEO approach.

5.54 Hence, the total cost level against which to compare the total revenues will be calculated by assuming a cost structure similar to Eircom (determined by the results of the BU-LRAIC plus model), and adjusting for volumes. ComReg believes that the volume adjustment will need to take into account not only capacity differentiation but also the geographical differentiation. This exercise can theoretically be done using the current (and prospective) volumes of each OAO, but given the confidential nature of this information and the robustness of other operators data, ComReg believes that assuming a notional alternative operator with a 25% market share may be more appropriate and welcomes industry views in this regard. This is discussed in detail in section 3 of this document.

5.55 With regard to the most appropriate model type to adopt, ComReg is of the preliminary view that a static model is the preferred approach between WLLs and PPCs however consideration of the dynamic approach may be relevant in terms of any future assessment of the appropriate economic space between the wholesale NGN Ethernet leased line products given the requirement to forecast demand for mobile broadband over the timeframe of this review and the impact that this may have on the recovery of cost. ComReg welcomes industry views in this regard.

ComReg's preliminary view

5.56 ComReg is of the preliminary view that Eircom must ensure that it does not engage in anti-competitive practices by means of price setting in the market for wholesale terminating segment of leased lines. In this regard, ComReg believes that the proposals set out in section 3 of this document in relation to an assessment of appropriate economic space between the wholesale products in the market for wholesale terminating segment of leased lines is relevant in terms of adhering to this principle.

6 Proposed Margin (Price) Squeeze Test between the market for Wholesale Terminating Segment of Leased Lines and Retail Leased Lines market (*ex-ante test*)

Overview

6.1 The provision of leased lines to end-users involves a wholesale and a retail element. With regard to the market for retail leased lines, the European Commission, as part of the 2005 review, proposed that the retail leased lines market should be removed from the list of relevant markets, since wholesale regulation should ensure that there is a competitive supply at the retail level.

6.2 In the latest market analysis of the Leased Lines Market (ComReg Document No. 08/103 (Decision Notice 06/08)), ComReg confirmed the European Commission's view and decided that, in the presence of wholesale regulation, entry barriers to the retail markets are no longer high and non-transitory and this in turn allows existing and potential competitors to enter and compete in the retail market. However, absent regulation, a vertically integrated operator may be able to leverage its market power in the upstream market by foreclosing the downstream market by means of a margin squeeze.

6.3 An ex-ante margin squeeze test between the market for wholesale terminating segment of leased lines and its associated retail offerings is deemed important given that the retail leased lines market is no longer regulated. As a result of de-regulation of the retail leased lines market, there is no transparency in terms of retail prices as there is no obligation on Eircom to publish such prices. Given that the provision of leased lines products is to business consumers and is largely based on bespoke pricing, it is important to ensure that there are no anti-competitive practices occurring either in terms of leveraging or cross subsidisation.

6.4 However, it is important to note in this context that the proposed principles set out below for the assessment of any future margin squeeze between the price of a product in the wholesale market and the associated price of a product in the retail market is a mechanism for Eircom to ensure it is in line with its margin squeeze obligations and for ComReg to monitor this obligation. However, any future assessment of compliance with the margin squeeze obligation will be carried out by ComReg on an ex-post basis.

6.5 ComReg is of the preliminary view that the ex-ante obligation not to create a margin (price) squeeze between retail and wholesale prices in the market for wholesale terminating segment of leased lines should promote entry and sustain competition. There is a risk that Eircom, when setting the margin between prices in the regulated market and a downstream market (e.g. the retail market), could do so at such a level that an equally efficient competitor cannot operate profitably in the market. Although ComReg has, through the maximum prices to be set for the rental products within the market for wholesale terminating segment of leased lines, sought to limit the potential for excessive pricing at the wholesale level, it is believed that there is still a risk that a vertically integrated SMP operator controlling wholesale inputs provided to downstream operators could, through a combination of setting prices in the market for wholesale terminating segment of leased lines at the upper limits of the cost oriented wholesale price control and pricing its retail leased lines unprofitably low, engage in anti-competitive margin squeeze with a view to leveraging its dominant position from the market for wholesale terminating segment of leased lines to the retail market. This margin squeeze may result in foreclosure of OAOs from the market, which would be to the detriment of end users. Therefore, ComReg proposes that the test set out below should assess such squeezes between the market for wholesale terminating segment of leased lines and the retail leased lines market for the purposes of applying the test set out in section 11 of the Decision Instrument contained in ComReg Decision No. D06/08. The proposed ex-ante margin (price) squeeze test will assess the prices for the wholesale legacy leased lines products against the prices for the corresponding legacy services at a retail level and similarly will assess the prices for the wholesale NGN Ethernet leased lines products against the prices for the corresponding retail NGN leased line services. That is to say that the copper based leased line products at a wholesale level will be assessed against the cost of the corresponding copper based leased line products at a retail level and likewise the cost of the fibre based leased line products at a wholesale level will be assessed against the corresponding costs of the fibre based leased line at a retail level.

6.6 As the European Commission states in its Explanatory Note[38] to the 2007 Recommendation on relevant product and service markets susceptible to *ex-ante* regulation, "*when there is regulation at wholesale and/or retail level, the possibility of price or margin squeezes can result from regulatory intervention and it should be assessed in that context… For the assessment of a margin squeeze it is irrelevant whether both wholesale and retail prices are regulated or only one of the two. The relevant questions in this context are (i) whether the spread between wholesale and retail prices cover the retail costs of the dominant firm and (ii) whether the dominant firm is free to avoid the margin squeeze on its own initiative.*"

6.7 The difference between retail revenues and wholesale costs is defined as the margin. If there is an appropriate margin, it is necessary to compare it with the retail costs of an efficient alternative operator in order to determine if the margin is sufficient to cover these costs. If it is, then there is no margin squeeze; if the margin is not sufficient to cover these costs, then there is a margin squeeze.

6.8 ComReg's preliminary views on a further specification of the margin (price) squeeze test between the prices in the market for wholesale terminating segment of leased lines and the corresponding prices at a retail level are as follows and ComReg would welcome respondents' views on each of these:

1. Appropriate cost base;
2. Appropriate cost standard; and
3. Product-by-product or portfolio basis.

[38] Explanatory Note - Accompanying document to the Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to *ex-ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, SEC (2007) 1483 final

1. Appropriate cost base

6.9 Set out below are the options available in terms of determining the appropriate measure of cost to be applied to retail activities. It is necessary to consider the relevant "source" of the costing information to be applied to the proposed margin squeeze test.

6.10 As discussed towards the end of section 3 above, there are basically three options available to ComReg in terms of the source of the costing information to apply as part of the margin squeeze test:

- Equally efficient operator ("EEO");
- Reasonably efficient operator ("REO"); and
- Similarly efficient operator ("SEO").

6.11 The REO approach mainly uses information from OAOs. REO is used by some regulators when their objective is to promote entry. However, a key consideration before adopting the REO approach is whether the quality and efficiency of OAOs data is robust.

6.12 This leaves the choice of whether or not adjustments to Eircom's retail costs should take into account those factors that are deemed to be outside the scope of the alternative operator. If adjustments are necessary, then these adjustments should be specified. In this respect, the following considerations should be noted.

6.13 The principle of "replicability" would require relevant adjustments: an efficient alternative operator should be able to replicate, in equivalent circumstances, the retail prices of the vertically integrated SMP operator without incurring losses. The necessity of avoiding inefficient entry would require these which are outside the scope of the alternative operators.

6.14 ComReg's preliminary view is that the EEO standard should be used. This option would compensate the following factors:

(i) the need for certainty for Eircom on the retail costs to be added (to the wholesale reference prices in order to assess for a possible margin squeeze);

(ii) the possibility of an efficient operator replicating Eircom's offer(s); and

(iii) the need to avoid inefficient entry in the retail market and to keep the retail costs down to a reasonable level for the benefits of end-users.

ComReg's preliminary view

6.15 ComReg is of the preliminary view that an EEO approach is the most appropriate measure of cost to be applied to retail activities in the context of leased lines. ComReg believes that the EEO is more appropriate given that the retail market is more mature than the wholesale market. The EEO approach ensures that operators as efficient as the SMP operator are protected against possible margin (price) squeeze by the SMP operator. ComReg is of the preliminary view that an EEO test encourages efficient investment in infrastructure which is consistent with ComReg's objectives under section 12 of the Communications Regulation (Amendment) Act 2007.

2. Appropriate cost standard

6.16 This section sets out the options available in relation to the relevant cost standard to calculate the leased lines retail costs, to be added to the relevant wholesale prices in order to determine a price floor that would avoid a margin squeeze.

6.17 As already discussed in section 3, the appropriate cost standard can be between the lower threshold of AVC or towards the respectively higher thresholds of LRAIC, 'LRAIC plus' or ATC. Set out below are ComReg's preliminary views on the most appropriate cost standard in relation to the calculation of the leased lines retail costs.

6.18 ComReg is of the preliminary view that the three most relevant options available to it in the context of the proposed guidelines in relation to any future, potential margin squeeze assessment is LRAIC, 'LRAIC plus' or an ATC approach. Each of these was discussed in section 3. The LRAIC approach allows for the recovery of the average efficiently incurred variable costs and fixed costs directly attributable to the activity concerned over the long run but there is no apportionment for joint or common costs. The 'LRAIC plus' approach allows for the recovery of the average efficiently incurred variable costs and fixed costs directly attributable to the activity concerned as well as an allocation of joint and common costs, over the long run. On the other hand, the ATC approach is the average total cost and includes variable, fixed, joint and common costs based on historical cost data but with no adjustments for efficiencies.

6.19 Given that the wholesale terminating segment market is no longer in the early stages of development and future growth is expected, ComReg is of the preliminary view that it is legitimate and appropriate for ComReg to use 'LRAIC plus' approach as the appropriate basis of the retail costs of the retail leased line products. ComReg believes that using 'LRAIC plus' includes appropriate amounts of variable, fixed and common costs, which is the calculus faced by any operator when deciding to enter or expand. The 'LRAIC plus' approach can be more favourable where competition is somewhat more developed and spans the full range of retail products of the SMP operator.

ComReg's preliminary view

6.20 ComReg is of the preliminary view that the 'LRAIC plus' approach is the most appropriate cost measure to adopt as it includes appropriate amount of variable, fixed and common costs, which is the calculus faced by an operator when deciding to enter or expand.

3. Product-by-product basis or portfolio

6.21 As discussed in section 3, it is legitimate and appropriate to apply the test not to margin (price) squeeze to individual products and not to the aggregation of products.

ComReg believes that applying the obligation not to margin (price) squeeze to leased lines products as a whole would give Eircom a large discretion in selectively discounting individual products according to the degree of competition in the various segments, that is, it would allow Eircom to selectively reduce the prices of individual retail products, provided by an associated product in the market for wholesale terminating segment of leased lines, where competition is more intense. ComReg believes that this could negatively impact on those competitors, whose scope of retail products is smaller and which would not be able to reduce the price of their retail products without jeopardising the viability of their business case. ComReg believes that applying the obligation not to margin (price) squeeze as a whole in the market for wholesale terminating segment of leased lines could impair transparency/visibility of any exclusionary/price squeeze behaviour by the SMP operator in respect of discrete wholesale/retail leased line products, rendering it more difficult to monitor and safeguard against such behaviour.

ComReg's preliminary view

6.22 ComReg believes that the application of the obligation not to margin (price) squeeze on individual products in an *ex-ante* context allows sufficient transparency to safeguard against possible exclusionary behaviour, allowing the promotion of sustainable competition by OAOs/entrants which currently may have a smaller range of retail leased lines products than Eircom.

Q. 19. Do you agree with the proposed approach set out above (EEO, 'LRAIC plus' and product-by-product basis) for an *ex-ante* margin (price) squeeze test between the prices in the market for wholesale terminating segment of leased lines and the corresponding prices in the retail market? Please provide reasons for your response.

7 Proposed Transparency Obligation

Background

7.1 ComReg has decided to consult publicly with all interested parties to consider the appropriate application of the transparency obligation in relation to Eircom's WLLs above 10Mb/s generally and also, specifically, between the 16 urban centres as listed in D02/10[39].

7.2 WLLs continue to be mandated as a remedy in ComReg Decision No. D06/08. As stated earlier, WLL is a point-to-point leased line service which provides circuits of bandwidths 64 kilobits per second and upwards.

7.3 The purpose of this section of the consultation is to consider how the transparency obligation is applied in relation to the price control obligation specifically in regard to the requirement imposed on Eircom to publish pricing of WLLs greater than 10Mb/s both generally and those (greater than 10Mb/s) which are routed between the 16 urban centres.

7.4 One of the remedies imposed in ComReg Decision No. D06/08 was an obligation of transparency pursuant to Regulation 10 of the Access Regulations. The remedy requiring Eircom to publish a reference offer and pricing information previously imposed in the initial market review was maintained as laid out in section 9.5 of the decision instrument in ComReg Decision No. D06/08:

> *"Eircom shall publish at least three months in advance any proposed changes to the RO and any proposed changes to Wholesale price and the application of such prices on its website for the purpose of notifying all interested parties of such changes. Eircom shall notify ComReg at least 5 days in advance of any such publication taking place. This period of 5 days may be varied from time to time with the agreement of ComReg. Proposed changes to the RO and proposed changes to Wholesale prices and the application of such prices shall not be implemented without prior notification to ComReg and OAOs and prior approval from ComReg. For the avoidance of doubt, any new product, service or associated facility in the Market shall not be launched without prior notification to ComReg and OAOs and prior approval from ComReg."*

7.5 The rationale for proposing the continuation of this remedy is contained in the preceding documents published as part of the market review. These are (chronologically): the original leased line market review consultation, ComReg Document No. 07/77[40] and the Response to Consultation and Consultation on Draft Decision, ComReg Document No 08/68[41].

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[39] ComReg Decision No. D02/10 Leased Lines Markets: Urban Centres, Decision and Decision Instrument.

[40] ComReg Document No. 07/77, Market Analysis Leased Lines Markets; published 01 October 2007.

[41] ComReg Document No. 08/63, Market Analysis Leased Lines Market: Response to Consultation and Consultation on Draft Decision; published 6 August 2008.

7.6 In the original document (ComReg Document No. 07/77) ComReg outlined the principles which would guide it in setting appropriate remedies i.e. that the remedies *"are based on the nature of the problem identified, proportionate and justified in accordance with the objectives laid down in section 12 of the Communications Regulation Act, 2002*".

7.7 On this basis, ComReg suggested that the obligation of transparency should be continued or maintained, specifically in respect of publication of pricing information in order to optimise transparency in respect of pricing information:

> *5.58 Transparency is a necessary means of ensuring that ComReg and OAOs can observe price and non-price terms and conditions for Eircom's wholesale leased line terminating segment products. A transparency obligation is required to support any accounting separation obligations, as this would allow the calculation of costs and prices (i.e. internal price transfers) to be rendered visible. This would also allow ComReg to monitor compliance with any non-discrimination obligations, and address competition problems relating to cross subsidisation, price discrimination and the application of price squeezes.*
>
> *5.59 The Access Regulations provide for publication of a reference offer that is sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested – this should include a description of the relevant offerings broken down into components according to market needs and a description of the associated terms and conditions, including prices.*

7.8 ComReg posed the following questions in the consultation:

"Q.16. Do you agree with ComReg's proposal to impose a transparency obligation? Do you agree with how ComReg proposes to impose that obligation? Please provide a reasoned response".

7.9 In the response to this question, which was set out in ComReg Document No. 08/63, all respondents agreed in principle to the ComReg proposal:

> *5.84 ComReg proposes that a Transparency obligation should continue to be imposed on Eircom. It is stated as part of the Access Directive that transparency may be used in relation to 'interconnection and/or access, requiring operators to make public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices'. All respondents agreed in principle with this proposal.*

7.10 This obligation therefore applies to the relevant WLL products currently offered by Eircom in this market:

- PPC;
- WLLs; and

- The various published wholesale Ethernet offerings published by Eircom since the publication of ComReg Decision No. D06/08:
    - WEA (Wholesale Ethernet Access) – both contended and uncontended
    - WREA (Wholesale Regional Ethernet Access)
    - WDEA (Wholesale Dublin Ethernet Access)
    - NGN wholesale Ethernet access:
        - WSEA (Wholesale Symmetrical Ethernet Access) &
        - WEIL (Wholesale Ethernet Interconnect Link).

Publication of WLL pricing information

7.11 Traditionally, the pricing information that was publicly available for the WLL product was that published on the Eircom retail website, specifically within the "Telecommunications Scheme". An operator was then required to calculate the price which applied specifically to it. Thus, an operator was required to subtract the wholesale discount for which all OAOs qualified, and further to subtract its term and volume discount, if applicable, to any qualifying circuits (not all leased lines qualified for the Eircom term and volume discount scheme, a scheme which is now closed).

7.12 Alternately operators could place specific WLL presales requests on Eircom in order to obtain more exact pricing than that which may have been otherwise calculated by operators themselves. For operators to calculate pricing independently, they would require detailed knowledge of the radial distance of the specific ends of the leased line to the relevant local exchanges and the distance between the local exchanges themselves, information which in many instances would not be readily available to many operators. This is particularly relevant for circuits of high bandwidth where apparently minor modification of distances can impact significantly on the overall cost of a circuit. For example, a seemingly insignificant alteration of the distance of a customer site to the local exchange can result in a dramatic change in the price of such a circuit. The *modus operandi* for ordering such circuits is that presales pricing is procured in advance of the placing of any such orders due to the relatively high costs involved. The nature of the requirements which the operators are seeking to meet is also an important factor. Circuits of this magnitude are in most cases supplied to meet the needs of large well informed customers. Such customers would be likely to engage IT/Telecommunications experts and complete a comprehensive tendering process, in order to choose a supplier who could verifiably satisfy their ICT requirements. In effect, the pricing for large bandwidth WLLs is usually provided on a bespoke basis on foot of tenders offered by large customers such as multinational corporations, government departments or public service organisations to fulfil customised requirements in a competitive retail market.

7.13 The publication arrangements for WLLs changed following the publication of the Leased Line Reference Offer ("LLRO") in May 2009 as mandated in ComReg Decision No. D06/08. This decision obliged Eircom to publish a complete and unbundled, separate and standalone wholesale leased line offering with associated pricing information. Up until this time PPC and WLL information were published in disparate, unconnected offers. The LLRO was published along with all wholesale leased line pricing information in one document referred to as "The Network Price List". The WLL pricing information published in the Network Price List incorporated the wholesale discount which applies to all OAOs.

7.14 Pricing information for any WLL above 2Mb/s i.e. other than the minimum set, and more specifically 34Mb/s, 45Mb/s, 155Mb/s (STM-1) circuits or greater, was not published either as retail pricing in the Telecommunications scheme or, more recently, as part of the wholesale pricing published within the Network Price List. This situation, in the opinion of ComReg, has not been a hindrance to industry or in the day to day operation of this part of the market. ComReg also understands that the billing information provided for WLLs was sufficiently detailed (being in fact identical to that provided for the retail product but adjusted to incorporate the wholesale discount). Hence, operators were in a position to understand the different cost elements for which they were being charged. The fact that operators could procure detailed presales pricing and billing information has allowed operators to make fully informed purchasing decisions. At no time has any operator raised this as an issue either directly with ComReg or at the relevant industry forum.

7.15 ComReg is therefore of the preliminary view that the current *modus operandi* which pertains to the publication of higher speed WLLs, should be maintained and further amended to above 10Mb/s and that the application of the transparency obligation should be amended to reflect the operational status quo i.e. that Eircom should not publish the pricing information of WLLs above 10Mb/s.

Importance and use of WLLs

7.16 Since the launch of PPCs and more specifically since the general downward pricing adjustments of this product, the number of orders being placed and processed for new provides of PPCs has far out weighed those for WLLs. This also takes account of the large number of initial "migration" orders i.e. paper and actual migration of WLLs to PPCs. ComReg has also observed a decrease which can logically be attributed to natural churn - whereby retail contracts which were fulfilled by the purchasing of WLLs by OAOs are terminated or reengineered. Furthermore the data provided to ComReg indicates that operators are purchasing or deploying alternate products to satisfy customer requirements, where such contracts are renewed or awarded to competitors. In many such cases, wholesale operators are opting for the cheaper alternative of PPCs, or alternately using their own network. For these reasons, the number of WLLs in service is in decline and ComReg anticipates that this trend is unlikely to change in the future.

7.17 This trend is clearly demonstrated in the two diagrams below (data provided by Eircom in June 2010).

Figure 14: **Comparison of percentage order volume of WLL versus PPC EUL**

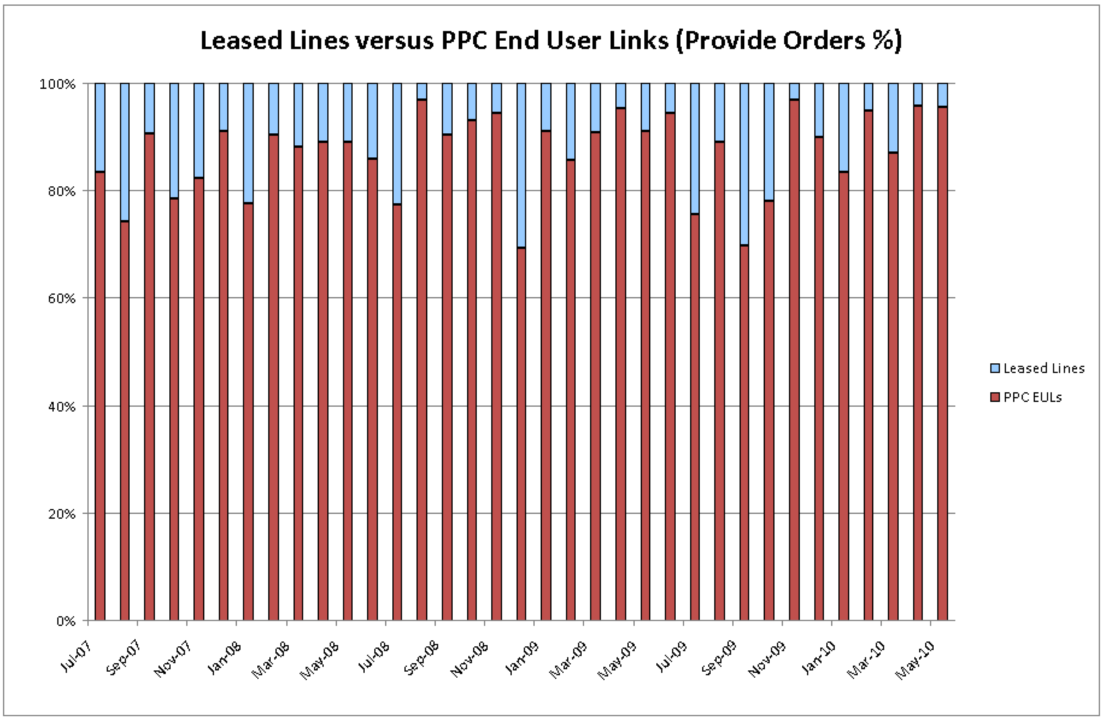
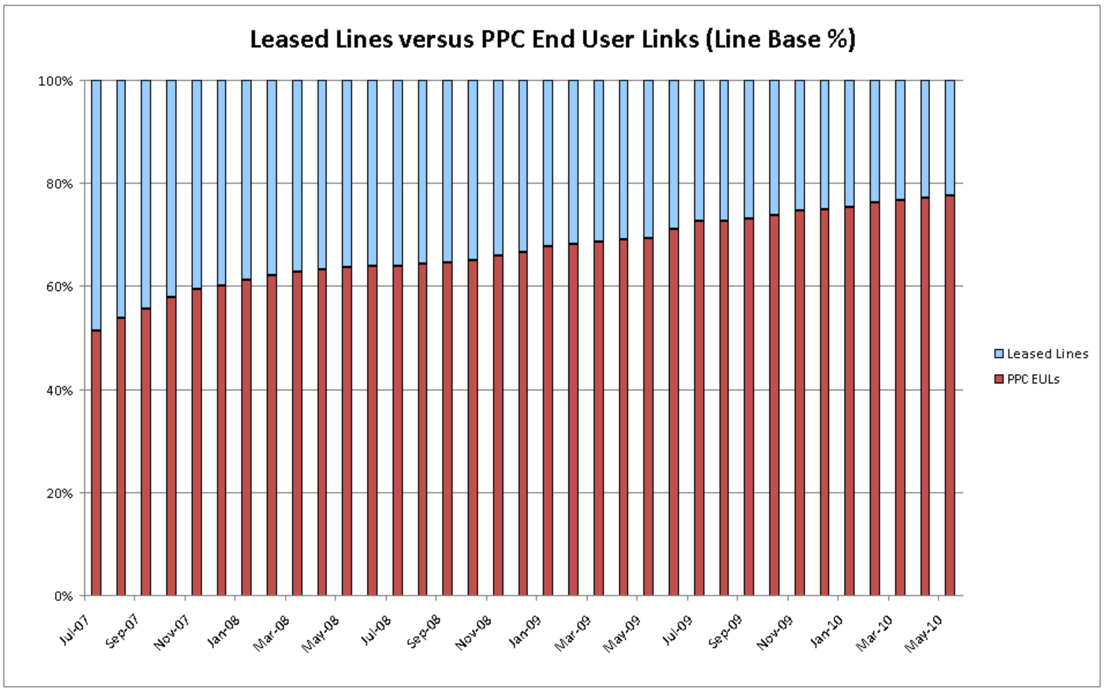


Figure 15: **Comparison of percentage of installed base of WLL versus PPC EUL**



7.18 Although WLLs are a more expensive alternative to PPCs, and as noted above, somewhat in decline, they remain an important wholesale input for operators. There are various instances where an operator may choose WLL, in order to allow it to compete with Eircom:

- In-situ transfer of an existing retail network of leased lines;
- Provision of a carrier diversity to a customer where this is required;
- Connection of off-net service to a retail customer where the geographic location of the customer sites could render the interconnect alternative uncompetitive.

7.19 This data was sought in order to assist ComReg in considering the impact of the changes to its current obligation which Eircom is seeking. The data clearly demonstrates the diminishing use of WLLs by operators. It contributed to the formation of ComReg's preliminary view that a modification to the current transparency obligations in regard to the removal of the current requirement on Eircom to publish pricing information of higher speed WLL's would not have any material impact on industry i.e. such a change would have a neutral impact.

WLL Product Development

7.20 ComReg's intention is that this consultation should be forward looking. Although Eircom does not currently offer WLLs at bandwidths between 2Mb/s and 10Mb/s (i.e. greater than 2Mb/s less than or equal to 10mb/s), or Ethernet WLLs, it is possible that it may do so in the future. Eircom has, since June 2009 offered the WEA (Wholesale Ethernet Access) product to industry, albeit that this is an interconnection based product and not a point-to-point type service. This product offers what would generally be considered in relative terms "low-speed" Ethernet, up to 10Mb/s over bonded copper pairs into the customer premises. This type of offering, if not specifically this product, is expected to be an area of future growth and Eircom has formally announced plans to industry to launch a wholesale NGN Ethernet leased lines product which could provide such speeds over copper within the next year. It is reasonable to assume that many retail customers who currently consume leased lines approaching speeds of 2Mb/s would increase their bandwidths at increments up to 10Mb/s, particularly where contracts have expired and are being renewed or renegotiated. It is therefore possible that Eircom could identify a wholesale business opportunity and offer Ethernet type WLLs at these speeds within the time frame in which the final decision of this consultation will be applicable. ComReg is therefore of the preliminary view that the requirement on Eircom to publish WLL pricing should be applied to circuits of bandwidth up to 10Mb/s. However, ComReg may revise this upper limit as appropriate, in line with future characteristics of such a product. It is understood that speeds above 10Mb/s could also be achieved, and ComReg would consider revising the upper limit were such products to become significant in the market.

Definition of Trunk and Terminating Wholesale Markets: Urban Centres

7.21 In ComReg Decision No. D06/08 ComReg clearly set out the specific definitions of the wholesale trunk and terminating markets and the boundary between them. The trunk market was defined as being constituted by circuits of capacity STM-1

(155Mb/s) or greater, connected between any town or city contained in a list of 15 "urban centres". The market for wholesale terminating segments of leased lines was determined as being therefore constituted of all wholesale circuits which did not fall into the trunk market.

7.22 This is a critically important point as one market is competitive and not subject to SMP regulation, while the other is regulated and subject to various obligations. This includes the obligation of transparency and the application of corresponding remedies including the requirement to publish pricing information. The specificity of these boundary definitions was important in providing clarity to all stakeholders and in enabling the market to operate on a day to day basis in a clear and transparent manner. The list of urban centres was arrived at following a competitive analysis for wholesale leased lines which pertained across the country at that time.

7.23 Subsequent to this, ComReg received a request from Eircom to consider expanding this list. This request was the subject of a consultation "Leased Line Markets: Review of Urban Centres, ComReg Document No. 09/86[42]" and a final Decision in ComReg Decision No. D02/10 which expanded the list of urban centres to a total of 16 towns or cities. This modified list is reproduced below:

Table 5.1 ComReg Decision No. D02/10 List of "Urban Centres"

Arklow
Carrick-on-Shannon
Cork
Drogheda
Dublin
Dundalk
Ennis
Galway
Letterkenny
Limerick
Mullingar
Portlaoise
Shannon
Sligo

[42] ComReg Document No. 09/86: Leased Lines Markets - Consultation and Draft Decision on Urban Centres.

Waterford
Wexford

7.24 The results of the consultation on "Urban Centres" is therefore also highly relevant to the requirement to publish pricing information as any such expansion of the Trunk market, and therefore corresponding contraction of Terminating market, has an impact in regard to whether or not this obligation applies. As laid out originally in ComReg Decision No. D06/08 and also in ComReg Decision No. D02/10, there are specified instances where circuits of capacity STM-1 or greater fall into the wholesale trunk market rather than the market for wholesale terminating segments of leased lines and therefore Eircom does not have to publish the associated pricing information for such circuits. ComReg holds the preliminary view that there remains no reason to differentiate the application of the transparency obligation to WLLs on the basis of geographical location or their routing i.e. if an end to end circuit qualifies as a regulated WLL rather than an unregulated trunk as defined in ComReg Decision No. D06/08 and later refined in ComReg Decision No. D02/10, then the relevant obligations and remedies should apply to it.

7.25 In relation to WLLs of below STM 1 between the urban centres listed in the Appendix to ComReg Decision No. D06/08 as amended, it is not proposed to vary the transparency obligation in respect of those WLLs with the exception of WLLs above 10 Mb/s.

ComReg's preliminary view

7.26 ComReg is of the preliminary view that the current operation of the market is satisfactory and that Eircom should therefore not be obliged to publish pricing information of WLLs of bandwidth greater than 10Mb/s. ComReg, however, is of the preliminary opinion that there is no reason for any differentiation of publication of WLLs pricing information on the basis of geographical location or routing of individual circuits. Therefore, it is proposed that the transparency obligation for WLLs of below STM 1 between the urban centres listed in the Appendix to ComReg Decision No. D06/08 as amended, will not be varied, with the exception of WLLs above 10 Mb/s. It is understood that speeds above 10Mb/s could also be achieved, and ComReg would consider revising the upper limit if such products become significant in the market. ComReg may revise this upper limit as appropriate, in line with future characteristics of such a product. The transparency obligation as set out in the decision instrument in ComReg Decision No. D06/08 is accordingly proposed to be varied. The draft decision instrument is set out in Appendix A of this document in this regard.

7.27 ComReg is also of the preliminary view that Eircom should continue to provide all pricing information for WLLs above 10Mb/s on an application basis and to provide detailed billing information to OAOs for all WLLs.

Q. 20. Do you consider that the application of the transparency obligation in relation to the publication of Wholesale Leased Lines pricing information for circuits of bandwidth greater than 10Mb/s in general, should be adjusted so that Eircom should not be obliged to publish the pricing information for these WLLs? Please provide reasons for your response.

Q. 21. Do you consider that the application of the transparency obligation in relation to the publication of Wholesale Leased Lines pricing information for circuits of less than STM 1 between the "urban centres", should not be adjusted so that Eircom should be obliged to publish the pricing information for these WLLs (insofar as these WLLs are of a bandwidth of less than and equal to 10Mb/s)? Please provide reasons for your response.

8 Other related issues

Frequency of billing

8.1 This issue is discussed below under the following headings:

1. Background;
2. Potential impact on competition;
3. Bargaining power of supplier and customer;
4. Relationship between payment terms and prices;
5. Bad debt; and
6. Ruling by Ofcom.

1. Background

8.2 Eircom currently bills OAOs for their leased line services three months in advance of receiving them with 30 days credit terms. While the OAOs have requested Eircom to alter these payment terms, this request has been rejected by Eircom for a number of reasons. Due to the material nature of these payments and the significant impact it can have on cashflow for industry players, ComReg is now exploring the issue as part of this consultation. A similar issue was brought to Ofcom's attention in the UK. A determination[43] was recently issued in this regard. ComReg has taken account of Ofcom's findings as part of this consultation and as part of its proposed way forward.

8.3 Eircom's current policy is to invoice its wholesale customers for leased line network services 3 months in advance, with 30 days credit terms. This has been the contractual terms for many years now.

8.4 Some of the main arguments for changing the current billing process for leased lines include the following:

- Advance payments of this duration (3 months) are equivalent to OAOs being required to provide a funding facility to Eircom.
- Eircom's annual reported volumes for leased lines are decreasing. This means that any prepayment of services is likely to include payment for services which will be ceased over the quarter in question. The issue arises where the excess prepayment and the timescale for Eircom to refund such excess prepayments

[43] Determination of a dispute between THUS and BT about payment terms for PPCs, IECs and IBCs
http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_916/thusbt.pdf

are a direct provision of a funding arrangement by OAOs to Eircom, with no consideration in return.

- OAOs must provide funding from their own working capital at the commercial cost of such working capital. OAOs are therefore of the view that payment quarterly in advance gives rise to a requirement for OAOs to purchase finance facilities which are not necessary for the provision of the service by Eircom.

8.5 Some of the main arguments against changing the current billing process for leased lines include the following:

- Leased Lines/PPCs are not a usage based product but are typically large value services with minimum contract terms of 1 year. In effect the OAOs are, as the term suggests, leasing capacity. It is not unusual for leases to have longer billing periods. For example, mast licence/lease fees are typically billed six monthly in advance, international cable fees are billed annually in advance, many property and equipment leases have quarterly, six monthly or annual payment schedules.

- Payment terms for leased services such as leased lines are set on a quarterly (or longer) basis to reflect the fact that the provider incurs a significant proportion of the costs in providing the service on an 'upfront' basis and is, in effect, offering a payment plan which amortises the cost over an extended period to the benefit of the customer. In addition, ongoing network cash-costs incurred in supplying the service (e.g. Vendor maintenance, site rentals etc.) are also typically incurred on a quarterly (or longer) in advance basis. It is appropriate therefore that the payment schedule for leased lines should reflect this cash-cost profile.

- Terms and conditions which reflect the issues highlighted above are the long established market norm for wholesale (and retail) operators in Ireland. Eircom provided an example from e-net current MANs service agreement and BT's current wholesale Etherflow product handbook. Both examples refer to payment terms of quarterly in advance.

- To increase the frequency of billing from quarterly to monthly increases the per-transaction costs by a factor of three.

- Quarterly billing in advance applies on a non-discriminatory basis to all of Eircom's customers at both the wholesale and retail level. If a change in billing frequency is made then the prices for the wholesale leased line services (some of which are priced on a retail-minus basis) will have to be increased to reflect the higher transaction and financing costs incurred at the wholesale level.

8.6 A resolution to OAO concerns has not been achieved through the leased lines forum or through commercial negotiation.

8.7 Eircom was designated with SMP in the market for wholesale terminating segment of leased lines and an obligation to provide access was imposed on Eircom. Section

7 of the Decision Instrument contained in D06/08 sets out that the access obligation shall, pursuant to Regulation 13(3) of the Access Regulations, be subject to conditions dealing with fairness, reasonableness and timeliness..

8.8 The requirement to offer terms that are fair and reasonable is imposed as part of a broader condition to provide access to, and use of, specific network elements and associated facilities[44].

8.9 Payment terms form part of the wider charging arrangements within the contract (but operate independently of the nominal price). It is self-evident that payment terms affect the timing of working capital requirements, allowing for the time value of money. Hence other things being equal, terms that require payment in advance of the service being supplied are generally more favourable to the supplier than terms requiring payment in arrears. ComReg considers that there will usually be a range of different payment terms which may be fair and reasonable, depending on the circumstances.

2. Potential impact on competition

8.10 ComReg is of the preliminary view that the current working capital requirements may place a significant burden on OAOs business in terms of additional borrowing costs and a squeeze on the capital available to invest in growing OAOs businesses.

8.11 There may be a competitive disadvantage that the current payment terms place on OAOs relative to Eircom's downstream business. This exists because OAOs typically have a higher cost of capital than Eircom's retail arms and are less able to smooth out peak and troughs in cashflow. Any increase in working capital will therefore impose greater costs on Eircom's competitors than its own downstream businesses and place them at a competitive disadvantage in associated retail markets.

8.12 There is likely to be differences between the less onerous payment terms OAOs are able to enforce in retail markets and the more onerous payment terms that Eircom is able to enforce in the wholesale markets for the inputs relevant to providing leased lines (in the market for wholesale terminating segment of leased lines where is currently has SMP) and in light of the fact that, in practice, Eircom does not face the same discrepancy, ComReg is of the preliminary view that Eircom's payment terms may potentially harm competition, especially in the longterm.

3. Bargaining power of suppliers and customers

8.13 OAO contracts have varied payment and credit terms that are offered to their respective wholesale and retail customers. These terms will be dictated by

[44] See, for example, Article 12 of the Access Directive, in the post-amble to Article 12(1)(i): "National regulatory authorities may attach to those [access] obligations conditions covering fairness, reasonableness and timeliness."

commercial arrangements and large corporate customers may have the relative bargaining power to determine favourable payment terms and credit terms.

8.14 Eircom as the incumbent fixed line operator with SMP in the market for wholesale terminating segment of leased lines market may have sufficient bargaining power as a supplier to determine advantageous payment terms and credit terms for themselves, at a disadvantage to OAOs.

4. Relationship between payment terms and prices

8.15 There can be a clear connection between payment terms (which form part of the wider charging arrangements) and the nominal price(s). Terms that require early payment tend to reduce the working capital requirements of the supplier of a product while increasing the working capital requirements of the purchaser. From Eircom's perspective, the opportunity benefit of this reduced working capital requirement is determined by its regulated cost of capital as well as the extent of prepayment. It is common ground between the parties to this complaint that there is a relationship between the payment terms offered and the level of nominal prices for services which are subject to a cost-orientation obligation. The costs of supplying a service include the cost of capital employed in providing the service and this capital employed should include (within debtors) the value of service provided by Eircom at any one point (on average) that has not yet been paid for. Not to include this value in the cost base would mean, regardless of when Eircom were to be eventually paid for the services provided, that it would receive exactly the same sum. (In this (theoretical) case Eircom would be offering 'free' credit terms).

8.16 The principle of including the value of services provided but not yet paid for in the cost base for capital employed also applies where Eircom is on average paid in advance. In this case there should be a reduction in the mean capital employed (within creditors) to reflect the extent to which it has on average received payment for services before it has actually been supplied to the customer.

8.17 When imposing a price control obligation, ComReg takes into account investments made by the relevant operators and allows for a reasonable rate of return on adequate capital employed. The Weighted Average Cost of Capital ("WACC") provides a measure of the appropriate rate of return on capital or investment employed in the production of regulated services. As the WACC is a key input in the setting of cost recovery/price control obligations, it has implications for the setting of efficient prices for consumers and the creation of ongoing investment incentives for the regulated firm. Eircom's current WACC is 10.21% as set out in ComReg Decision No. D01/08.

8.18 The WACC is factored into the current PPC and Ethernet prices. The current WLL charges in the market are based on a retail minus however further to the market analysis Decision in 2008 this methodology was amended and the proposed revised methodology for setting WLL charges has been discussed in earlier sections of this document. The proposed revised approach for WLL and the approach to date for

PPCs and Ethernet has allowed for a sufficient return to permit Eircom to continue investment in production of regulated services.

5. Bad debts

8.19 In principle, ComReg recognises that changing payment terms may change the amount of debt eventually written off should a particular customer be unable to pay its bills. In this regard there are a number of points to be considered in terms of the specific leased lines network services. PPCs and Ethernet are interconnection products, where there is an investment in infrastructure required, and these products are purchased predominately by large multi-national OAOs. It is not entirely clear to ComReg whether the companies which Eircom has entered into agreements with are high, medium or low risk customers, however, no such analysis has been provided by Eircom to date. WLLs which are end to end services provided by Eircom are also purchased predominately by large multi-national OAOs, so again ComReg believes that the possibility of a significant level of bad debts should be minimal. However, ComReg welcomes any such analysis from Eircom in this regard.

6. Ruling by Ofcom

8.20 ComReg has reviewed Ofcom's determination of a dispute with respect of payment terms of leased line services between THUS communication ("THUS") and BT Wholesale.

8.21 Similar to Eircom, BT Wholesale also invoices its wholesale customers 3 months in advance with 30 days credit terms. THUS argued that payment terms offered by BT Wholesale for these services were not fair and/or reasonable and were in contravention of BT Wholesale's obligations to provide the services on fair and reasonable terms. On 22 December 2006, Ofcom accepted that it was appropriate for it to handle the dispute. Ofcom set out that the dispute is about the timing of payments and the resulting impact on the working capital required, the length of the period covered by one invoice and in particular, payment in advance versus payment in arrears. THUS was of the view that the current payment terms simply reflected what BT Wholesale were able to impose on its customers at the time the product was launched by virtue of its designation of SMP. THUS suggested that BT Wholesale's payment terms did not reflect the norm compared with payment terms offered by 28 incumbent telecoms operators across the world, for wholesale leased lines and connection links.

Worse than BT	Same as BT (quarterly in advance)	More favourable than BT (monthly in advance)	Much more favourable than BT (monthly in arrears)
Telia (Sweden) Deutsche Telekom	Eircom (Ireland)* TDC (Denmark) Saudi Telecom* ** possibly Influenced by UK precedent*	CRAI (India) CWWI (West Indies) Telstra (Australia) Telekom New Zealand Jersey Telecom France Telecom KPN (Holland) Telekom Austria Swisscom Maltacom (Malta) Telecom Italia EPT (Luxembourg) Bell South (USA) Belgacom (Belgium) HT (Croatia) AT&T (USA) OTE (Greece)	Telefonica (Spain) Telecom Slovenia Eesti Telekom (Estonia)* Singapore Telecom Romtel (Romania) **invoice period is 15 days not a month*
Total 2 (7%)	**Total 3 (11%)**	**Total 17 (63%)**	**Total 5 (19%)**

*Source: Submission by THUS summarising report by a professional services firm[45], 28 July 2006

8.22 THUS also argued that BT Wholesale's current payment terms was not fair and reasonable as it imposed an additional cost on purchasers as a result of the impact on its working capital. THUS believed that the current billing practice placed it at a competitive disadvantage compared with BT's retail arm. THUS also suggested that the current regulated prices for PPCs (i.e. as set by Ofcom) did not incorporate assumptions that reflected the payment terms offered for PPCs.

8.23 BT Wholesale submitted that its current payment terms were fair and reasonable and that the benchmarking data presented by THUS were not reliable, as some of the countries included in the selected sample were not likely to be large suppliers of interconnect circuits and therefore did not provide a fair comparison. BT Wholesale submitted that its payment terms for PPCs, IECs and IBCs were in line with a selection of benchmark payment terms. BT also submitted that prices should rise if the payment terms are adjusted, to rebalance the prices to take account of the change in working capital. Finally, BT Wholesale stated that the change requested by THUS would mean all charges are raised in arrears on the next invoice, which would increase BT's risk of non-payment whilst reducing the purchaser's risk. BT Wholesale believes that the risk involved should be shared equally between BT Wholesale and the purchaser.

8.24 After assessing the relevant considerations and the submissions made during these proceedings, Ofcom considered that there was a range of terms which may be fair and reasonable, depending on the circumstances of the case, rather than one set of narrowly defined fair and reasonable payment terms. In order to reach a view on whether the terms offered by BT Wholesale for PPCs, IECs and IBCs were fair and reasonable, Ofcom considered what factors may be relevant in weighing the fairness and/or reasonableness, or otherwise, of particular terms. In Ofcom's opinion, there were a number of different considerations, such as the ability of the firm with SMP to resist competitive pressures and the question of whether the terms were capable of harming competition, which may suggest that terms are not fair and/or reasonable. Ofcom acknowledged that under certain circumstances terms, conditions and charges for the provision of Network Access may even be considered not fair and/or reasonable when they fail to promote competition.

8.25 In the present case Ofcom considered the submissions of the parties and the responses to the consultation on the draft determination. In particular, Ofcom has considered three main strands of evidence:

- the potential impact on competition of the payment terms;
- the question of consistency between the payment terms currently offered by BT and the implicit assumptions about payment terms made when the prices were set by Ofcom for the relevant services; and
- the benchmarking data relating to payment terms offered by other European incumbents for comparable services, and the payment terms offered by BT Wholesale for other Wholesale and Openreach services.

8.26 It was Ofcom's view that in line with the policy objectives set under the Framework Directive[45], and Ofcom's obligations under section 4 of the Communications Act 2003 the most important consideration in the resolution of this particular dispute is the potential impact on competition.

8.27 Ofcom considered that within the scope of this dispute when assessing the impact on competition from particular payment terms, it was not necessary to demonstrate an actual harm to competition, but rather, whether the terms were capable of harming competition. Ofcom's view was that BT's payment terms offered for PPCs, IECs and IBCs were capable of harming competition for the reasons set out in this explanatory statement. This view was further supported by the weight of the benchmarking evidence. Although the benchmarking data was not, by itself persuasive evidence that the current payment terms were not fair and/or reasonable, they were relevant considerations together with the evidence relating to the implied assumptions in the price. Ofcom considered whether the question of consistency with the price control provided a countervailing factor sufficient to weigh against that conclusion and concludes that it did not.

8.28 Therefore, Ofcom concluded that BT Wholesale's current payment terms for PPCs, IECs and IBCs were not fair and/or reasonable, and in consequence, were not in accordance with BT Wholesale's SMP conditions AA1(a).2, G1.2, GG1.2 and H1.2 since those conditions came into effect. Ofcom, therefore, required BT Wholesale to offer THUS payment terms of billing monthly in advance, with 30 days to pay, for PPCs, IECs and IBCs, in order to comply with said SMP conditions, and to pay THUS a sum by way of adjustment for the overpayment of

[45] Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services

the proper amount of the relevant charges to cover the loss incurred through the early payment of the nominal price for those services received since the relevant SMP condition came into effect.

ComReg's preliminary view:

8.29 ComReg believes the SMP designated operator, Eircom, has a competitive advantage in setting the payment terms with OAOs. OAOs and Eircom retail are subject to the respective bargaining power of business customers. It is important to note that the leased lines services under review are purchased by business customers and not consumers. There is a very different bargaining power dynamic among customers compared to other telecommunications services. There is a likely impact on OAOs in terms of their working capital requirements, where they are likely to have greater financing requirements to fund working capital, at the expense of further capital investment.

8.30 While ComReg acknowledges that it would be preferable if the payment terms were resolved commercially, in the absence of such consensus regulatory intervention is necessary to ensure competition is not being unduly impeded through unfair monopoly terms and conditions in the market for wholesale terminating segment of leased lines. ComReg does not believe that Eircom's current payment terms of invoicing quarterly 3 months in advance, with 30 days credit terms is fair and reasonable. Therefore ComReg believes that payment and credit terms should be amended.

8.31 In summary, ComReg is of the preliminary view that the guidance from the Ofcom case between THUS and BT Wholesale should be considered in the current case given its relevance and similarities to the issue at hand. ComReg believes Eircom's terms should be amended to invoicing monthly in advance with the credit terms remaining at 30 days.

8.32 ComReg is of the view that consideration must also be given to the timing of any changes to the payment terms. The options for the timing of any changes are as follows:

- The new terms are effective from the next billing cycle, from the date of the decision.
- The new terms are effective from the next billing cycle, six months from the date of the decision.
- The new terms are effective from the next billing cycle, twelve months from the date of the decision.

8.33 ComReg believes that these new billing terms should be effective from the next billing cycle, twelve months from any decision so that Eircom has a reasonable period of time to implement the changes to its systems and so that the changes are not overly disruptive to Eircom's business. In addition, ComReg believes that allowing Eircom an implementation period of twelve months from the date of any decision is proportionate and reasonable.

8.34 While ComReg believes that changing the frequency of billing from quarterly in advance to monthly in advance may have some associated transaction costs, ComReg is of the preliminary view that these costs should not be significant. However, ComReg welcomes industry views in this regard.

Q. 22. Do you agree that a billing period of one month in advance with 30 days credit are reasonable payment terms from Eircom to other operators for the provision of wholesale leased line products i.e. WLLs, PPCs and NGN Ethernet leased lines, within the market for wholesale terminating segment of leased lines? Please provide reasons for your response.

Q. 23. Do you agree that in the interests of proportionality and reasonableness Eircom's new billing terms should be effective from the next billing cycle twelve months from the date of the decision? Please provide reasons for your response.

9 Regulatory Impact Assessment ("RIA")

Introduction

9.1 A Regulatory Impact Assessment ("RIA") is an analysis of the likely effect of proposed new regulation or regulatory change. The RIA should help identify regulatory options, and should establish whether proposed regulation is likely to have the desired impact. The RIA is a structured approach to the development of policy, and analyses the impact of regulatory options on different stakeholders.

9.2 ComReg's approach to the RIA is set out in the Guidelines published in August 2007 in ComReg Document Nos. 07/56 & 07/56a. In conducting the RIA, ComReg takes into account the RIA Guidelines[46], adopted under the Government's Better Regulation programme. Section 13(1) of the Communications Regulation Act 2002, as amended in 2007 requires ComReg to comply with Ministerial directions issued. Policy Direction 6 of February 2003[47] requires that, before deciding to impose regulatory obligations on undertakings, ComReg shall conduct a RIA in accordance with European and International best practice and otherwise in accordance with measures that may be adopted under the Government's "Better Regulation" programme.

9.3 In conducting the RIA, ComReg has regard to the RIA Guidelines, while recognising that regulation by way of issuing decisions e.g. imposing obligations or specifying requirements in addition to promulgating secondary legislation may be different to regulation exclusively by way of enacting primary or secondary legislation. ComReg's ultimate aim in conducting a RIA is to ensure that all proposed measures are appropriate, proportionate and justified. To ensure that a RIA is proportionate and does not become overly burdensome, a common sense approach will be taken towards a RIA. As decisions are likely to vary in terms of their impact, if after initial investigation, a decision appears to have relatively low impact; ComReg may carry out a lighter RIA in respect of those decisions.

9.4 ComReg wishes to point out that since it is not imposing a new regulatory obligation on an undertaking, it is not mandatory for it to conduct a RIA. However, ComReg has nonetheless decided to carry out a RIA in order to demonstrate that it has considered and evaluated the regulatory options available, with due regard to necessity, effectiveness, proportionality, transparency, accountability and consistency. However, ComReg will consider all respondents' views to this consultation and therefore in taking any decision ComReg will assess whether a further RIA should be conducted, though it is not mandatory for ComReg to do so.

9.5 In assessing the available regulatory options, ComReg's approach to the RIA follows five steps as follows:

Step 1: describe the policy issue and identify the objectives

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[46] See "RIA Guidelines: How to conduct a Regulatory Impact Analysis", October 2005, www.betterregulation.ie

[47] Ministerial Policy Direction made by the Minister of Communications, Marine and Natural Resources on 21 February 2003.

Step 2: identify and describe the regulatory options

Step 3: determine the likely impacts on stakeholders

Step 4: assess the likely impacts and choose the best option.

Identify the regulatory objectives and describe the policy issues

9.6 ComReg considers that one of the main objectives, *inter alia*, is to foster competition in the telecommunications industry through appropriate and efficient infrastructure investment. The main regulatory objectives are discussed under the following headings:

A. Price control obligation;
B. Transparency obligation; and
C. Access obligation.

A. Price control obligation:

9.7 When determining the appropriate cost base and ultimately the resulting charges for legacy wholesale leased lines products and services (i.e. WLLs and PPCs) as well as wholesale NGN Ethernet leased lines products, it is necessary to ensure that the cost base and the charges finally set lead to the efficient recovery of costs, efficient investment by operators, prevent or mitigate the possibility of anti-competitive behaviour such as excessive wholesale pricing, margin (price) squeeze and/or foreclosure by way of an insufficient economic space, as well as providing greater choice and competitive prices for consumers (in this case business customers).

9.8 In consulting on a further specification of the appropriate price control in the market for wholesale terminating segment of the leased lines, ComReg will also be minded to the relevant objectives as set out in section 12 of the Act, which includes, in particular, the following:

- Ensure that there is no distortion or restriction of competition;
- Encourage efficient investment in infrastructure and promoting innovation;
- Promote the interests of users within the Community; and
- Encourage access to the internet at a reasonable cost to end-users.

9.9 An important consideration for this RIA is the scope of the further specification of the price control obligation in terms of the proposed costing methodology and the pricing approach to be applied in order to determine the regulatory charges for wholesale leased line products and services including Ethernet technology. It is important for ComReg to consider whether the costing methodology and the pricing approach proposed provides Eircom, and OAOs with efficient competition and investment incentives while at the same time enhancing consumer welfare i.e. business customers. Another important aspect is the principles for an ex-ante margin squeeze test between the prices in the market for wholesale terminating segment of leased lines and the corresponding prices in retail market.

Consideration of the appropriate economic space between the wholesale products is also an important consideration in this context.

Proposed costing methodology

9.10 As set out in section 3 of this document, ComReg proposes to use a BU-LRAIC (LRAIC plus) costing methodology for determining the relevant efficiently incurred costs for PPCs, current generation Ethernet leased lines and wholesale NGN Ethernet leased lines going forward. The main objectives of this approach is that it sends the correct "build/buy signal" to industry and therefore encourages efficient infrastructure investment while allowing operators to assess their possible investment decisions and promotes competition in the market for wholesale terminating segment market of leased lines. This approach also encourages operator efficiency. However, as discussed in section 3, ComReg believes that a further point worth consideration as part of this consultation is whether the BU-LRAIC plus costing approach is appropriate for all areas in Ireland or whether top down historical cost information (based on fully distributed costs) is more appropriate for those areas of the access network with lower densities and demand and where alternative investment is highly unlikely. ComReg is of the preliminary view that its main objective should be to incentivise investment while using the BU-LRAIC plus model. However, ComReg welcomes the views of industry in this regard.

9.11 One exception to the BU-LRAIC plus costing methodology is the proposed approach in relation to WLLs. As set out in section 3, ComReg proposes that the WLLs should ensure the recovery of a reasonable level of efficiently incurred costs while consideration is given to the appropriate economic space between PPCs and WLLs.

Proposed pricing methodology

9.12 ComReg proposes to continue for now with the national average pricing approach for its legacy WLLs and PPCs products. However, Eircom has proposed a geographically de-averaged pricing approach for the wholesale NGN Ethernet leased lines products and services. The policy risks identified in relation to the de-averaged pricing approach are set out below.

9.13 In terms of the policy issues, ComReg believes one development which is new and of particular significance is the application of geographic de-averaging of prices and the potential impact that this may have on the market for wholesale terminating segment of the leased lines and on the prices charged in the retail for associated retail offerings. As set out in section 5 above, Eircom have proposed to apply geographic de-averaging based on high and medium density regions. Basically prices will differ between urban areas (high density) and other parts of the country (medium density). The rationale for geographic de-averaging is generally to bring prices for the various regions (high and medium density) in the country closer to their actual economic costs. While ComReg acknowledges Eircom's point that the costs of providing Ethernet services to different regions of the country varies between urban areas and those provincial and more rural areas it is equally important for ComReg and Eircom to understand the amount of the variation that exists between the different regions in Ireland and to ensure that consumers are not disproportionally impacted by such a change. This is further discussed below.

Proposed margin (price) squeeze test

9.14 ComReg is of the preliminary view that the *ex ante* obligation not to create a margin (price) squeeze between the prices in the market for wholesale terminating segment of leased lines and the corresponding prices in the retail market should promote entry and sustain competition. An ex-ante margin squeeze test is deemed important in this context given that the retail leased lines market is no longer regulated. As a result of de-regulation of the retail leased lines market, there is no transparency in terms of retail prices as there is no obligation on Eircom to publish such prices. Given that the provision of leased lines products is to business consumers and is largely based on bespoke pricing, it is important to ensure that there are no anti-competitive practices occurring either in terms of leveraging or cross subsidisation. However, it is important to note in this context that the proposed margin squeeze test between the price of a product in the wholesale market and the associated price of a product in the retail market is a mechanism for Eircom to ensure it is in line with its margin squeeze obligations and for ComReg to monitor this obligation. However, any future assessment of compliance with the margin squeeze obligation will be carried out by ComReg on an ex-post basis. The risk is that Eircom, when setting the margin between prices in the regulated market and a downstream market (e.g. the retail market), could do so at such a level that an equally efficient competitor cannot operate profitably in the market. Although ComReg has, through the maximum prices to be set for the rental products within the market for wholesale terminating segment of the leased lines, sought to limit the potential for excessive pricing at the wholesale level, it is believed that there is still a risk that a vertically integrated SMP operator controlling wholesale inputs provided to downstream operators could, through a combination of setting prices for products in the market for wholesale terminating segment of leased lines at the upper limits of the cost oriented wholesale price control and pricing its retail leased lines unprofitably low, engage in anti-competitive margin squeeze with a view to leveraging its dominant its associated retail offerings. This margin squeeze may result in foreclosure of OAOs from the market, which would be to the detriment of end users. Therefore, ComReg proposes that the margin (price) squeeze test should assess such squeezes between the market for wholesale terminating segment of the leased lines and its associated retail offerings. The proposed ex-ante margin (price) squeeze test will assess the prices for the wholesale legacy leased lines products against the prices for the corresponding legacy services at a retail level and similarly will assess the prices for the wholesale NGN Ethernet leased lines products against the prices for the corresponding retail NGN leased line services.

B. Transparency obligation:

9.15 ComReg has considered the regulatory impact of the changes to the transparency obligation in relation to the publication of WLL pricing information for circuits of bandwidth greater than 10Mb/s. ComReg is of the preliminary view that this proposed modification does not warrant a formal RIA as the proposal is to reduce the degree of regulatory intervention in a part of the market which is diminishing. Furthermore, there has not been any request for publication of this information made on behalf of industry and currently there are very few WLL circuits of this capacity. Pricing information is supplied on a request basis and will continue to be. For these reasons, ComReg is of the preliminary view that this proposed change would have no impact on the market and therefore a formal RIA is not required. It should be noted that ComReg may revise this upper limit (10Mb/s) as appropriate, in line with future characteristics of such a product.

C. Access obligation:

9.16 The key regulatory objective in relation to Eircom's billing process is to ensure it is compliant with Regulation 13(3) of the Access Regulations, in relation to the conditions dealing with fairness, reasonableness and timeliness. OAOs are currently required to pay for their leased line services three months in advance of receiving them with 30 days credit terms. While the OAOs have requested Eircom to alter these payment terms, this request has been rejected by Eircom for a number of reasons. Due to the material nature of these payments and the significant impact it can have on cashflow for industry players, it is now proposed to explore the options available and the proposed way forward.

Policy Risk

9.17 The key policy issue relates to Eircom's proposal on a de-averaged pricing approach for wholesale NGN Ethernet leased lines and the likely impact that this may have in terms of the evolution of leased lines competition at a wholesale level as well as the likely impact, if any, on future investment in more rural regions of the country. For example, it is important to understand any potential effects that this approach may have in terms of attracting future direct investment to those areas of the country with medium densities.

9.18 As set out in section 5, some existing or potential future key business areas in regions across the country may consider moving or relocating in urban regions to avail of lower Ethernet prices. High density regions have a lower unit cost per Mb/s than medium density regions and therefore the associated pricing for high density regions is lower. In order to mitigate against this risk in medium density regions of Ireland, ComReg is of the preliminary view that the 'high density' pricing approach should be applied to those medium density regions on a case by case basis where the type of business involved will require very high bandwidth circuits from an exchange outside the high density regions. ComReg has also set out a number of options for measuring the demand in those medium density regions. The options for determining demand include bandwidth, footprint or to be determined by ComReg on a case-by-case basis. ComReg believes that this pricing approach should ensure that any future direct investment which might be for example promoted through the various agencies in Ireland is not disadvantaged through a de-averaged pricing approach to the detriment of end users. ComReg welcomes views on this approach.

9.19 ComReg believes that under a national averaged pricing approach as competition develops in cities it is likely that, since they would by definition be above cost, Eircom would increasingly be unable to compete in these areas thereby eroding the profitability in urban areas required to subsidize rural pricing which would not recover the full costs under a nationally averaged pricing approach.

9.20 In addressing the risk of margin (price) squeeze between the market for wholesale terminating segment of the leased lines and its associated retail offerings, the regulatory options would include setting either as an *ex-ante* obligation (as per current regulation) or to assess margin (price) squeeze ex post by reference to ComReg's competition law powers[48]. In specifying the margin (price) squeeze, the options include:

i. Should the test be an Equally Efficient Operator ('EEO') or Reasonably Efficient Operator ('REO') test?
ii. Should the test be conducted on a product by product basis or on the aggregate of the products?
iii. Is Long Run Average Incremental Cost ('LRAIC plus') the appropriate measure of cost?

9.21 This is discussed in more detail below.

Identify and describe the regulatory options

9.22 Set out below are the main regulatory options available to ComReg in terms of determining the appropriate costing methodology and pricing approach in relation to the legacy WLLs and PPC products and the costing methodology and pricing approach in relation to the wholesale NGN Ethernet leased lines products. Also set out below are the regulatory options for the proposed amendment to the access obligation. These regulatory options are discussed as follows:

a) Regulatory options for the costing and pricing approach for the wholesale legacy leased line products and services;

b) Regulatory options for the costing and pricing approach for the wholesale NGN Ethernet leased lines products and services;

c) Regulatory options to assess a margin (price) squeeze between the prices in the market for wholesale terminating segment of the leased lines and the corresponding prices at a retail level;

d) Regulatory options in relation to Eircom's billing process with OAOs.

[48] Powers to investigate an abuse of a dominant position, inserted by section 31 of the Communications Regulation (Amendment) Act 2007.

A. Regulatory options for the costing and pricing approach for the wholesale legacy leased lines products and services

9.23 ComReg is of the preliminary view that the following three options are the most relevant and appropriate options to consider in relation to determining the appropriate costing methodology and pricing approach in relation to the legacy WLLs, PPCs and WEA product.

- **Option 1**: Use the proposed BU-LRAIC plus model to determine the national average monthly rental charges for the legacy products i.e. PPCs and WEA (current generation Ethernet leased lines).

- **Option 2:** Use the proposed BU-LRAIC plus model but differentiate the costs by high and medium density regions (geographic de-averaging) in order to determine the geographic de-averaged monthly rental charges for the legacy products i.e. PPCs and WEA.

- **Option 3**: Determine the cost for WLLs on the basis of an appropriate economic space assessment with PPCs while continuing to set the WLL prices on the basis of a national averaged pricing approach.

9.24 Option 1 would mean a continuation of the national average pricing approach.

9.25 Option 2 would mean a change in the pricing approach from national averaged prices to prices differentiated on the basis of geographic regions.

9.26 Option 3 means determining the costs for WLLs based on an appropriate economic space between WLLs and PPCs while continuing to price the WLL service on a national average basis.

B. Regulatory options for the costing and pricing approach for the wholesale NGN Ethernet leased lines products and services

9.27 ComReg is of the preliminary view that the following three options are the most relevant and appropriate options to consider in relation to determining the appropriate costing methodology and pricing approach in relation to the wholesale NGN Ethernet leased lines products and services within the market for wholesale terminating segment of the leased lines.

- **Option 1**: Use the proposed BU-LRAIC plus model to determine the nationally averaged monthly rental charges for the wholesale NGN Ethernet leased lines products and services in the market for wholesale terminating segment of the leased lines;

- **Option 2**: Use the proposed BU-LRAIC plus model but differentiate the cost by high and medium density regions (geographic de-averaging) in order to determine the geographic de-averaged monthly rental charges for the wholesale NGN Ethernet leased lines products and services in the market for wholesale terminating segment of the leased lines. In addition, consider applying the ‘high density’ pricing approach to medium density areas on a case by case basis where there is demand requirements; or

- **Option 3**: Use the proposed BU-LRAIC plus model for those areas of high density (urban areas) but use top down historical cost data (based on fully distributed costs) for the access network for those regions of low density and low demand in order to determine the geographic de-averaged monthly rental charges for the wholesale NGN Ethernet leased lines products and services within the market for wholesale terminating segment of the leased lines.

9.28 Option 1 would mean that the wholesale NGN Ethernet leased lines prices would be nationally averaged prices based on a BU-LRAIC plus model. Therefore, the higher costs of more rural regions of the country would be compensated by the lower cost of urban regions. ComReg believes that under a national averaged pricing approach as competition develops in cities it is likely that, since they would by definition be above cost, Eircom would increasingly be unable to compete in these areas thereby eroding the profitability in urban areas required to subsidize rural pricing which would not recover the full costs under a nationally averaged pricing approach.

9.29 Option 2 would mean that the wholesale NGN Ethernet leased lines prices would be geographically de-averaged on the basis of a BU-LRAIC plus model. By using this approach wholesale NGN Ethernet leased lines prices will differ between urban areas (high density) and other parts of the country (medium density). The rationale for geographic de-averaging is generally to bring prices for the various regions (high and medium density) in the country closer to their actual economic costs. There are a number of advantages to a de-averaged pricing approach. Prices set in this manner, which will more closely reflect underlying costs should set more accurate price signals. In particular, all operators should face the correct signals as to whether it is better to rent or buy capacity. For example, because there would be no cross subsidy from urban areas based on Eircom’s prices an alternative operator may be more likely to build its own infrastructure in some less densely populated areas than otherwise would have been the case. From Eircom’s perspective it is more likely to supply remote areas since it now would be in a position to recover its costs. Conversely, in cities Eircom’s prices will be lower than otherwise which should improve the competiveness of services in these areas. As a result, this should help improve the competitiveness of Irish cities internationally.

9.30 Option 3 is similar to option 2 but this option takes account of the fact that a BU-LRAIC plus approach may not be appropriate for those regions of the access network where densities and demand are lower. This option would most likely lead to lower access prices than those arrived at using a BU-LRAIC plus cost model given that the costs already recovered on the access network are not included. However, ComReg is of the view that the BU-LRAIC plus cost approach is more appropriate given that it encourages investment in infrastructure and is consistently applied.

C. Regulatory options for assessing a margin (price) squeeze between the wholesale and retail leased lines market

ComReg believes that the following points are worth consideration:

a) In its assessment of competition problems in the market for wholesale terminating segment of the leased lines, ComReg identified the possible leverage of market power by Eircom from the market for wholesale terminating segment of leased lines into adjacent markets by way of a margin (price) squeeze. As a result of de-regulation of the retail leased lines market, there is no transparency in terms of retail prices as there is no obligation on Eircom to publish such prices. Given that the provision of leased lines products is to business consumers and is largely based on bespoke pricing, it is important to ensure that there are no anti-competitive practices occurring either in terms of leveraging or cross subsidisation. Given this potential risk of anti-competitive behaviour an *ex-ante* regulatory obligation not to margin (price) squeeze was therefore considered more appropriate.

b) It is important to note in this context that the proposed margin squeeze test between the price of a product in the wholesale market and the associated price of a product in the retail market is a mechanism for Eircom to ensure it is in line with its margin squeeze obligations and for ComReg to monitor this obligation. However, any future assessment of compliance with the margin squeeze obligation will be carried out by ComReg on an ex-post basis.

c) Margin squeeze can be demonstrated by showing that the SMP operator's own downstream operations could not trade profitably on the basis of the upstream price charged to its competitors by the upstream operating arm of the SMP operator ("equally efficient competitor" test). Alternatively, a margin squeeze can also be demonstrated by showing that the margin between the price charged to competitors on the upstream market for access and the price which the downstream arm of the SMP operator charges in the downstream market is insufficient to allow a reasonably efficient service provider in the downstream market to obtain a normal profit ("reasonably efficient competitor test"). Or a similarly efficient operator ("SEO") could be utilised which is set by reference to the SMP operator's costs but adjusted for economies of scale and scope differences.

   The SEO/REO approach recognises that even in the long-run alternative operators may not be able to compete with the SMP operator due to structural diseconomies of scale and scope, and the nature of the market. The EEO approach recognises, however, that in a competitive situation an effective alternative operator will be able to compete if it is as efficient as the SMP operator in the market and thus encourages efficient investment in infrastructure. The EEO may be more consistent with the above-mentioned objectives of promoting efficient investment in infrastructure. However, to the extent that operators do not benefit from the same economies of scale and scope and having different unit network costs, a test based on SEO/REO may be more appropriate.

d) Applying the obligation not to margin (price) squeeze only to products in the market for wholesale terminating segment of the leased lines on an aggregated basis would give Eircom a large discretion and flexibility in selectively discounting individual leased line products. It may however limit transparency and confidence in the effectiveness of the margin squeeze obligation with consequent implications for competition and investment. The application of the ex-ante margin (price) squeeze test on a product-by-product basis would allow for enhanced transparency and confidence in the effective operation of the obligation, ensuring that there is no distortion or restriction of competition and supporting investment.

e) The appropriate cost standard for the calculation of retail costs can be between the lower threshold of average variable cost ("AVC") and average avoidable cost ("AAC") toward the respectively higher thresholds of, Long Run Average Incremental Cost ("LRAIC"), 'LRAIC plus' and Average Total Cost ("ATC"). 'LRAIC plus' is defined to include all of the long run average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned, plus an apportionment of joint and common costs. Using 'LRAIC plus' includes appropriate amounts of variable, fixed and common costs, which is the calculus faced by any operator when deciding to enter or expand.

D. Regulatory options in relation to Eircom's billing process to OAOs:

9.31 ComReg is of the preliminary view that there are two relevant options to consider in terms of the most appropriate billing process going forward.

- **Option 1**: The billing process should remain at quarterly in advance with 30 days credit terms; or
- **Option 2**: The billing process should be changed to monthly in advance with 30 days credit terms.

9.32 Option 1 would mean that the status quo remains in place and Eircom would continue to bill the OAOs quarterly in advance (with 30 days credit terms).

9.33 Option 2 would mean that Eircom would change the frequency of its billing to monthly in advance (with 30 days credit terms). This option would be line with a recent determination by Ofcom in the UK in relation to a dispute between THUS and BT. This option would mean that the new terms would be effective from the next billing cycle, twelve months from any decision so that Eircom would have a reasonable period of time to implement the changes to its systems and so that the changes are not overly disruptive to Eircom's business. ComReg believes that the twelve month period for implementation is proportionate and reasonable.

Determine the likely impacts on stakeholders

9.34 The likely impact on stakeholders is discussed under the headings below as follows:

a) Likely impact on stakeholders based on the proposed regulatory options for the price control for the legacy leased line products and services;

b) Likely impact on stakeholders based on the proposed regulatory options for the price control for the wholesale NGN Ethernet leased lines products and services;

c) Likely impact on stakeholders based on the proposed margin (price) squeeze test between wholesale and retail markets;

d) Likely impact on stakeholder based on the proposed assessment for appropriate economic space between other related wholesale products within the wholesale terminating market for leased lines; and

e) Likely impact on stakeholders based on the proposed assessment of a change in the frequency of billing OAOs.

A. Likely impact on stakeholders based on the proposed regulatory options for the legacy leased line products and services

Option 1 – ***Use the BU-LRAIC plus model to determine the national average costs and charges for legacy products i.e. PPCs and WEA***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i)No change to the pricing approach which has been in place for a number of years. There is currently a large in-situ base of WLLs and PPCs in Ireland. Continuing with the average pricing approach ensures that there are no unnecessary disruptions in the marketplace.	(i)The status quo of a nationally average price will remain in place. Historically OAOs have based their investment decision on this well established approach. A continuation of this approach will provide OAOs with stability and certainty over the timeframe of this review.	(i) Business consumers continue to pay a national price regardless of geographic region. This ensures that no distortions are created in the marketplace.

Option 2 – Use the BU-LRAIC plus model to determine the costs and charges for high and medium density regions i.e. geographic de-averaging for legacy products		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) A change from a long established national average pricing approach for legacy leased line products may be unduly disruptive to the market..	(i) May create instability for OAOs given that they initially made their investment decisions based on the national averaged pricing approach.	(i) There will be no significant changes from a pricing perspective for those consumers that remain on legacy products.

Option 3 - Determine the cost for WLLs on the basis of an appropriate economic space assessment with PPCs		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
Ensures that Eircom recover its efficiently incurred costs.	Ensures that those OAOs that have or that intend to invest are not evicted from the market. Also allows OAOs to replicate the wholesale/retail offerings of the SMP operator.	Ensures a better choice of services for consumers.

B. Likely impact on stakeholders based on the proposed regulatory options for wholesale NGN Ethernet leased lines products and services

Option 1 – *Use the BU-LRAIC plus model on the basis of national average costs and charges for NGN Ethernet leased lines*		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) Will restrain the incumbent from setting lower charges for services in high density (urban) areas and therefore may constrain Eircom from competing with other operators in those urban areas.	(i) OAOs continue to pay for services in the more rural regions of the country where they are unlikely to invest in given the higher costs associated with lower density areas.	(i) Business customers in high density (urban) areas are paying prices above the actual economic cost for those regions so as to compensate the high cost regions (rural areas).
(ii) May disincentivise Eircom from further	(ii) May discourage further infrastructure investment	

investment in NGN.	by the OAOs	
	(iii) Limited scope for new, efficient, entry by OAOs. May not provide OAOs with the correct build/buy decisions.	
	(iv) May discourage operators from migrating from legacy to the higher speed wholesale NGN Ethernet leased lines products as the price differentiation is not so significant.	
Option 2 – ***Use the BU-LRAIC model to determine the costs and charges for high and medium density regions i.e. geographic de-averaging for NGN Ethernet leased lines***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) Given that this approach should ensure recovery of costs for the specific regions, Eircom is likely to supply more remote areas of the country.	(i) This approach sets more accurate price signals. All operators should face the correct signals as to whether it is better to rent or buy capacity.	(i) Prices will be lower in all regions but this approach should particularly improve the competitiveness in city areas.
(ii) Provides Eircom with the appropriate incentives to invest in NGN.	(ii) Encourages further infrastructure investment by the OAO.	
(iii) Increases the incentive for Eircom to offer competitive and innovative products and services especially in urban areas.	(iii) Wholesale charges provide OAO’s (including platform competitors) with correct make/buy decisions and facilitate efficient entry.	

Option 3 – ***Use the BU-LRAIC model to determine the costs and charges applicable in high density regions (urban regions) and use the top down historical costs to determine the access network costs in the medium density regions for NGN Ethernet leased lines***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) Eircom's charges in lower density areas will reflect the fact that a significant portion of the access network costs have already been recovered for trenches and ducts.	(i) OAOs are only expected to pay for the incremental costs relating to the access network in lower density regions.	(i) Consumers may benefit from more choice given that OAOs may extend their geographic reach.
(ii) May be subject to more competition in lower density areas i.e. rural areas.	(ii) May promote investment in technology where it is cheaper to get access to a wider network.	(ii) Consumers may have increased levels of choice.

C. Likely impact on stakeholders based on the proposed margin (price) squeeze test between wholesale and retail markets

1. ***Proposed ex-ante margin (price) squeeze test between the price of a product in the market for wholesale terminating segment of leased lines and the corresponding price for the retail product is based on an EEO approach***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) EEO approach will give Eircom greater scope to offer competitive retail offers.	(i) Facilitates competition from as efficient operators – ensure operators as efficient as the incumbent are protected against possible margin (price) squeeze by the incumbent to the detriment of competition.	(i) Facilitates competition from as efficient operators to the benefit of consumers.
2. ***Proposed ex-ante margin (price) squeeze test between the price of a product in the market for wholesale terminating segment of leased lines and the corresponding price for the retail product is conducted on a product by product basis***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) A product by product basis enhances	(i) Allows promotion of competition by	(i)Allows the promotion of competition by

transparency and increases confidence in ensuring the incumbent is complying with its obligations.	OAOs/entrants. The application of the ex-ante margin (price) squeeze test on a product-by-product basis would allow for enhanced transparency and confidence in the effective operation of the obligation, ensuring that there is no distortion or restriction of competition and supporting investment by OAOs.	OAOs/entrants to the benefit of consumers.
3. ***Proposed ex-ante margin (price) squeeze test between the the price of a product in the market for wholesale terminating segment of leased lines and the corresponding price for the retail product should be based on a 'LRAIC plus' cost measure***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i)Ensures that Eircom can offer competitive retail offers.	(i)Allows the promotion of sustainable competition by OAOs as 'LRAIC plus' includes appropriate amounts of variable, fixed and common costs, which is the calculus faced by any operator when deciding to enter or expand.	(i)Allows the promotion of sustainable competition by OAOs to the benefit of consumers.

D. Likely impact on stakeholders based on the proposed assessment for appropriate economic space between other related wholesale products in the market for wholesale terminating segment of leased lines

1. ***Proposed assessment for appropriate economic space between the wholesale products in the market for wholesale terminating segment of leased lines is based on an SEO approach***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
This is based on Eircom's costs adjusted for	This approach provides the appropriate "build/buy"	Allows the promotion of competition by

efficiencies and economies of scale.	signal to new entrants. The SEO approach will also encourage infrastructure investment while encouraging OAOs to climb the ladder of investment.	OAOs/entrants to the benefit of consumers.
2. ***Proposed assessment for appropriate economic space between the wholesale products in the market for wholesale terminating segment of leased lines is conducted on a product by product basis***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
More transparent and ensures that Eircom its complying with its obligations.	The application of an appropriate economic space assessment on a product-by-product basis would allow for enhanced transparency and confidence in the effective operation of the obligation, ensuring that there is no distortion or restriction of competition and supporting investment by OAOs.	Allows the promotion of competition by OAOs/entrants which currently have a smaller range of products than the incumbent to the benefit of consumers.
3. ***Proposed assessment for appropriate economic space between the wholesale products in the market for wholesale terminating segment of leased lines is based on a 'LRAIC plus' cost measure***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
Allows Eircom to recover all (incl. joint and common costs) of its efficiently incurred costs.	Enables a potential entrant to recover all of its efficiently incurred cost while promoting infrastructure competition by OAOs.	Allows the promotion of sustainable competition by OAOs to the benefit of consumers.

E. Likely impact on stakeholder based on the proposed assessment of a change in the frequency of billing OAOs

Option 1 – Continue with the current billing process of three months in advance with 30 days credit terms		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i)No change to the status quo. Eircom still continue to receive cash three months in advance of providing the leased lines services.	(i) OAOs continue to pay three months in advance for the provision of leased lines services. These current working capital requirements may place a significant burden on OAOs business in terms of additional borrowing costs and a squeeze on the capital available to invest in growing OAOs businesses.	(i) Appears to be no impact.
Option 2 – Change the billing frequency to monthly in advance with 30 days credit terms		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) May increase the transaction costs given the increase in billing frequency.	(i)Allows OAOs to fund their own working capital requirements and allows OAOs to use this available capital to invest in its business.	(i) OAOs may be in a position to offer business customers more favourable payment terms.

Assess the likely impacts and choose the best option

9.35 ComReg is of the preliminary view that the preferred costing approach for PPCs, current generation Ethernet (also known as WEA) and wholesale NGN Ethernet leased lines is BU-LRAIC (LRAIC plus). On the other hand ComReg believes that the costing methodology for WLLs should ensure the recovery of a reasonable level of efficiently incurred costs while consideration is given to the appropriate economic space between PPCs and WLLs. The proposed basis for the economic assessment between WLLs and PPCs is a SEO approach with a ‘LRAIC plus’ cost standard. ComReg proposes that an adjustment for economies of scale should be carried out to determine the WLL charges and a number of options were set out. ComReg proposed that the adjustment should be based on an operator with a market share of 25% however the views of industry are welcome in this regard. It is proposed that such an assessment should be carried out on the basis of a static model since this will ensure consistency with the “replicability” principle so that the offer under consideration can be replicated by an efficient alternative operator. ComReg also proposes that the assessment should be carried out on a product-by-product basis. ComReg believes that the proposed economic space assessment between WLLs and PPCs will send the appropriate investment signal to new entrants which should encourage infrastructure investment and encourage OAOs to climb the ladder of investment.

9.36 In terms of the pricing approach for the products in the market for wholesale terminating segment of the leased lines, ComReg believes that the national average pricing approach for the legacy leased lines products and services i.e. PPCs, WLLs and WEAs should continue going forward. This pricing approach has been adopted for a number of years now and no significant issues have been raised by industry. A continuation of the current pricing approach in relation to the legacy products may also ensure that there are no future distortions in the marketplace. ComReg believes that changes to this pricing approach may be unduly disruptive.

9.37 ComReg is of the preliminary view that Eircom’s proposal for geographic de-averaging appears to be an appropriate option for the newly launched wholesale NGN Ethernet leased line products since this option will bring prices for the various regions (high and medium density) in the country closer to their actual economic costs. ComReg believes that this option allows it to achieve its regulatory objective of encouraging efficient investment by operators as well as providing a greater choice and competitive prices to consumers. In addition, prices set in this manner, which will more closely reflect underlying costs should set more accurate price signals. In particular, all operators should face the correct signals as to whether it is better to rent or buy capacity. For example, because there would be no cross subsidy from urban areas based on Eircom’s prices an alternative operator may be more likely to build its own infrastructure in some less densely populated areas than otherwise would have been the case. From Eircom’s perspective it is more likely to supply remote areas since it now would be in a position to recover its costs. Conversely, in cities Eircom’s prices will be lower than otherwise which should improve the competiveness of services in these areas. As a result, this should help improve the competitiveness of Irish cities internationally. In order to prevent foreclosing future investment in the medium to low density areas of Ireland, ComReg is of the preliminary view that some medium density regions may be re-designated as high density regions for pricing purposes where there is sufficient demand in a specific medium region(s). While ComReg believes that demand in these medium to low density regions should be assessed on a case-by-case basis ComReg welcomes industry views in terms of the other options which include bandwidth or footprint measurement. ComReg believes that this pricing approach should ensure that any future direct investment promoted through any of the various agencies in Ireland is protected. ComReg welcomes views on this approach.

9.38 ComReg believes that it may be necessary to consider whether the top down historical cost approach is more relevant for those part of the access network where densities and demand are low. Given the high cost of civil works on the access network and the fact that Eircom's investment in the access network was made many years ago it may be the case that some of Eircom's assets i.e. trenches and ducts may now be fully recovered. Therefore, the only costs to be recovered going forward would be the incremental costs of maintaining the access network and the day to day operations of it. In summary, this would most likely lead to lower access prices that those arrived at using the BU-LRAIC plus costing approach. While ComReg believes that this point is worth considering in terms of the access network ComReg is of the preliminary view that its main regulatory objective should be to incentivise infrastructure investment on the basis of the BU-LRAIC plus cost approach. ComReg, therefore, welcomes the views of industry in this regard.

9.39 In relation to the proposed margin (price) squeeze test between the prices in the market for wholesale terminating segment of leased lines and the corresponding prices in the retail market, ComReg believes that the EEO cost base is the most appropriate measure to be applied to retail activities in the context of leased lines. The EEO approach ensures that operators as efficient as the SMP operator are protected against possible margin (price) squeeze by the SMP operator. ComReg is of the preliminary view that the 'LRAIC plus' approach is the most appropriate cost measure to adopt as it includes an appropriate amount of average, efficiently incurred variable, fixed and common costs, which is the calculus faced by an operator when deciding to enter or expand. In addition, a product-by-product analysis allows sufficient transparency to safeguard against possible exclusionary behaviour, allowing the promotion of sustainable competition by OAOs/entrants which currently may have a smaller range of retail leased lines products than Eircom.

9.40 ComReg also proposes that an appropriate economic space assessment between the other wholesale products i.e. wholesale NGN Ethernet leased line products within the market for wholesale terminating segment of the leased lines should also be considered. Similar to that proposed above for WLLs and PPCs, ComReg proposes that an SEO approach with a 'LRAIC plus' cost standard is the most appropriate basis. A similar adjustment for economies of scale should be carried out.

9.41 With regard to the transparency obligation, ComReg's preferred approach is to remove the obligation to publish prices for WLLs above 10 Mb/s generally but it is not proposed to vary the transparency obligation for WLLs below STM 1 between the urban centres listed in the Appendix to D06/08 as amended, with the exception of WLLs above 10 Mb/s.

9.42 It is proposed to change the billing process from quarterly in advance to monthly in advance with 30 days credit to ensure competition is not being unduly impeded through unfair monopoly terms and conditions in the market for wholesale terminating segment of leased lines. ComReg proposes that the new billing terms should be implemented from the next billing cycle twelve months from the date of the decision. ComReg believes that this should allow Eircom sufficient time to change its billing system and also it should ensure that the changes are not overly disruptive to Eircom's business. While ComReg acknowledges Eircom's point that billing operators monthly may increase the transaction costs, ComReg is of the preliminary view that these costs would not be significant. ComReg welcomes industry's views in this regard.

9.43 ComReg believes that the proposals above are consistent with ComReg's statutory objectives under section 12 of the Act, as follows:

a. Setting cost oriented maximum prices for leased line rentals and cost orientation for the ancillary services/products in the market for wholesale terminating segment of leased lines together with the ex-ante obligation not to margin (price) squeeze should facilitate greater regulatory certainty for longer-term competitive entry and expansion and greater flexibility for the development of innovative offerings, with positive implications for the price, choice and quality of products ultimately delivered to end-users.

b. *Ensuring that there is no distortion or restriction of competition:* By seeking to pre-empt the possibility for anti-competitive practices by the SMP operator to induce strategic barriers to entry in markets, the proposed costing and pricing approach for the market for wholesale terminating segment of leased lines would thus ensure that competitors can enter and sustain competition in the market and in adjacent markets.

c. *Encouraging efficient investment in infrastructure and promoting innovation:* The proposals should allow for greater flexibility to OAOs to offer more innovative retail products. The proposed 'economic space' assessment should encourage entry and expansion by competitors wishing to invest in their own infrastructure over time. At the same time, the *ex-ante* obligation not to margin (price) squeeze should facilitate entry and sustain competition by OAOs as efficient as the SMP operator which is consistent with encouraging efficient investment.

9.44 ComReg is of the view that the further specification set out in this consultation is appropriate, proportionate and justified as follows:

a. ComReg has already outlined why it is appropriate to undertake this review. ComReg considers that the proposed costing and pricing approach should encourage efficient investment by operators as well as providing a greater choice and competitive prices to consumers. It should also send the correct "build/buy signal" to industry and therefore encourage infrastructure investment while allowing operators to assess their possible investment decisions. ComReg also believes that the safeguards of the *ex-ante* margin (price) squeeze test between the pricing of wholesale rentals within the market for wholesale terminating segment of the leased lines and its associated retail offerings are necessary for the reasons as set out in this consultation, namely to safeguard alternative operators from potential anti-competitive behaviour by the SMP operator;

b. ComReg considers that it has been **proportionate** in its review. ComReg believes the proposals should not be overly burdensome or onerous on Eircom as the SMP operator in the market for wholesale terminating segment of leased lines. The proposed costing approach should ensure that Eircom recovers its efficiently incurred costs while also providing it with added flexibility for developing further differentiated retail and wholesale offers;

c. ComReg considers that the proposed regulatory option has been shown to be **justified** in its review and that it has provided all of the detail, reasoning and information necessary to demonstrate how it reached the preliminary views as set out in the sections throughout this document. As shown above, having considered the respective merits of a range of different regulatory options, ComReg believes that its preliminary option is consistent with its statutory objectives under section 12 of the Act. However, ComReg will review and consider responses to this consultation and, based on those responses, ComReg may make decision(s) different to the preliminary views expressed in this consultation.

Q. 24. Do you have any views on this Regulatory Impact Assessment and is there other factors (if any) ComReg should consider in completing its Regulatory Impact Assessment? Please explain your response and provide details of any additional factors that should be considered by ComReg.

10 Draft Decision Instrument

10.1 The draft decision instrument which is set out in Appendix A relates to the transparency obligation and the access obligation in relation to the market for wholesale terminating segment of leased lines. While a significant part of this consultation document deals with proposals in relation to the price control obligation it is proposed that the draft decision on the price control obligation will be consulted upon in the response to this consultation document. At that point ComReg also proposes to further consult on the appropriate prices in relation to the wholesale products in the market for wholesale terminating segments of leased lines. It is envisaged that these prices will become available over the coming months.

10.2 It is proposed that a decision will be taken on the proposed changes to the transparency obligation and the access obligation foremost and this decision will be included as part of the response to this consultation. Please refer to Appendix A for the proposed decision in relation to the transparency obligation and the access obligation.

Q. 25. Do you believe that the draft text of the proposed decision (in Appendix A) in relation to the transparency obligation and the access obligation is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

11 Submitting Comments

All comments are welcome however it would make the task of analysing responses easier if comments were referenced to the relevant question numbers from this document.

The consultation period will run from **10 September 2010** to **22 October 2010** during which the Commission welcomes written comments on any of the issues raised in this paper.

Having analysed and considered the comments received, ComReg will review the main proposals set out in the consultation and publish a report on the consultation which will, inter alia summarise the responses to the consultation.

In order to promote further openness and transparency ComReg will publish all respondents' submissions to this consultation, subject to the provisions of ComReg's guidelines on the treatment of confidential information in ComReg Document No. 05/24. We would request that electronic submissions be submitted in an-unprotected format so that they can be appended into the ComReg submissions document for publishing electronically.

Please note

ComReg appreciates that many of the issues raised in this paper may require respondents to provide confidential information if their comments are to be meaningful.

As it is ComReg's policy to make all responses available on its web-site and for inspection generally, respondents to consultations are requested to clearly identify confidential material and place confidential material in a separate annex to their response.

Such Information will be treated subject to the provisions of ComReg's guidelines on the treatment of confidential information as set out in ComReg Document No. 05/24.

Appendix A – Draft Decision Instrument

Draft Decision Instrument

NOTE: This Draft Decision Instrument is for information purposes only and is not the final Decision Instrument. Respondents to the consultation are asked to provide their detailed views from a commercial, practical and legal perspective in relation to the Draft Decision Instrument. Please note that this Draft Decision Instrument only deals with the access and transparency aspects of the consultation. A Draft Decision Instrument on price control will be published at the response to consultation stage.

1 STATUTORY POWERS GIVING RISE TO THIS DECISION INSTRUMENT

1.1 This Decision Instrument relates to the market for wholesale terminating segments of leased lines defined in the document entitled Market Analysis: Leased Lines Markets D06/08[49] and as identified in the European Commission's Recommendation[50] and is made by the Commission for Communications Regulation ("ComReg"):

i. Having had regard to sections 10 and 12 of the Communications Regulations Act, 2002;

ii. Having taken account, of its functions under Regulation 6(1) of Access Regulations[51];

iii. Having where appropriate complied with the Policy Directions made by the Minister further to section 13 of the Communications Regulation Act 2002[52];

iv. Having notified the draft measure to the European Commission, further to Regulation 20 of the Framework Regulations[53] whereby the draft measure was also made accessible to national regulatory authorities in other EU

[49] Market Analysis: Leased Lines Markets Review, Response to Consultation on draft Decision Instrument, Final Decision Notice and Decision Instrument, ComReg Document No. 08/103 dated 22 December 2008.

[50] European Commission Recommendation of 17 December, 2007 on Relevant Product and Service Markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services – OJ L 344/65.

[51] S.I. No. 305 of 2003 the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2003 ("Access Regulations") which transposes Directive 2002/19/EC of the European Parliament and the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities.

[52] Policy Directions made by Dermot Ahern T.D. (the then) Minister for Communications, Marine and Natural Resources on 21 February, 2003 and 26 March, 2004.

[53] S.I. No. 307 of 2003 the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 which transpose Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

Member States, and the European Commission having informed ComReg that it had examined the draft measure and that it had no comments in relation thereto and pursuant to Article 7(5) of the Framework Directive[54], ComReg could adopt the resulting draft measure;

v. Pursuant to the market definition, market analysis and reasoning conducted by ComReg in Market Analysis: Leased Lines Markets D06/08[55] ("D06/08"), and the analysis and reasoning set out in Market Analysis: Leased Lines Markets Review of Urban Centres, Response to Consultation and Final Decision, Document No. 12/10 D02/10 and the reasoning and individual decisions set out previously in these documents, each of which form part of and shall where necessary, be construed with this Decision Instrument;

vi. Having consulted pursuant to Regulation 19 of the Framework Regulations and having taken account of the submissions received in relation to Document No. [ComReg Document No. 10/70];

vii. Pursuant to Regulations 9, 10, 13(3) and 17 of the Access Regulations.

2 SCOPE AND APPLICATION

2.1 This Decision Instrument applies to Eircom Limited and its successors and assigns ("Eircom").

2.2 This Decision Instrument is binding upon Eircom and Eircom shall comply with it in all respects.

3 OBLIGATION OF TRANSPARENCY

3.1 Eircom shall no longer be obliged to publish prices for Wholesale Leased Lines ("WLLs") of a bandwidth greater than 10 M/bs.

3.2 Section 9.2 of the decision instrument contained in D06/08 is hereby amended by the substitution of the following wording for the wording therein contained:

"Section 9.2 Without prejudice to the generality of the obligation in section 9.1, pursuant to Regulation 10(2) of the Access Regulations, Eircom shall publish and keep updated a Reference Offer (RO) for the services and facilities referred to in sections 6 and 8. For the avoidance of doubt, this obligation also applies to any new product, service or associated facility in the Market. The RO shall be published 3 months from the effective date or at a later date if agreed with ComReg. The RO shall be sufficiently unbundled so as to ensure that other undertakings availing of

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[54] Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[55] Market Analysis: Leased Lines Markets Review, Response to Consultation on draft Decision Instrument, Final Decision Notice and Decision Instrument, ComReg Document No. 08/103 dated 22 December 2008.

such facilities are not required to pay for facilities which are not necessary for the service requested and the RO shall include:

i. A description of the relevant offerings broken down into components; and

ii. A description of the associated terms and conditions, including prices, other than prices for WLL (Wholesale Leased Lines) of a bandwidth greater than 10Mb/s."

4 CONDITIONS ATTACHED TO THE ACCESS OBLIGATIONS

4.1 Section 7.1 of the decision instrument contained in D06/08, which provides the provision that the access obligations shall be subject to conditions dealing with fairness, reasonableness and timeliness pursuant to Regulation 13(3) of the Access Regulations, is hereby further specified in section 4.2 of this Decision Instrument.

4.2 Eircom's terms and conditions, in respect of the provision of leased lines, in the market for the wholesale terminating segments of leased lines, as defined in D06/08, shall be amended so that Eircom shall invoice other authorised operators monthly in advance with the credit terms remaining at 30 days.

5 STATUTORY POWERS NOT AFFECTED

5.1 Nothing in this Decision Instrument shall operate to limit ComReg in the exercise and performance of its statutory powers or duties under any primary or secondary legislation (in force prior to or after the effective date of this Decision Instrument) from time to time as the occasion requires.

6 EFFECTIVE DATE

6.1 This Decision Instrument shall be effective from the date of its publication and shall remain in force until further notice by ComReg.

6.2 Section 3 of this Decision Instrument shall be applied as of the effective date.

6.3 Section 4 of this Decision Instrument shall be applied from the next billing cycle which occurs [ ] months from the effective date.

Alex Chisholm
CHAIRPERSON
THE COMMISSION FOR COMMUNICATIONS REGULATION
THE ● DAY OF ● 2010

Appendix B – Consultation Questions

List of Questions

Appendix C – Glossary of Terms

ATM (Asynchronous Transfer Mode) is a technology that enables data transfer asynchronously relative to its input into the communications system. The data is put into cells and transmitted through the network to be re-constructed at the output.

CSH (Customer Sited Handover) allows interconnection to occur at a communications provider's premises.

EUL (End-User Links) is the part of a PPC that connects from the customer's premises to an OAO Transport Link.

FR (Frame Relay) is a packet switched data service which provides for the interconnection of Local Area Networks and access to host computers at up to 2Mbit/s.

IP (Internet Protocol) is the communications protocol used for transmitting a data packet between a source and a destination on some data networks including the Internet.

MANs (Metropolitan Area Networks) is a telecommunications term used to describe a network serving a business and residences in an urban area. In this context, it refers to the roll-out of publicly-funded telecommunications infrastructure in specific towns around Ireland.

NRA (National Regulatory Authority) is the relevant regulatory authority in each country. In Ireland, the NRA is ComReg.

NGN (Next Generation Networks) is commonly defined as a single, IP-centric network which separates the services and service control layers from the network to allow rapid development of new services. An NGN will also generally have the capability of supporting multiple low and high bandwidth services including mobility, rich voice and multi-media services.

PDH (Plesio-synchronous Digital Hierarchy) is an older method of digital transmission used pre SDH which requires each stream to be multiplexed or de-multiplexed at each network layer and does not allow for the addition or removal of individual streams from larger assemblies.

PPCs (Partial Private Circuits) is a generic term used to describe a category of private circuits that terminate at a point of connection between two communications providers' networks. It is therefore the provision of transparent transmission capacity between a customer's premises and a point of connection between the two communications providers' networks. It may also be termed a part leased line.

RIO (Reference Interconnect Offer) is a document published by Eircom, and is presented in the form of a standard contract. It deals with Interconnect Services which Eircom offers to operators authorised under the Authorisation Regulations, operating in the Irish market. It also deals with Interconnect Services, which Eircom offers to Operators Authorised in other EU Member States, for termination of traffic presented at Eircom Interconnect Nodes which originates in other EU Member States.

SMP (Significant Market Power): An entity is designated with SMP when the NRA determines that the market under review is not effectively competitive.

SDH (Synchronous Digital Hierarchy) is a method of digital transmission where transmission streams are packed in such a way to allow simple multiplexing and de-multiplexing and the addition or removal of individual streams from larger assemblies.

STM (Synchronous Transport Module) is the basic rate of transmission of the SDH fiber optic network transmission standard.

Transport Links is that part of a PPC which connects the Eircom network with the OAO network.

VPNs (Virtual Private Networks) consist of private networks that may be based around one or more inter-linked "islands" connected together through secure connections.