Commission for
Communications Regulation

Response to Consultations & Final Decision

Response to Consultation Documents No. 09/39 and 09/62

Local Loop Unbundling ("LLU") and Sub Loop Unbundling ("SLU") Maximum Monthly Rental Charges

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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 the unbundled local metallic path ("ULMP") or local loop unbundling ("LLU") and sub-loop unbundling ("SLU").

1.2 The local loop is the final part of Eircom's access network that provides access into homes and businesses. It runs between the local exchange and a home or premises, usually via a street side cabinet. It is sometimes also known as "the last mile" and is used to provide voice telephony and broadband services to end users. The local loop is essentially a natural monopoly, much of which was built over many decades while Eircom enjoyed monopoly status. It is the most difficult and expensive part of a telecoms network for Eircom's competitors to replicate. Moreover, it is highly unlikely that any competitor or new entrant would seek to do so, given the costs involved in building a fixed line network. Indeed, this would also be unnecessary duplication of critical investment. Because of this, Eircom is obliged, pursuant to European Union ("EU") and domestic law, to provide access to the local loop to its competitors at regulated prices.

1.3 A sub-loop, on the other hand, is that portion of the local loop which runs from a street side cabinet to a home or premises. It therefore excludes that portion of the local loop between the exchange and street side cabinet.

1.4 LLU is the regulatory wholesale access product that Eircom is obliged to make available at a regulated price to its competitors (who are also known as other authorised operators ("OAOs")). An OAO using LLU rents a local loop from Eircom and installs its own equipment in the local exchange in order to provide communications services. Similarly, SLU is where an OAO rents only the sub-loop from Eircom and installs its own equipment beside or where possible in the Eircom cabinet. SLU is not used to any significant extent but may become important (for technical reasons) if Eircom were to replace the current copper cable between the exchange and cabinet with fibre optic cable. However, to date, this has not happened.

1.5 An affordable, economically viable LLU product is critical to effective and sustainable competition in the electronic communications sector. LLU enables OAOs to provide important communications services, particularly broadband, to consumers and businesses. LLU gives OAOs, following significant investment, direct control over their own hardware used to provide broadband services to their customers from the local exchange. This enables OAOs to compete more effectively with Eircom on price, choice, quality and innovation.

1.6 However, the adoption of LLU in Ireland by Eircom's competitors has been negligible to date. Indeed, Ireland compares unfavourably with most other European countries in this respect. The current price for LLU in Ireland is €16.43[1] and is the highest charge in Europe[2]. The average LLU price across other European countries is approximately €9.28. ComReg believes that the current LLU price has acted as a major barrier to competition in LLU based broadband in Ireland and needs to be amended if ComReg is to fulfil its statutory obligation to promote competition and

[1] As determined in Decision Notice and Direction: Local Loop Unbundling – Review of Eircom's ULMP Monthly Rental Charge; 5 November 2004.

[2] 14th Implementation Report, dated 24 March 2009.

the interests of end users.

1.7 ComReg has conducted an extensive review of the LLU and SLU rental charges. It has consulted with industry and Eircom during a period of two years in order to complete its review. This decision is the culmination of that review.

1.8 In this review and consultation, ComReg adopted the following process:

- First, ComReg determined what costing methodology it should use to model the costs of Eircom's access network.
- Second, ComReg used its chosen methodology (and the most up to date technologies and approaches) to develop an improved and revised model to simulate the costs of Eircom's entire access network.
- Third, ComReg developed a pricing methodology which it used in conjunction with the model and its inputs, to determine a national price for LLU and SLU.
- Finally, ComReg determined a maximum monthly rental charge for LLU and SLU.

1.9 This decision is therefore the result of a series of public consultations with all stakeholders. Eircom, in particular, has had full access to the process and model used throughout the process, from initiation in 2007 to its conclusion and has contributed extensively. Except as noted below and elsewhere within this document a large degree of consensus was achieved. As with any such project ComReg has had to exercise a degree of judgement in order to arrive at a reasonable and proportionate outcome. By carefully taking all views into account, ComReg believes that its decision is robust and proportionate. It has also ensured that it is consistent with industry needs, Eircom's legal rights and ComReg's policy objectives under the legislative framework.

1.10 The revised charges are based on a specific form of modelling, namely bottom up long run average incremental costs ("BU-LRAIC"), the use of which is well established in general in telecommunications, and in particular in the case of LLU pricing. This approach relies on an engineering model of Eircom's network to which Eircom's cost data was applied where possible and appropriate, and having taken due account of the need to allow for efficient network design and work practices. This approach was taken for a number of reasons including, inter alia, the need to set the correct investment incentives to Eircom and other operators: the desirability of allowing only efficient costs to be recovered: and the lack of requisite data from Eircom's accounting records. The use of bottom-up models of this nature was expressly found by the European Court of Justice ("ECJ") in the *Arcor*[3] case to be permissible, both in principle under the Access Directives and in the reasonable exercise of a national regulatory authority's ("NRAs") discretion in so far as the parameters of that model are determined.

1.11 A principal characteristic of a model of this nature is that it allows for the cost of a newly designed modern efficient network. The cost of building such a network today will generally be much higher than the cost actually incurred in the past because of

[3] *Arcor AG & Co. KG v Federal Republic of Germany* [Case C-55/06] (Referred to throughout this document as *"**Arcor**"*).

price inflation. On the other hand such a network would cost considerably less to run than the actual legacy network. The interplay of these two factors will, broadly speaking, determine whether the price arrived at will be greater or less than the incurred (i.e. accounting) cost. Costs derived on this basis reflect precisely the situation that another competing infrastructure investor would face which is why this methodology sets the correct build or buy price signals to other players. From Eircom's perspective, because the new price reflects modern (higher) prices and current best design and operational practice, it should be in a position to invest profitably where it does so efficiently.

1.12 Eircom has argued that costs are higher in Ireland, when compared to many other European countries because of the large amount of rural housing in this country. ComReg's model is consistent with this view. However, Eircom also believes that all of these costs should be recovered within the price of LLU. ComReg's view in this document, on the other hand, is that other operators should pay only for the lines that they are likely to unbundle. ComReg is of the view that the cost of lines that are unlikely to be unbundled over the period of this price control should be recovered by other means. This approach is consistent with Regulation 14(3) of the Access Regulations[4] which provides that "*The Regulator shall ensure that any cost recovery mechanism or pricing methodology that it imposes under this Regulation serves to promote efficiency and sustainable competition and maximise consumer benefits*….". It is also an approach that has been adopted in other EU countries.

1.13 In effect, the revised maximum LLU monthly rental charge allows Eircom to recover the costs associated with exchanges that OAOs are likely to consider economically and commercially feasible for unbundling, during the price control period. ComReg has defined this boundary by reference to two criteria. It has decided that exchanges of less than 2,500 lines are likely to be uneconomic from the perspective of an OAO planning to unbundle, and has, except as noted below, excluded the cost of these lines from the price. Similarly ComReg has excluded the cost of lines longer than 5km on the basis that these lines are unlikely to be technically capable of carrying broadband. In both cases ComReg has included a small proportion of the cost of excluded lines in order to cater for the possibility of exceptions. These judgements have been informed by extensive engagement with potential LLU users and Eircom.

1.14 ComReg has adopted a similar approach to setting the maximum SLU monthly rental charge. ComReg commissioned a report by Analysys Consulting in 2008[5] which examined the business case for SLU. ComReg considered this report and other relevant evidence in detail. As a result, ComReg concluded that SLU is unlikely to happen outside of Dublin and only street cabinets with a minimum of 300 lines would be economically viable for SLU. ComReg therefore uses the 300 lines threshold in cabinets for determining the maximum SLU monthly rental charge. ComReg has concluded, conservatively, that SLU is unlikely to be used outside those areas where cable services are available or the major urban areas (Dublin, Cork, Galway, Limerick and Waterford) during the price control period.

1.15 In conducting this review ComReg has been careful to balance the competing

[4] European Communities (Electronic Communications Networks and Services) (Access) Regulations 2003 ("the Access Regulations").

[5] Information Notice No. 08/10 – Sub Loop Unbundling Report Prepared by Analysys Consulting Limited for ComReg. ComReg Document No 08/10a – Final Report for ComReg – Business Case for Sub Loop Unbundling in Dublin; published on 23 January 2008.

interests of the various stakeholders. The parties seeking access to the local loop will have interests in the charge being set at a low level, while the local loop provider will, by contrast, have interests in the charge being set at a higher level. Accordingly, ComReg has taken into account the views of all respondents while having regard to ComReg's own policy objectives.

1.16 In arriving at its decision, ComReg must balance different objectives. On the one hand, the express goal of the LLU regime is to foster competition by mandating access to the local loop on an efficient cost basis. On the other hand, there is a need to allow the local loop provider to recover appropriate costs. These objectives are summarised in the Access Directive[6] as follows:

> "*When a national regulatory authority calculates costs incurred in establishing a service mandated under this Directive, it is appropriate to allow a reasonable return on the capital employed including appropriate labour and building costs, with the value of capital adjusted where necessary to reflect the current valuation of assets and efficiency of operations. The method of cost recovery should be appropriate to the circumstances taking account of the need to promote efficiency and sustainable competition and maximise consumer benefits".*

1.17 ComReg concludes in this decision that the maximum monthly rental for LLU is **€12.41.** The maximum monthly rental charge for SLU is **€10.53.** These maximum charges will be in place from the effective date of this decision until 30 November 2012. In ComReg Document No. 09/39 ComReg proposed prices of €12.18 and €9.79 for LLU and SLU respectively. However, following the consultation process a number of minor adjustments were made to the final BU-LRAIC model which resulted in revised maximum charges as set out above.

1.18 The maximum charges determined by ComReg in this decision do not prevent Eircom from charging lower prices for LLU and SLU monthly rental, when appropriate, provided that any proposed lower charges are subject to ComReg's prior review and approval and that Eircom is in compliance with its regulatory obligations and other laws. Eircom has access to the entire cost model (including costing data) and the associated assumptions used in the modelling process in determining the current maximum charges. In addition, during the price control period, Eircom should be aware of the actual level of unbundling of operators at large and small exchanges (or at cabinets) as well as the actual length of lines being unbundled by operators at those exchanges. Depending on the actual level of unbundling, Eircom may have an opportunity to charge LLU and SLU monthly rental prices below the maximum charges set by ComReg in this decision which would still allow for the full recovery of the efficient costs of providing LLU/SLU.

1.19 In conclusion, ComReg believes that this decision presents a practical and fair solution to LLU pricing that takes in to account the interests of Eircom, industry and consumers. It is intended to promote efficiency, sustainable competition and consumer welfare. In the wider context, this decision is an important step in putting an innovative and competitive electronic communications sector at the heart of national economic recovery and the development of the "Smart Economy".

[6] 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 ("the Access Directive").

2 Introduction

2.1 This decision document describes the overall process adopted by ComReg over the past two years when constructing a model of Eircom's access network and the methodologies applied in order to determine the final maximum LLU and SLU monthly rental charges up to 30 November 2012.

2.2 These prices are the culmination of an extensive and lengthy consultation between ComReg, Eircom and the rest of industry, during 2008 and 2009.

2.3 ComReg has discussed the matters consulted upon within each of the three consultation documents and how the final conclusions in relation to each consultation are now reflected in this document.

2.4 This decision was preceded by three consultation documents:

- ComReg Document No. 08/56
- ComReg Document No. 09/39
- ComReg Document No. 09/62.

2.5 In **ComReg Document No. 08/56**[7] ComReg consulted on possible pricing methodologies to use in modelling the Eircom access network. The main areas consulted upon included:

- Appropriate pricing methodology for modelling the access network.
- Probability of unbundling long lines.
- Probability weighting factor.
- Adjustment for long lines.
- Price control period.

2.6 In **ComReg Document No. 09/39**[8] ComReg gave a description of the actual construction of the model of the access network. The main areas consulted upon included:

- The model inputs in relation to the capital costs and operating costs (and indirect capital costs) of running an access network.
- The application of the pricing methodology principles (taken from ComReg Document No. 08/56) to determine the maximum LLU and SLU monthly rental charges.

2.7 Following operator responses to ComReg Document No. 09/39, it was clear that a number of important matters needed further careful analysis and that industry input was necessary to do this thoroughly and transparently. In **ComReg Document No.**

[7] Proposals for Local Loop Unbundling ("LLU") Pricing Methodologies; 10 July 2008 (Referred to throughout this document as "**ComReg Document No. 08/56**").

[8] Response to Consultation Document No. 08/56 & Further Consultation on Local Loop Unbundling ('LLU') and Sub Loop Unbundling ('SLU') Monthly Rental Charges; 8 May 2009 (Referred to throughout this document as "**ComReg Document No. 09/39**").

09/62[9] ComReg sought further views from industry in relation to four specific areas:

- Price trends
- Evolution of working line volumes
- Working line threshold
- Long lines.

2.8 A number of responses were received for all three consultation documents, as set out in the table below.

	Response to ComReg Document No. 08/56	**Responses to ComReg Document No. 09/39**	**Response to ComReg Document No. 09/62**
1.	Eircom	Eircom	Eircom
2.	BT Communications Ireland Limited ("BT")	BT	BT
3.	Vodafone Ireland Limited ("Vodafone")	Vodafone	Vodafone
4.	Magnet Networks Limited ("Magnet")	Magnet	Magnet
5.	Smart Telecom ("Smart")	Smart	IrelandOffline
6.	UPC Ireland ("UPC")	ALTO (Alternative Operators in the Communications Market)	
7.	Irish Farmers Association ("IFA")		

2.9 Respondents' views and ComReg's consideration of them are discussed in detail throughout the sections below.

2.10 **Section 3** of this document contains ComReg's conclusions regarding the appropriate pricing methodology principles to adopt for setting the maximum LLU and SLU monthly rental charges.

2.11 **Section 4** of this document contains ComReg's conclusions regarding the model inputs in relation to Eircom's copper access network, with particular emphasis on the capital costs, the operating costs and working line volumes.

2.12 **Section 5** of this document contains ComReg's conclusions on the application of ComReg's preferred pricing methodologies used to determine the revised maximum LLU and SLU monthly rental charges.

[9] Further Input to Consultation Document No. 09/39 on Local Loop Unbundling ('LLU') and Sub Loop Unbundling ('SLU') Monthly Rental Charges; 27 July 2009 (Referred to throughout this document as "**ComReg Document No. 09/62**").

2.13 **Section 6** contains operator comments in relation to the draft decision instrument which was set out in ComReg Document No. 09/39. This section also contains ComReg's response to each of the comments raised.

2.14 **Section 7** contains ComReg's decision instrument and directions regarding the final maximum LLU and SLU monthly rental charges.

2.15 **Section 8** contains the Regulatory Impact Assessment ("RIA") in relation to ComReg's preferred pricing option and the likely impacts on the various stakeholders.

3 Local Loop Unbundling and Sub Loop Unbundling Pricing Methodologies

3.1 In ComReg Document No. 08/56 ComReg consulted on different possible pricing methodologies for setting LLU charges. Subsequently in ComReg Document No. 09/39 ComReg detailed non-confidential operator responses[10] and ComReg's preliminary conclusions regarding the appropriate pricing methodology for LLU. The full details of ComReg's preliminary views and reasoning in this regard are contained in ComReg Document No. 09/39 and readers are referred to these documents for a comprehensive explanation of ComReg's views. However, the main conclusions on pricing methodologies are summarised below.

(i) The pricing methodology for setting the LLU and SLU maximum monthly rental charges is BU-LRAIC taking into account, where relevant, the actual costs incurred by Eircom **(*"Adopted Pricing Methodology"*)**.

(ii) The new maximum LLU monthly rental charge takes into account the fact that some lines are more likely than others to be feasible for unbundling during the price control period **("*Probability of Unbundling Lines*")**.

(iii) LLU costs are calculated by giving a weighting factor to those exchange sites more likely to be unbundled by OAOs than to the other exchange sites where unbundling is unlikely to be feasible during the price control period **("*Probability Weighting Factor*")**.

(iv) The maximum loop length considered for calculating the LLU maximum monthly rental charge is 5km. An element of costs associated with these long lines, is taken into account, as there is a small probability that some lines (albeit unlikely) may be used by OAOs for LLU **("*Adjustment for Long Lines*")**.

(v) The price control period is from the effective date of this decision to 30 November 2012 **("*Price Control Period for LLU Charge*")**.

3.2 The application of the pricing principles/methodologies, that ultimately determine the maximum LLU and SLU monthly rental charges, is described in greater detail in Section 5 of this document.

3.3 Further information on these views is provided in the following sections. The main issues were as follows:

LLU:

1. Adopted Pricing Methodology
2. Alternative Infrastructure and Pricing Methodologies in the EU15
3. Alternative Infrastructure and Pricing Methodologies in Ireland
4. Probability of Unbundling Lines
5. Adjustment for Long Lines
6. Probability Weighting Factor

[10] Eircom, Vodafone, BT, Smart, UPC and Irish Farmers Association ('IFA').

7. Operator LLU Investment Plans
8. Impact of Inflation on LLU Charge
9. Price Control Period for LLU Charge

SLU:

10. SLU and BU-LRAIC Pricing Methodology
11. SLU Footprint
12. SLU Operator Investment Plans
13. Impact of Inflation on SLU Charge
14. Price Control Period for SLU Charge

1. Adopted Pricing Methodology

3.4 ComReg is of the view that the principle approaches to setting cost oriented prices are:

- Historical Cost Accounts ("HCA")
- Current Cost Accounts ("CCA")
- Top Down Long Run Average Incremental Costs ("TD-LRAIC")
- Bottom Up Long Run Average Incremental Costs ("BU-LRAIC").

3.5 ComReg concludes that, BU-LRAIC is the most appropriate methodology to use for modelling Eircom's access network. Firstly, and as a general point, the method is legally permissible. In the *Arcor*[11] case the ECJ held that, in the absence of any specific modelling direction in the Access Regulations (or otherwise in EU law) that:

"*Community law leaves to the* [national regulatory authorities], *on the basis of the applicable law, the choice of cost-accounting method which they deem most appropriate in a specific case*"

and that:

"*Community law does not preclude them, in the absence of complete and comprehensible accounting documents, from determining the costs on the basis of an analytical bottom-up or top-down cost model*"[12].

3.6 Secondly, the BU-LRAIC methodology provides the correct build or buy price signal for alternative operators. It is an engineering model which incorporates current engineering techniques and cost data. This model is then populated with cost data which is primarily obtained from Eircom but which is adjusted to reflect efficient best practice. ComReg has also implemented this model using a "scorched node" approach, which, to the extent practicable and relevant, reflects Eircom's actual network topography. This ensures that the model retains an appropriate degree of

[11] *Arcor AG & Co. KG v Federal Republic of Germany* [Case C-55/06] (Referred to throughout this document as *"**Arcor**"*).

[12] See paragraphs 132-134.

realism. Therefore, ComReg's model to a certain extent combines elements of a top-down approach, and, involves a degree of reconciliation of top-down and bottom-up approaches that the ECJ in *Arcor* considered to be "*advised for the foreseeable future*"[13].This approach also means that from Eircom's perspective, prices reflect the actual cost structure that it would face today and as a result, it should be in a position to invest profitably once it does so efficiently.

3.7 ComReg concludes that:

- The BU-LRAIC model will provide efficient incentives for alternative platform providers, Eircom and potential new entrants to appropriately invest in infrastructure and will ensure that Eircom recovers its efficient costs and a reasonable rate of return.
- The use of the BU-LRAIC model accords with the principles outlined in the ECJ judgment in *Arcor*.

3.8 ComReg considered the three alternative methodologies, but concluded that they are not appropriate for the purpose of deriving the monthly rental charges for LLU and SLU in Ireland. In particular, ComReg is mindful of the ECJ finding in *Arcor* that *"the calculation basis of costs cannot be based exclusively either on the costs which represent the construction ex nihilo by an operator, other than the notified operator, of a new local access infrastructure for the provision of equivalent telecommunications services ('the current cost') or on the costs actually incurred by the notified operator and taking account of depreciation already made ('the historic cost')*"[14].

3.9 In addition, however, there are other reasons, as discussed below, in this specific case why the alternative methodologies are not appropriate.

3.10 Fully Distributed Costs ("FDC") or HCA solely is not an appropriate basis on which to set regulated prices. The principal reasons are that historic data may be very old, the data may include inefficiencies or the costs may not be directly relevant to the particular product/service price being set, or prices may have changed materially over time and this is likely to result in incorrect price signals being sent to industry.

3.11 Similarly, TD-LRAIC is inappropriate in this context because Eircom's current network was built piecemeal over many years and has, in common with many other former state owned monopolies, inherited legacy inefficiencies. These legacy issues are often not representative of current engineering rules employed in developing a network. The calculation of any efficiency adjustment to compensate for legacy issues could be difficult. Consequently, and unless a significant amount of work is carried out there could be a significant risk of including an inappropriate efficiency adjustment in the regulated price assessment thereby, providing Eircom, OAOs and the wider market with inefficient price signals.

3.12 ComReg notes that FDC and CCA together might in theory be appropriate because:

- It takes account of the current costs that would be incurred by an operator upon entering a market.
- It uses actual financial data of the operator as the basis for cost calculation.

[13] See paragraph 130.

[14] See paragraph 87.

3.13 However, ComReg believes the use of FDC / CCA would not be possible in practice at this time since Eircom does not produce accounts for the access network in this format. ComReg believes that Eircom cannot produce the required audited CCA information within a reasonable timeframe for the purposes of this LLU price review. As with FDC / HCA the data would need to be subjected to efficiency adjustments.

3.14 Accordingly, ComReg concludes that BU-LRAIC is the most appropriate methodology to model the Eircom access network. It should be noted that the points concluded above in relation to the BU-LRAIC methodology are discussed in greater detail in ComReg Document No. 09/39.

Conclusion in relation to BU-LRAIC Methodology and LLU Charge:

The pricing methodology for setting the LLU maximum monthly rental charge is BU-LRAIC, taking into account, where relevant, the actual costs incurred by Eircom.

2. Alternative Infrastructure and Pricing Methodologies in the EU15

3.15 A review of EU comparator countries indicates, in cases where there is evidence that operators, with their own alternative local loop infrastructure (e.g. cable or fixed wireless access (“FWA”)) have made, or have plans to make significant investments[15], the preferred methodology in the EU15 is BU-LRAIC.

3.16 Where there is evidence to suggest that operators using alternative local loop infrastructure have not made significant investment to date and have no plans to do so, the most preferred methodology in the EU15 is CCA, where practical. (Please refer to ComReg Document No. 08/56 for more detail.)

3. Alternative Infrastructure and Pricing Methodologies in Ireland

3.17 Consistent with the ECJ’s ruling in *Arcor*, ComReg considers that if there is actual or planned alternative infrastructure, it must be taken account of when setting a cost oriented LLU monthly rental charge.

3.18 Because of the extent of infrastructure deployment and investment in Ireland, such as cable or wireless infrastructure, a CCA methodology would not be appropriate if applied across the whole of Ireland.

3.19 An alternative might be to apply a BU-LRAIC methodology in places where alternative access infrastructure is likely to become available and competitive and to apply a CCA methodology elsewhere. However, ComReg concludes that this would more likely create inappropriate incentives and could lead to de-averaged wholesale pricing in Ireland, which is not a desirable outcome from a policy perspective since it might mitigate against rural users.

3.20 Applying this approach would also likely prove difficult in practice. Eircom would have to produce, not only CCA accounts, but CCA accounts on a geographically de-

[15] This is evident by a recent announcement by UPC (Cable Operator) that it plans to invest €90m this year in upgrading its network. http://www.siliconrepublic.com/news/article/12855/business/upc-builds-120mbps-ngn

averaged basis. This would involve frequent changes and consequent regulatory and investment uncertainty and is therefore considered unsuitable.

3.21 ComReg concludes that these considerations support the use of BU-LRAIC because in Ireland there is actual and planned alternative access infrastructure investment. ComReg also concludes that it would not be appropriate to apply CCA on a national basis. It should be noted that the points concluded above in relation to alternative infrastructure and pricing methodologies are discussed in greater detail in ComReg Document Nos. 08/56 and 09/39.

Conclusion in relation to BU-LRAIC and Investment:

The BU-LRAIC methodology applied, solely on a national basis provides Eircom and the OAOs with the most appropriate price signals to encourage efficient investment decisions.

4. Probability of Unbundling Lines

3.22 ComReg concludes that it is appropriate to calculate the LLU monthly rental charge taking into account the fact that lines in smaller exchanges are less likely to be unbundled in the medium term and for at least the price control period. This is mainly because smaller exchanges are more likely to be uneconomic from the perspective of a OAO that is planning to spend large amounts of capital now. The business case for such investment would be targeted at large exchanges initially to benefit from economies of scale and scope.

3.23 ComReg does not consider that OAOs should be required to pay for the cost of lines that they would not be prepared to unbundle due to the length of lines, the presence of pair gains, poor copper connections, or other economic considerations such as economies of scale. This avoids other operators contributing to the costs of exchanges via the LLU monthly rental charge where unbundling is wholly unlikely to occur during the price control period. As discussed below, ComReg has also used a weighting exercise to ensure that all exchanges (large and small) contribute in some way to the cost of LLU.

3.24 As will be discussed later in this document, ComReg uses a threshold of lines in exchanges in determining the appropriate maximum LLU monthly rental charge. This was arrived at by reviewing actual exchanges unbundled to date and the likely unbundling that could reasonably be envisaged during the price control period following discussions with Eircom and unbundlers.

3.25 ComReg is of the view that the cost of lines which are excluded for the price of LLU should be recovered by other means. This could be by way of other wholesale/retail line rental prices or, possibly might be addressed in the context of a universal funding application.[16]

[16] The European Communities (Electronic Communications Networks and Services (Universal Service and Users'Rights) Regulations 2003, allows an operator who has been designated as a universal service provider to seek funding for the cost of uneconomic service provision in certain circumstances.

3.26 It should be noted that the points concluded above in relation to the probability of unbundling lines are discussed in greater detail in ComReg Document No. 09/39, which accordingly, forms part of the reasoning in the present decision also.

3.27 ComReg's approach in this regard is discussed in detail in **Section 5** of this document.

Conclusion in relation to Probability of Unbundling Lines:

The LLU maximum monthly rental charge takes into account the fact that some lines are more likely than others to be feasible for unbundling during the price control period.

5. Adjustment for Long Lines

3.28 ComReg acknowledges that the copper network can support narrowband services as well as broadband. However, as outlined in the introduction to ComReg Document No. 08/56, the ability of OAOs to offer broadband services is vital for fostering competition.

3.29 The ability to provide broadband services over copper lines is more difficult when the loop length is in excess of 5km. Indeed, Eircom's statements to the Joint Oireachtas Committee on 11 March 2009, suggest that this is generally true:

"*Regardless of which type of copper line is involved, there is a problem if the distance is more than approximately 5 km. The distance from an individual's home or business is measured not as the crow flies but in terms of how the network runs. After a particular distance, the signal becomes so weak that it does not allow the modem to synchronise up for DSL broadband*"

3.30 However, in order to enhance the already conservative nature of its LLU price calculation, ComReg has included an element of costs associated with long lines, utilising the x% and 1-x% approach in relation to small exchanges, to take into account the probability (albeit unlikely) that some lines may be used by OAOs for LLU. This approach is discussed in detail in **Section 5** of this document. It should be noted that the points concluded above in relation to the adjustment for long lines are discussed in greater detail in ComReg Document No. 09/39.

Conclusion in relation to Adjustment for Long Lines:

The maximum loop length considered for the calculation of the LLU monthly rental charge is 5km. An element of costs associated with long lines, utilising the x% and 1-x% approach in relation to small exchanges, is accounted for as there is a probability that some long lines (albeit unlikely) may be used by OAOs for LLU.

6. Probability Weighting Factor

3.31 Notwithstanding the thresholds discussed above there may be exceptional lines and exchanges. To allow for this ComReg has increased the price to allow for the cost of a proportion of uneconomic exchanges and long lines. This is done by means of a weighting factor. In summary, the variation in the feasibility of unbundling certain exchanges in the LLU costs is reflected by giving x% weighting to the costs of those exchange sites which are more likely to be unbundled and 1-x% weighting to the costs of the other exchanges.

3.32 By applying this probability weighting, ComReg's approach ensures that all the working lines in the BU-LRAIC model contribute to the LLU monthly rental charge, but based on an economic appreciation of the relative importance of particular exchanges for LLU unbundling in Ireland during the price control period.

3.33 ComReg has considered, but it has not formed part of this decision, the possible effect of next generation access networks ("NGN") on unbundlers' likely plans as there is little immediate prospect of significant NGN roll out and this consideration does not appear to be a major part of unbundlers' thinking at present. However, ComReg believes that LLU can be a key enabler of NGN investment.

3.34 **Section 5** of this document contains further analysis of the weighting factors utilised in the LLU cost assessment. The full details are discussed in ComReg Document No. 09/39.

Conclusion in relation to Probability Weighting Factor:

In determining the LLU monthly rental charge, the LLU costs are calculated, by giving x% weighting to those exchange sites and long lines which may be unbundled by OAOs and 1-x% weighting to the other exchange sites and long lines where unbundling is unlikely to be feasible during the price control period.

7. Operator LLU Investment Plans

3.35 During the LLU price review, ComReg met OAOs and other interested parties on a confidential basis, in order to establish their commitment to LLU going forward, the criteria that they would use in determining which exchanges to unbundle and any costs (other than the regulated costs) that they would incur. While the information provided in this regard was helpful, it was not determinative.

8. Impact of Inflation on LLU Charge

3.36 ComReg is of the view that inflation (or deflation) should be accounted for in the regulatory price. However ComReg also considers that the appropriate solution is to set a stable LLU price that includes an inflationary (deflationary) adjustment for the underlying efficient costs incurred by Eircom. There are a number of ways that this may be done, but (as discussed in **Section 4**) ComReg believes that the LLU price should be set according to the inflation (or deflation) adjusted costs that would be incurred by an efficient operator during the price control period.

3.37 ComReg believes that this approach provides appropriate suitable balance between the OAOs, need for stability in LLU prices and Eircom's request to have the cost of inflation (and deflation) recognised in its regulated prices.

3.38 There are many different measures of inflation (and deflation) that may be adopted. ComReg concludes that CPI is not the appropriate inflationary index to use in this context due to the concern that CPI trends may not adequately reflect the actual price trends of the relevant assets in this context. Therefore, as discussed in **Section 4**, ComReg concludes that it is instead appropriate to use a set of more specific price indexes/trends in the model. It should be noted that the points concluded above in relation to the impact of inflation on the LLU charge are discussed in greater detail in ComReg Document No. 09/39.

Conclusion in relation to Inflation on LLU Charge:

In determining the LLU maximum monthly rental charge a set of specific price indexes/trends are used in the BU-LRAIC model (rather than simply CPI trends) in order to take account of inflation and current deflation.

9. Price Control Period for LLU Charge

3.39 ComReg concludes that the maximum LLU monthly rental charge should be set from the effective date of this decision until 30 November 2012.

3.40 This period allows sufficient time for the development of the LLU market, infrastructure investment by OAOs and gives Eircom the opportunity to implement efficiencies. Alternative platform providers (e.g. cable and FWA) will also be provided with a degree of certainty in relation to LLU market development.

3.41 It should be noted that the points concluded above in relation to the price control period are discussed in greater detail in ComReg Document No. 09/39.

Conclusion in relation to the Price Control for the LLU Charge:

The LLU maximum monthly rental charge is effective from the date of this decision until 30 November 2012.

10. SLU and BU-LRAIC Pricing Methodology

3.42 ComReg concludes that BU-LRAIC is the most appropriate method for assessing the cost of SLU in Ireland.

3.43 As SLU is a subset of LLU, ComReg concludes that the application of BU-LRAIC to its calculation is both, rational and consistent.

3.44 It should be noted that the points concluded above in relation to SLU and the BU-LRAIC pricing methodology are discussed in greater detail in ComReg Document No. 09/39.

Conclusion in relation to BU-LRAIC Methodology and SLU Charge:

The pricing methodology for the pricing of SLU is BU-LRAIC, taking into account, where appropriate, the actual costs incurred by Eircom.

11. SLU Footprint

3.45 ComReg concludes that SLU investment by OAOs is unlikely to happen outside the cable network footprint or the major urban areas of Dublin, Cork, Galway, Limerick and Waterford during the price control.

3.46 In a report commissioned by ComReg[17] and published on the ComReg website, Analysys Consulting concluded that only street cabinets with a minimum of 300 lines would be economically viable for SLU in Dublin. ComReg agrees with these conclusions and further to this adopted a conservative approach in that it believes that SLU is unlikely to be adopted outside of any of the major urban areas i.e. Dublin, Cork, Galway, Limerick and Waterford. ComReg believes that the investment required (other than the regulated monthly rental charge) by OAOs, in order to avail of SLU is significant due to the fact that it is not possible for an OAO to co-locate in Eircom's cabinets and therefore it must instead build its own cabinet(s). This represents a significant upfront investment for an OAO.

3.47 It should be noted that the points concluded above in relation to the SLU footprint are discussed in greater detail in ComReg Document No. 09/39.

Conclusion in relation to SLU Footprint:

SLU investment by OAOs is unlikely to happen outside the cable footprint or the major urban areas of Dublin, Cork, Galway, Limerick and Waterford.

12. Operator SLU Investment Plans

3.48 Given the confidential nature of the submissions made by OAOs, this information is not discussed further in this document. While the information provided was helpful, it is not an essential pre-requisite for deriving a cost oriented charge for SLU.

13. Impact of Inflation on SLU Charge

3.49 ComReg is of the view that the SLU monthly rental charge should be stable during the price control period. ComReg already concluded with regard to LLU that CPI is not the appropriate inflationary (or deflationary) index to use in this context, due to the concern that CPI trends may not adequately reflect the actual price trends of the

[17] Information Notice No. 08/10 – Sub Loop Unbundling Report Prepared by Analysys Consulting Limited for ComReg. ComReg Document No. 08/10a – Final Report for ComReg – Business Case for Sub Loop Unbundling in Dublin. Published on 23 January 2008.

relevant assets. Therefore, ComReg concludes that it is appropriate to use a set of more specific price indexes/trends in the BU-LRAIC model for SLU also.

3.50 It should be noted that the points concluded above in relation to the impact of inflation on the SLU charge are discussed in greater detail in ComReg Document No. 09/39.

Conclusion in relation to Inflation on SLU Charge:

In determining the SLU maximum monthly rental charge a set of specific price indexes/trends are used in the BU-LRAIC model (rather than simply CPI trends) in order to take account of inflation and current deflation.

14. Price Control Period for SLU Charge

Conclusion in relation to Price Control for SLU Charge:

The SLU maximum monthly rental charge is effective from the date of this decision until 30 November 2012.

4 Local Loop Unbundling and Sub Loop Unbundling Cost Modelling

4.1 In **Section 3** ComReg concluded that the pricing methodology to be adopted for setting the maximum LLU monthly rental charge is BU-LRAIC, taking into account, where relevant, certain actual costs incurred by Eircom.

4.2 This section summarises how the BU-LRAIC model has been constructed and what model inputs were used. The key areas discussed are the *capital costs, operating costs (and indirect capital costs) and the working line volumes.*

4.3 In relation to the development of the BU-LRAIC model the following general comments are important to note:

- The costing data (capital and operating costs) and the engineering rules contained within the new revised version of the BU-LRAIC model take into account Eircom's costs (adjusted for efficiencies where necessary) and engineering rules to ensure that the model built, is as close to reality as possible while ensuring that Eircom only recovers its efficient costs.

- Eircom has been provided with many opportunities to review and critique the model and make suggestions for possible amendments which have in many cases been accepted by ComReg.

- Given the fact that many of the model inputs are sourced from confidential information submitted by Eircom (adjusted where appropriate) ComReg is necessarily constrained in the level of detail it can present to the public regarding them. However, ComReg has detailed the main inputs to the model, in so far as this is possible given the complexity and amount of detail inherent to the exercise. Accordingly, ComReg has made the process as transparent as possible, given the restrictions associated with confidential information.

- In developing the new BU-LRAIC model, ComReg has improved the overall accuracy of the model (compared to the previous model) by incorporating improved modelling tools that are now available. In particular, it believes that the use of geo-marketing tools to represent the entire country more accurately reflects how a new entrant would perceive the network to be, rather than extrapolating data from a sample of existing exchanges – as was the case in the old model. For the purposes of building a BU-LRAIC model the roads, streets and buildings of Ireland were mapped to ensure the model is representative of the actual network roll out that would be required. This was discussed in considerable detail in ComReg Document No. 09/39 and has also been outlined in Appendix D of this document.

- While the new model is more complex than the previous version it is not radically different from the previous version thus providing for a measure of continuity. Partly as a result of this, and the transparent way in which it has been developed, ComReg does not consider that it introduces a significant level of regulatory uncertainty for Eircom or OAOs.

- ComReg carried out a number of physical site visits during the modelling process in order to gain an understanding of how Eircom's copper access network is deployed in Ireland. In addition, and in order to ensure the robustness of the BU-LRAIC cost model, it was decided to compare the copper access network infrastructure as it is currently deployed by Eircom with the BU-LRAIC cost model to ensure that the model was reasonably consistent with the infrastructure in place on the ground. This "reality check" exercise was carried out at a national level and also at a local level for a number of selected sites. This aspect of the review is also outlined in Appendix D of this document

4.4 It should also be noted that as a result of operator responses to ComReg Document No. 09/39 ComReg further consulted on price trends and the working line volumes (ComReg Document No. 09/62).

4.5 Discussed in the following sub-sections are ComReg's conclusions in relation to the model inputs relating to capital costs, operating costs (and indirect capital costs) and working lines volumes.

Capital Cost Factors

1. Tilted Annuities and Price Trends

ComReg Document No. 09/39: Principles Supporting Conclusions

4.6 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[18] and due to the fact that the method reasonably reflects changes in the market value of an asset. This approach was chosen by many NRAs in Europe including ARCEP (France), NITA (Denmark), BIPT (Belgium) and PTS (Sweden).

4.7 If asset prices are falling, an operator will know that deploying its network in the future rather than today will result in a lower cost base. Conversely, its cost base would be reduced by investing sooner, when asset prices are rising.

4.8 Thus, in an efficient market, operators should account for the future movements of prices when deciding on the timing of potential investments. ComReg therefore considered it important that regulated charges take into account this market behaviour in order to provide appropriate make/buy signals for both Eircom and the OAOs.

4.9 One way of achieving this is through a tilted annuity formula because:

- If prices are falling then the tilted annuity formula allows a higher depreciation charge in the early years of an asset's life and allows lower charges in later years.
- Similarly, if prices are rising then the tilted annuity formula allows lower depreciation charges in the early years and higher charges in the later years.

4.10 In ComReg Document No. 09/39, ComReg was of the preliminary view that this was 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. The implementation of the tilted annuity formula is further discussed below.

[18] See for example PTS, Sept 2007, Model Reference Paper (rev B) Guidelines for the LRIC bottom-up and top-down models, IBPT, Bottom-up model for interconnection description of the methodology, Prepared by BIPT In collaboration with Bureau van Dijk Management Consultants, 08 June 2004, ARCEP, April 2005, Consultation on copper local-loop costing methods, IRG, January 2006, Principles of Implementation and Best Practice regarding the use of current cost accounting methodologies as applied to electronic communication activities.

4.11 In order to implement the tilted annuities, it was necessary for ComReg to consider the future price trends for the relevant LLU assets. In doing so, ComReg considered that it is appropriate to focus on long-term price trends because:

- Long-term prices better reflect the considerations made by investors when considering potential deployments.
- There are practical difficulties with generating robust short-term price forecasts, particularly, in the current market context.

4.12 In addition, ComReg considered it appropriate to use price forecasts that are directly relevant to the assets in question, rather than applying more generic price indices such as CPI, as these can be expected to provide a more robust estimate of future price movements.

4.13 In deriving these alternative price trends, ComReg proposed to distinguish between those assets that are predominantly copper based (copper cable) and those that are not, that is assets such as chambers, trenches, jointing closures, cable installations and so forth.

4.14 In the case of non-copper based assets, ComReg considered three different approaches to determining the relevant price trends:

- Price trends assessed in the 2003 version of the LLU BU model, which had been observed over the period 2000 to 2003
- Price trends observed over the longer historical period from 2000 to 2007
- Forecasts of the asset cost evolution over the future period 2008-2012, based on economists' forecasts on labour inflation, CPI or Harmonised Index of Consumer Prices ("HICP").

4.15 ComReg was of the preliminary view in ComReg Document No. 09/39 that it was appropriate to focus on long-term price trends and therefore, considered that the second of these options was more appropriate than the first.

4.16 ComReg tested the reliability of the third option by considering whether previous changes in asset prices matched previous changes in the CPI [or HICP]. ComReg found that these indices did not accurately explain previous price movements.

4.17 While the second option was considered the most appropriate method of estimating future price changes, ComReg also considered that it would be unrealistic to exclude recognition of the cyclical movements in the economy. It therefore proposed to base its assessment of future prices on the full economic cycle, which it does not expect to be completed until at least 2012.

4.18 In order to achieve this (and as illustrated by the equation below) ComReg proposed to adjust the historical price trend by the ratio of forecast price inflation to historical price inflation. Thus, if inflation between 2000 and 2007 was 4% per annum, and forecast inflation from 2008 to 2012 was 2% per annum, the historical price trend of non-copper assets would be reduced by half (2%/4% x 100 = 50%) on the 2008 to 2012 period.

4.19 In ComReg's view, the advantage of this approach was that it was closely linked to the path of historical prices, while simultaneously including a measure to account for the current economic slowdown. In addition, taking account only of a period of relatively high inflation until 2007, and disregarding more modest inflation (or deflation) in the period until 2012, would be unrepresentative of the full cycle.

4.20 The methodology proposed by ComReg in ComReg Document No. 09/39 is discussed below.

$$\textbf{Average price trend 2008-2012} = \textit{Average price trend 2000-2007} \times \frac{\textit{Average labour inflation (or CPI) 2008-2012}}{\textit{Average labour inflation (or CPI) 2000-2007}}$$

4.21 For copper cables, ComReg again considered that long-term price forecasts represented the most appropriate basis for its assessment. ComReg noted that there is a global market for copper and that there are many analysts providing forecasts on copper prices. ComReg's internal analysis indicated that these forecasts were likely to provide a reasonable basis on which to estimate the future price of Eircom's copper-based assets. ComReg therefore adopted a price trend for copper in each year of the proposed price control period based on its analysis of the price forecasts made by a number of reputable analysts[19].

Consultation Questions in ComReg Document No. 09/39:

Q.1. Do you agree that the period from 2000 to 2012 is a reasonable length of time to evaluate the price trend data for the copper access network assets? Please state the reasons for your response.

Q. 2. Do you agree that the basis used for forecasting price trends for copper and the other local loop assets (i.e. poles, trenches, chambers, MDFs, street cabinets, etc) appears reasonable? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/39:

4.22 With regard to Question 1, BT, Magnet, Smart and Vodafone believed that the period from 2000 to 2012 was a reasonable length of time to evaluate the price trend data for the copper access network assets.

4.23 Eircom stated that there is no reason to believe that any particular time period over which price changes are measured would provide a universal guide to the appropriate tilts of all the different asset classes in the access network. Furthermore, Eircom stated that it is impossible to know if the period from 2000 to 2012 is an appropriate period over which to measure price changes, as the price changes between now and the end of 2012 are unknown until the end of the control period.

4.24 Both Smart and Magnet did not believe that the weighting applied to the costs went far enough to reflect current realities. Both of these operators highlighted that the Economic and Social Research Institute ("ESRI") has indicated unemployment rates

[19] The 21 analysts used at that time were Metal Bulletin Research, Barclays Capital, Credit Suisse, Merrill Lynch, Macquarie Bank, Prometeia, Econ Intelligence Unit, Investec, ABARE, ABN Amro, JP Morgan, ANZ, Deutsche Bank, Commonwealth Bank, IHS Global Insight, Morgan Stanley, UBS, BIPE, Citigroup, Wilson HTM, Oxford Economics. See ENERGY & METALS CONSENSUS FORECASTS, Consensus Economics, January 2009.

of up to 16.8% by the end of 2010 and the implications this may have for a number of factors, including labour rates. In addition, both of these operators also suggested that recent developments indicated that CPI for 2009 is likely to be negative to the tune of 3.5%. Smart and Magnet stated that these factors made it important to place increased weight on recent market developments and proposed a weighting factor of an additional 50% for the period 2008 to 2012.

4.25 Vodafone did not agree with the detail of the proposed adjustment to the historical price trend by the ratio of forecast price inflation to historical price inflation. Vodafone believed that the adjustment should reflect the difference between the historical price trend and the forecast price trend, not the ratio as currently proposed by ComReg. Vodafone further believed that the formula applied by ComReg artificially 'gears-up' the impact of inflation. Vodafone recommended that their suggested approach was therefore a superior method to adopt.

4.26 In relation to Question 2, Smart, Magnet and BT agreed with the proposed methodology for forecasting the price trends. As described above, Vodafone indicated that it disagreed with the formula being applied, while Eircom stated that it was concerned about applying tilted annuities in the context of an access network consisting of many assets with long-lives.

4.27 Furthermore, Smart and Magnet stated that they did not believe that the assumptions used in copper pricing were correct. Both of these operators believed that copper and zinc were sensitive to economic activity and stated that the current market was exhibiting falling demand combined with growing over supply, implying that the current rises are likely to be short-lived and that prices are likely to fall over the longer term. These two operators believed that the gains shown in recent months were short lived and fuelled mainly by restocking in China, which is a finite exercise. The two operators referred to analyst views that suggested copper would face weakness in coming months as supportive buying from China tails off and ahead of a seasonally quiet market period. They also referred to the International Copper Study Group ("ICSG") preliminary data published on 20 May 2009 which showed that world copper production outpaced refined usage and that this over production coupled with existing drops in prices would keep copper prices steady or declining for several years to come with an upward sustainable recovery only expected approaching 2013. Both of these operators acknowledged the work carried out by ComReg but believed that further consideration needs to be given to the current reality that the economy is, as they put it, in free fall. These operators believed that ComReg must give further consideration to labour costs, energy costs and contractor costs which should feed into a lower future price for LLU.

4.28 In relation to Question 2 Vodafone re-stated its disagreement with ComReg's price trend formula, while emphasising its agreement with ComReg's proposal to use a tilted annuity depreciation methodology in deriving the annual depreciation charges of the network assets.

4.29 In Eircom's response to Question 2, it stated that where a convincing case can be made for a particular asset class that tilted annuity provides a reasonable proxy for economic depreciation then the tilt chosen should reflect the changing value of the output from that asset over its economic life. Eircom also stated that ComReg had provided no evidence for any asset class that tilted annuity provides a good proxy for economic depreciation. In a separate commentary in Eircom's response, Eircom believed that in the three years of the price control Eircom would only recover 40%

of the modelled capital costs which would have been recovered if the charge were calculated using ordinary or flat annuities. Eircom believed that given the sensitivity of the price to the method of annualisation chosen and the inputs used in the annualisation computation that ComReg should consult further on this issue. Eircom stated that for each asset class ComReg should put forward its reasoning as to which method of annualising costs most closely approximates economic depreciation and what are the appropriate input values for computing the annualised cost for that method. Eircom believed that ComReg should be open to the possibility that different asset classes will require different annualisation methodologies and differing input values. Eircom further stated that implicit in ComReg's use of tilted annuities is that there would be a significant increase in the ULMP price, in future years and that the implications of this have not been articulated despite the fact that stakeholders have a direct interest in understanding these implications.

ComReg's Initial Position following ComReg Document No. 09/39

4.30 Following consideration of operator responses to Question 1 and Question 2 ComReg sought further views from industry in relation to the methodology proposed by Vodafone for the price trends, before taking a final position in relation to price trends and tilted annuities. The details of the further consultation, operator responses and ComReg's final position and conclusion in relation to the price trends and the tilted annuities, are discussed below.

ComReg Document No. 09/62: Principles Supporting Conclusions

4.31 While ComReg was of the view that the methodologies used for calculating the price forecasts within the tilted annuities for LLU pricing were appropriate, ComReg also carefully considered the operator responses received in this regard.

4.32 As described above, Vodafone's response to ComReg Document No. 09/39 included a proposal for an alternative methodology for calculating the price forecast. According to Vodafone, in assessing asset price trends from 2008 to 2012, ComReg should adjust the historic price trends by the difference in CPI rates, rather than adjusting them by the ratio as proposed by ComReg (in Section 4, paragraph 4.48 of ComReg Document No.09/39). Thus, according to Vodafone, ComReg should calculate price trends as follows:

Average Price Trend 2008-12 = Average price trend 2000-2007

\+

Average labour inflation (or CPI) 2008-12

—

Average labour inflation (or CPI) 2000-07

4.33 ComReg therefore requested any further comments that operators had in relation to the Vodafone proposed methodology. Subject to this, ComReg was of the preliminary view that the methodology as discussed in ComReg Document No. 09/39 remained an appropriate one.

Further Consultation Question in ComReg Document No. 09/62:

Q.5. Do you agree that the existing ComReg methodology for calculating price trends, as set out in section 4.48 of Consultation Document No. 09/39, remains appropriate in determining the final LLU charge? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/62

4.34 BT agreed with the ComReg methodology while Eircom and Magnet did not comment on whether they considered the ComReg or the Vodafone formula to be more appropriate. Vodafone disagreed with the ComReg methodology for calculating price trends.

4.35 BT agreed and highlighted that this approach was linked to historical prices as well as accounting for the current economic slowdown.

4.36 Eircom re-iterated its previous concerns in relation to the application of a tilted annuity approach to annualising capital costs and to the plausibility of the long-term price change forecasts that ComReg proposed to apply in the formula. Eircom also stated that ComReg claims to use a price trend from 2000 to 2012 when in fact it is only using actual data from 2000 to 2008 to determine a 40 year trend as (2009 to 2012 utilised forecasted data).

4.37 Magnet referred to its response to ComReg Document No. 09/39 where it agreed with ComReg's methodology but did not believe that the assumptions used in copper pricing were correct. In its response to ComReg Document No. 09/62, it stated that 12 years was a reasonable length of time to evaluate the price trend of copper however, the period chosen is one of the highest CPI periods in the history of the State. It argued that the weighting proposed by ComReg does not go far enough to reflect current realities. It quoted examples from the Central Statistics Office ("CSO") and ERSI to substantiate its call for an additional weighting of 50% to be applied to the price trends for the 2008 to 2012 period.

4.38 Vodafone disagreed and remained of the view that the adjustment should reflect the difference between the historical price trend and the forecasted price trend rather than the ratio as proposed by ComReg. According to Vodafone, ComReg's formula can lead to an overestimate of future average price trends, particularly where historical inflation is low. Indeed Vodafone noted that if historical inflation was zero, then ComReg's formula would result in an infinite price trend.

ComReg's Conclusions

4.39 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.40 An annuity formula is used to apply the cost of capital to the cost of the assets on the network. A tilt is applied to an annuity to reflect the expected changes in the prices of assets and is intended to send better economic signals to market players, giving market players incentives to invest now if prices are expected to increase or delay investment if prices are expected to decline.

4.41 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. Contrary to the "standard annuity formula" which calculates a charge that is constant over the economic life of the asset, the tilted annuity formula calculates an annuity which reflects asset price changes.

4.42 This section sets out ComReg's views on the main points raised by operators in the responses to ComReg Document No. 09/39 and ComReg Document No. 09/62 in relation to appropriateness of the tilted annuities to the Eircom access network, the most appropriate assumptions used for calculating future price trends and the way in which these assumptions (or methodology) should be applied.

4.43 While ComReg believes that the price trends are dependent on the particular approach or assumptions used, ComReg is of the view that it has made every effort to take the most reasonable and proportionate approach in order to determine the price trends of the various assets as part of the overall LLU charge.

4.44 Given that the data used in determining the assumptions for the price trends is based on confidential data provided by Eircom, ComReg is constrained in terms of the level of detail that can be discussed in this regard. However, a number of issues raised by Eircom with regard to the approach or assumptions used by ComReg in determining the relevant price trends used in the model have been set out in bilateral correspondence between both parties.

4.45 In Eircom's response to ComReg Document No. 09/39 it stated that it was sceptical of the appropriateness of using tilted annuities as a methodology for annualising capital costs in the access network. While ComReg notes Eircom's concern about the appropriateness of tilts, ComReg remains of the view that they are appropriate in this context and wishes to emphasise that they have a sound basis for use in price controls. They have been used in access network price controls in countries such as Belgium, Sweden and Denmark. Tilted annuities were also used in determining the LLU price in Ireland in 2003.

4.46 In relation to tilts, Eircom calculated that it would only recover 40% of the modelled capital costs during the period of the price control compared to the position under flat annuities. However, ComReg's view is that flat annuities are not in line with economic depreciation because they do not factor asset price changes. Economic depreciation reflects the change in the market value of an asset over a given period. The market value of an asset is the present value of the revenues that the asset is expected to generate over the remainder of its useful life. By calculating annuities that vary with asset price changes, tilted annuities reflects the change in the market value of an asset and are therefore considered as a good proxy for economic depreciation. For example an asset with increasing prices (same reasoning can be used for assets with decreasing prices) can be used to show why tilted annuities reflect economic depreciation. The tilted annuity formula will derive lower depreciation charges at the beginning of the asset useful life and higher depreciation charges at the end of the asset useful life. This is consistent with economic depreciation: the market value of the asset will indeed decrease slightly at the beginning of its economic life. If the asset is almost new (very little physical depreciation has occurred) the difference between the price of a new asset on the market and the price that could be offered for the given asset is low because prices have increased on the market. On the contrary, the market value of the asset will decrease significantly at the end of its economic life. The asset is old and the value of the asset has decreased due to physical depreciation. But this decrease in the value of the asset is particularly important compared to the value of new assets on the market which have increased. The depreciation charges derived from the tilted annuity formula is therefore in line with economic depreciation.

4.47 As a consequence, comparing the depreciation charges of the model with the depreciation charges calculated with a flat annuity is not relevant. When asset prices are increasing and since flat annuities do not reflect economic depreciation, flat annuities tend to lead to an over-recovery of costs in the early years. It should also be recognised that this does not imply that Eircom will be unable to recover its efficiently incurred costs. This is because applying tilts changes the timing of cost recovery but, other things being equal, does not change the overall return that Eircom makes. Put another way, if the tilt means that Eircom faces a lower regulated price (and hence lower return on its assets) during the forthcoming price control, the tilt should also allow Eircom a higher price (and therefore higher return) in later years. Indeed this can be seen from the graph on page 7 of Eircom's response to ComReg Document 09/39.

4.48 While, other things being equal, changing the timing of the cost recovery does not affect Eircom's ability to recover its efficiently incurred costs, the timing does have an important role to play in providing Eircom and the OAOs with efficient incentives for their investment decisions. The reasons for this were discussed in ComReg Document No. 09/39 but, for the sake of clarity are repeated here. 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 LLU 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.

4.49 With regard to Vodafone's view on the ComReg price-trend methodology, ComReg notes that historical inflation has been above zero, with labour inflation at 3.94% and CPI at 2.55% during the period from 2001 to 2009. Accordingly, ComReg does not consider it likely that its methodology would result in an excessive, or infinite, price trend.

4.50 ComReg has also evaluated the accuracy of its assumptions against the prices observed for one of Eircom's largest contractors between 2008 and 2009. This test satisfied ComReg of the accuracy of its approach. For example, the ratio of trench asset price changes over wage inflation remained stable between the period from 2001 to 2008 and the period from 2008 to 2009. However, the *difference* between trench asset price changes and wage inflation did not remain stable, which is an implicit assumption in the Vodafone formula.

4.51 ComReg also notes that its assumptions allow for the possibility that a series (inflation and asset prices) which would increase more dramatically during a boom period would also fall more rapidly in a downturn.

4.52 Taking all of the above into account, ComReg believes it is proper to conclude that its assumptions are a more reasonable and appropriate basis on which to assess the price trends in the model.

4.53 Since publication of ComReg Document No. 09/39, ComReg has updated the price trend data to reflect an extended historical period. Price trends now reflect asset price changes over the period from 2000 to 2012 (or 2001 to 2012 depending on the assets considered) the asset price change over the period 2000 to 2009 (this period was initially 2000 to 2007 in ComReg Document No. 09/39) was observed using Eircom's contractor prices and the asset price changes during the period from 2010 to 2012 being calculated as follows:

$$\textbf{Average Price Trend 2010-2012} = \textbf{Average Price Trend 2000-2009**} \times \frac{\textbf{Average Labour Inflation (or CPI) 2010-2012}}{\textbf{Average Labour Inflation (or CPI) 2000-2009}}$$

** The historic price trends (average price trend 2000-2009) are calculated by comparing:

(1) 2009 Eircom asset prices; and

(2) In most cases 2000/2001 asset prices. However, in a small number of cases the asset prices are based on 2003 values.

4.54 ComReg believes that the price trend data for the extended period is more accurate as it reflects the actual price trends from a longer series of data and means that only three years of forecasted or future price trends are necessary (as opposed to five years as part of the original proposal in ComReg Document No. 09/39). The model also reflects publicly available information from Goodbody stockbrokers[20], Davy stockbrokers[21] and the Economist[22], regarding their views at that time on wage inflation, and CPI. Copper inflation is based on data from the Consensus Economic Report[23].

4.55 Smart and Magnet raised the point that given the current rate of unemployment and the impact on the labour rate as well the current negative rate of inflation that a weighting factor of an additional 50% should be applied to the period from 2008 to 2012, in the tilted annuity formula. However, ComReg believes that the proposals suggested by both of these operators relates to short term price trends, whereas the modelling exercise is based on long-term trends. As discussed in ComReg Document No. 09/39 ComReg considered that it is appropriate to focus on long-term price

[20] Goodbody's Irish Equity Morning Meeting Wrap - 22 May 2009 and Deleveraging the Irish Economy, Goodbody Stockbrokers; dated 9 April 2009.

[21] http://www.davy.ie/GenericResearch?page=macroforecasts; dated 1st September 2009.

[22] EIU – Country Data Ireland - Fiscal and monetary indicators; dated 1st August 2009.

[23] Consensus Economic Release; dated 27 July 2009.

trends because long-term prices better reflect the considerations made by investors when considering potential deployments. In addition, there are practical difficulties with generating robust short-term price forecasts, particularly, in the current market context.

4.56 Smart and Magnet also believed that ComReg must give further consideration to labour costs, energy costs and contractor costs which should feed into a lower future price for LLU. ComReg's position and conclusion in relation to the relevant costs are discussed below under separate headings.

4.57 In conclusion, ComReg is of the view that its methodology (discussed below) in relation to price trends is reasonable as an input or an assumption to the tilted annuity formula and that the period 2000 to 2012 is a reasonable length of time to assess price trend data relating to the copper access network assets.

Conclusion in relation to Price Trends:

1. The period from 2000 to 2012 is the period to assess the price trend data in relation to the copper access network assets.
2. The price trends methodology used as an assumption/input within the tilted annuity formula in the BU-LRAIC model, in determining the maximum LLU and SLU monthly rental charges, is based on asset price changes over the period from 2000-2012 (or 2001-2012). The asset price changes during the period from 2000-2009 was observed using Eircom's contractor prices and the asset price changes during the period from 2010-2012 being calculated using the following formula:

$$\textbf{Average Price Trend 2010-2012} = \textbf{Average Price Trend 2000-2009**} \times \frac{\textbf{Average Labour Inflation (or CPI) 2010-2012}}{\textbf{Average Labour Inflation (or CPI) 2000-2009}}$$

** The historic price trends (average price trend 2000-2009) are calculated by comparing:

(1) 2009 Eircom asset prices; and

(2) In most cases 2000/2001 asset prices. However, in a small number of cases the asset prices are based on 2003 values.

2. Average payment terms

4.58 As discussed in ComReg Document No. 09/39, 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.

4.59 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).

4.60 In discussion with ComReg, in relation to the design of the BU-LRAIC model, Eircom stated that it would take 5 years to deploy a network in Ireland and therefore (on the basis that the contractors would need to be paid regularly for their services) the average payment terms would be 2.5 years.

4.61 If this view were correct it would imply a significantly higher cost of network deployment than is implied by the approach that other NRAs have adopted. Moreover, from an operational point of view, ComReg did not consider the need to wait for the national network coverage before launching services in a given area. In ComReg's view services could be launched locally.

4.62 Nevertheless, ComReg considered three options/concepts in determining the appropriate payment terms in the Irish context, they are outlined below.

- **Option 1** assumes that revenues are realised the same time as investments are made; therefore the assumption is that a network is instantaneously built and operational. This option is consistent with the approach adopted by ARCEP (France) in its LLU cost model[24].
- **Option 2** assumes that revenues are realised approximately 6 months after the investments are made; therefore the assumption is that a network is instantaneously built and operational 6 months after the initial investment. This is for example the approach adopted by BIPT[25] in Belgium.
- **Option 3** assumes that revenues are realised approximately 12 months after the investments are made; therefore the assumption is that a network is instantaneously built and operational 12 months after the initial investment. This option is consistent with the approach adopted by PTS[26] in Sweden.

4.63 For the reasons given above, ComReg's concludes 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. In particular, the five-year period suggested by Eircom appears to have no convincing basis in either best practice in other EU countries (as indentified above) or the situation in Ireland.

[24] ARCEP Decision 05-0834, published 15 December 2005.

[25] Description du modèle des coûts top-down pour le calcul des tarifs d'interconnexion », IBPT, November 2006.

[26] PTS Document: Dnr 07-3652/23. Guidelines for the LRIC bottom-up and top-down models, published 12 September 2007.

Conclusion in relation to Average Payment Terms:

It is assumed that revenues are realised approximately 6 months after the investments are made; therefore the assumption is that a network is built and operational 6 months after the initial investment is as follows:

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

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.*

3. Civil Works Costs

ComReg Document No. 09/39: Principles Supporting Conclusions

4.64 In ComReg Document No. 09/39 ComReg was of the preliminary view that the Eircom contractor rates should reflect competitive current market rates as it is the national fixed telecoms provider. In addition, ComReg considered the fact that these rates are in most cases based on negotiations with the relevant contractor for capital work carried out in different areas throughout the country.

4.65 In ComReg Document No. 09/39 ComReg detailed how the BU-LRAIC model included the actual Eircom, contractor rates with a reduction applied to these rates to account for the fact the workforce in Ireland had recently taken reductions in salaries. The model also reflected an adjustment for economies of scale[27] to account for the benefits that might arise from deploying a new and larger network.

Consultation Question in ComReg Document No. 09/39

Q.3. Do you agree that it is reasonable to consider that contractor costs will reduce over the proposed three year price control period? Please state the percentage (%) which you expect labour costs to reduce over this period.

Views of Respondents to ComReg Document No. 09/39

4.66 Smart, Magnet and BT agreed that it was reasonable to consider that contractor costs will reduce over the three year period.

[27] Economies of scale are the cost advantages that a business obtains due to expansion. They are factors that cause the average cost per unit to fall as scale is increased.

4.67 Vodafone and Eircom disagreed with ComReg's proposal regarding a reduction in the contractor costs over the next three years.

4.68 Smart suggested that labour rates for semi-skilled work will drop by between 20% and 40% depending on the type of work being undertaken. Smart stated that many employers have sought and secured wage reductions of between 10% and 20%. Smart also referred to the Hudson Salary guide for 2009 which stated that telecoms engineers will be likely to see a salary of between €32,000 and €55,000 i.e. lower and upper range.

4.69 Magnet suggested that contractor costs will decrease over the next three year period by approximately 50% due to lower volumes of work and more competitive tendering and also reductions in input costs including labour and materials.

4.70 BT believed that the downturn in the construction industry in Ireland, followed by that of the banking system is now having a direct impact on virtually all aspects of the employment market in Ireland. BT referred to the Economic and Social Research Institute ("ESRI") Policy Conference, 2009: The Labour Market in Recession. This article highlighted that the unemployment rate this year is expected to average 13% and in 2010 is to rise to over 16%. BT believed that the contractor was more exposed than many in the current environment as by their nature they tend to be on short term contracts for specific tasks and hence their rates can be rapidly reduced through reducing re-hire prices. BT also stated that some commentators have suggested that Ireland is over priced by 25%. BT also added that Eircom's aim was to shed between 19% and 26.5% of staff and therefore, it is proposed that the reduction in contractor rates could be reduced in the order of 25% or more.

4.71 Vodafone in its response stated that while labour costs have recently declined, this is a very rare occurrence in a historic context. Vodafone believed that the decline in labour costs was very likely to be a transitory phenomenon that would end with even a mild cyclical upturn in the economy and the return to the usual trend of a rising CPI on a year on year basis. Vodafone further considered that a reasonable assumption would be for labour costs to begin to rise again in nominal terms, albeit at a modest annual rate of 2% to 3%, after 2010.

4.72 Eircom did not agree with ComReg's proposal insofar as that these inputs influence the capital value of assets modelled. Eircom stated that it had previously submitted its views on these issues to ComReg through previous submissions and bilateral engagements and had not changed its position.

ComReg's Conclusions

4.73 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.74 Subsequent to ComReg Document No. 09/39, Eircom submitted, on a confidential basis, the revised contractor rates, based on recently re-negotiated contracts. The model was subsequently updated with this more recent information. In addition to the updated contractor rates, ComReg has adjusted the contractor rates for economies of scale to account for the benefits that might arise from deploying a new and larger network.

4.75 ComReg concludes that Eircom's contractor rates used within the model are an appropriate basis for determining the maximum LLU monthly rental charge during the price control period.

Conclusion in relation to Civil Works:

The contractor rates adopted in the BU-LRAIC model in determining the maximum LLU and SLU monthly rental charges are the Eircom contractor rates which reflect recently agreed rates. In addition, these rates are adjusted to reflect economies of scale.

4. Copper Cable Costs

4.76 As proposed in ComReg Document No. 09/39, one of the main assets of the copper access network is copper cable. ComReg used information provided by Eircom on the copper cable price as it was dependent on the copper price. ComReg acknowledged that the copper price can fluctuate significantly so it used the average copper price to derive the copper cable prices relevant for 2009. The copper price was based on the London Metal Exchange ("LME") market and also forecasted copper price data provided by Consensus Economics[28]. The average copper price included in the model is approximately \$4,352 for the year 2009. As an efficient operator would tend to avoid buying copper at peak level, taking the average price is a more conservative approach.

Conclusion in relation to Copper Cable Costs:

The average copper price included in the model is approximately \$4,352 for the year 2009.

5. Asset Lives

4.77 During 2009 ComReg, with the assistance of an external consultant[29], extensively reviewed the regulatory asset lives of Eircom Limited including the asset lives of the copper access network. Following a detailed consultation process, ComReg, published ComReg Document No.09/65[30] (Decision No. D03/09) which discussed the full details of ComReg's Decision. The revised asset lives have been incorporated into the BU-LRAIC cost model for LLU.

[28] Consensus Economics Report dated 27 July 2009.

[29] RGL Forensics.

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

Conclusion in relation to Asset Lives:

The asset lives, as discussed in ComReg Document No. 09/65 (Decision No. D03/09), are incorporated into the BU-LRAIC model.

Cost of Capital

4.78 The cost of capital (also referred to as Weighted Average Cost of Capital ("WACC")) is another parameter of the tilted annuity formulas. The objective of including the WACC is to allow a sufficient return to investors and to provide an incentive for current or potential investment. In ComReg Document No. 08/35[31] ComReg set out the cost of capital for Eircom at a rate of 10.21%. This value has been used as an input to the tilted annuity formula.

Conclusion in relation to Cost of Capital:

The cost of capital (used within the tilted annuity formula in the model) is based on the cost of capital for Eircom at a rate of 10.21% (as discussed in ComReg Document No. 08/35).

6. Evolution of Working Line Volumes

ComReg Document No. 09/39: Principles Supporting Conclusions

4.79 While Eircom's working lines have been increasing for many years, ComReg noted that this rate of increase had been gradually slowing and, indeed, there was a small decrease in the number of Eircom's working lines in the last year. This was confirmed by the reduction in working lines reported in ComReg Quarterly Report data.

4.80 ComReg stated that changes to the number of working lines may be affected by a range of factors from short term economic fluctuations, to longer-term structural factors such as fixed-mobile substitution ("FMS") and increasing levels of broadband penetration.

4.81 ComReg had detailed discussions with Eircom to establish its future trends in the number of working lines. Most of these discussions were confidential and their details cannot be disclosed in this document. However, in ComReg's view the recent decline in the number of lines was predominantly a short-term phenomenon. ComReg believed that the successful entry of LLU operators would act as a key stimulant to this demand.

4.82 ComReg was therefore of the preliminary view that the number of lines would actually stabilise in 2010.

[31] ComReg Document No 08/35; Response to Consultation and Decision Notice on Eircom's Cost of Capital (Decision No. D01/08); published on 22 May 2008.

Consultation Question in ComReg Document No. 09/39

Q.4. Do you believe that the volumes of working lines will increase, decrease or remain static over the proposed price control period? Please state in percentage (%) terms your views on the likely movements with detailed calculations, if necessary.

Views of Respondents to ComReg Document No. 09/39

4.83 Smart, Magnet and BT believed that the volume of working lines will remain static over the proposed three year price control period.

4.84 Vodafone stated that the recent decline in the number of working lines is a short-term phenomenon and that the volumes of working lines will increase significantly over the next three years.

4.85 Eircom believed that the volume of working lines will decrease.

4.86 Magnet stated that the volume of working lines will remain static due to low build forecasts, a move to cable providers and an overall household policy of saving money precipitating a move to mobile above fixed lines.

4.87 Smart stated that the number of working lines will remain static or marginally decrease for a number of reasons, including, the slowdown in construction development, the move to 'mobile only households', the move to save money in recessionary times and the growth of cable. Smart also stated that, in general, it noted that there appears to be a trend beginning towards the reduction of Public Switched Telephone Network ("PSTN") lines. Smart believed that LLU is a key enabler to drive uptake of PSTN services. Smart also noted that there are several hundred thousand PSTN lines lying idle in Ireland, mainly in new housing developments with younger families opting not to invest in a PSTN service at all. Smart believed that LLU can address this market and indeed there is no retail threat to Eircom in this regard as a first time connect to LLU gives Eircom retail the opportunity to 'win' the customer from the LLU operator. Smart referred to a recent report from the USA which shows a trend towards mobile only usage. Smart urged Eircom to accept that PSTN services are under threat and that global trends relating to PSTN reductions could easily come to pass here, in particular in recessionary times. Smart also highlighted statistics from AT&T and Verizon, which noted that landline subscriptions were decreasing while wireless subscribers were increasing. Smart further believed that a large decrease in PSTN services will hamper investment decisions for NGN and also have large scale employment and social and economic benefit implications and that ComReg must act in a brave and forward looking manner in order to protect consumers and PSTN services for all operators, including Eircom.

4.88 BT stated that the volumes of working lines will remain static as customers will demand higher speeds and greater high speed reliability than offered by the current generation of mobile solutions. BT further stated that it is also unlikely that the digital dividend frequencies will be available to the mobile sector before to 2013 given that the Digital Terrestrial Television ("DTT") has not yet started in Ireland and so the expected dividend frequencies are still in use for traditional analogue television. It also believed that it was difficult to predict the growth of the cable industry as this would be largely dependent on future cable investment and this could be disrupted by the current recession. BT also suggested that the introduction of the NGN and the potential for technologies such as Ethernet First Mile ("EFM") may use significant groupings of lines to offer higher symmetrical speeds to business users. BT ultimately believed that if the ComReg pricing decisions for LLU were to more closely reflect the cost of the LLU assets then LLU could actually stimulate growth in the overall number of active Eircom lines due to greater innovation and the potential to bring new entertainment and TV players into the fixed market. BT stated that Eircom's very high access pricing is foreclosing the access market and stifling investment.

4.89 Eircom disagreed with ComReg's assertion that net line loss will cease within the next twelve months. Eircom believed that ComReg had arbitrarily deviated from the forecast provided by Eircom with no empirical justification and was inconsistent with all reputable economic forecasts of the severity and duration of the current economic crisis in Ireland. Eircom also stated that at the time that Eircom provided ComReg with its forecast, UPC had only launched its aggressive push into telecommunications services in Dublin and other urban areas though its "Line rental is dead" campaign. Furthermore, Eircom stated that UPC is only building a digital cable network in urban areas and its network footprint is almost exclusively contained within the exchange areas above ComReg's 1,600 working line threshold for probable unbundling. Given the much greater weighting given to lines in these areas by ComReg, there is a structural deficiency in the modelling in that it cannot account for geographically concentrated line loss. Eircom further added that ComReg's methodology for distributing forecast working lines to MDFs erroneously assumed that all MDFs would be subject to similar proportions of line loss.

4.90 Another point raised by Eircom was that there is an inconsistency in the approach ComReg had taken to future volumes and the recovery of capital costs through the use of tilted annuities. Eircom believed that given the parameters that ComReg has set for computing tilted annuities, the monthly ULMP charge would have to rise over time if the modelled capital was to be recovered on this basis. Eircom further added that only in the utterly implausible scenario that the demand for copper loops is completely insensitive to price will there not be a reduction in volumes associated with increasing prices at faster than the rate of inflation. Eircom believed that rising annualised asset cost recovery in combination with declining volumes would result in exponentially rising costs per line per month.

ComReg's Initial Position following ComReg Document No. 09/39

4.91 Following consideration of operator responses to Question 4 and given the fact that the decline in working line volumes seemed to be occurring at a faster rate than was previously anticipated in ComReg Document No. 09/39 ComReg sought further views from industry. The details of the further consultation question, operator responses and ComReg's final position and conclusion in relation to the forward looking trend in working line volumes are discussed below.

ComReg Document No. 09/62: Principles Supporting Conclusions

4.92 ComReg obtained further confidential data from Eircom in relation to the working line volumes. As discussed in ComReg Document No. 09/62, the data provided on the working line volumes, showed that the decline in working lines had been occurring at a faster rate than was previously anticipated. However, ComReg noted that this decline was occurring in the context of significant economic disturbances i.e. the gross domestic product ("GDP") fell by 8.5% in the year to March 2009, while employment rates showed a 7.5% reduction in the same period[32].

4.93 Other reasons considered by ComReg for the decrease in working line volumes included the return of migrant workers to their respective countries, movement of customers from fixed line services to mobile and a reduction in the number of housing completions given the slowdown in the construction industry. However, ComReg believed that these particular factors were mainly one-off and were not expected to continue at the same dramatic pace as occurred in recent months.

4.94 Moreover, ComReg stated that while there was still uncertainty about the future economic outlook, current forecasts suggested that the economic position should begin to stabilise in 2010.

4.95 ComReg also noted that the above analysis was consistent with the experience of a number of other European countries. For example, the impact of broadband services on the number of working lines had recently been highlighted in a report by Arthur D Little/Exane[33] ("Reviving the fixed line", February 2009) where they made the following observation:

> *"In several countries, the launch of triple-play has enabled the incumbent to considerably slow or even stop line losses. This is the case notably in Portugal, Austria and Sweden".*

4.96 In addition, the experience in France indicated that the strong development of full LLU first stopped the decrease in the number of working lines and then led to an increase in the number of working lines.

4.97 Taking the above into account, ComReg proposed to recalculate its forecast of working line volumes, taking into account the more rapid recent declines, but to retain its earlier assumption that volumes were likely to stabilise in 2010.

Further Consultation Question in ComReg Document No. 09/62

Q.3. Do you agree with ComReg's assessment that the recent declines (even though these declines have been faster than anticipated since the publication of Consultation Document No. 09/39) are largely a short-term phenomenon for the reasons set out above? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/62

4.98 BT agreed with ComReg's assessment and highlighted a number of barriers (including, price, service levels and regulatory uncertainty) that were contributing to the current low levels of LLU in Ireland. It emphasised that correcting these

[32] Central Statistics Office (2009), "Consumer Price Index, June 2009", 9 July 2009.

Central Statistics Office (2009), "Quarterly National Household Survey". Quarter 1 2009, 25 June 2009.

[33] http://www.adl.com/fileadmin/editorial/press/ADL_Reviving_the_fixed_line.pdf.

problems would stimulate greater LLU activity leading to higher levels of utilisation of Eircom lines. BT also claimed significant growth in LLU would occur if pricing is aligned with internationally accepted regulatory accounting methodologies.

4.99 Eircom disagreed with ComReg, stating that there had been a long-term decline in demand for fixed line services that had been masked by an increase in the overall number of households, a pattern that Eircom considers unlikely given the broader economic context. Eircom also pointed to ComReg's quarterly reports as evidence of the increase in the proportion of "mobile only" households for both broadband and telephony. It also pointed to ESRI and Irish Central Bank reports to illustrate its disagreement.

4.100 According to Magnet the observed decline in working line volumes is a combination of high monthly charges, mobile broadband innovative offers and mobile bundles. Magnet pointed to UPC's announcement of its doubling of telephone subscribers and a 33% increase in its broadband subscribers in year 1. According to Magnet, this illustrates that customers are willing to use broadband and telephony services but only at a particular price which is not being provided using Eircom infrastructure.

4.101 Vodafone agreed with ComReg and believed that increased broadband penetration, performance of broadband services and competition will all act to stimulate demand for working lines. This will lead to working line volumes stabilising and ultimately increasing during the price control period.

4.102 Ireland Offline considered that working line volumes would continue to decrease as a result of high prices and low service quality. According to Ireland Offline, the approximate €45 monthly cost of a basic 1mb broadband service illustrated the most obvious reason for the decline in fixed line provision. It also stated that a quarter of fixed lines are paid by the state through social welfare schemes, which it stated were at risk of being withdrawn over the coming years. Ireland Offline estimated that working line volumes would be between 1.2m and 0.8m by 2011, compared to the 1.6m estimated by ComReg

ComReg's Conclusions

4.103 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.104 ComReg is of the view that the recent decline in the number of working lines is predominantly a short-term phenomenon and that the number of lines will stabilise in 2010.

4.105 Eircom raised concerns that there was a structural deficiency in the BU-LRAIC model as the model could not account for geographically concentrated line loss. However, ComReg subsequently requested Eircom to provide a breakdown of the working line volumes by main distribution frame ("MDF") for 2008 and 2009. The model has now been revised to take account of the line loss by MDF.

4.106 In response to Eircom's claim about the impact of rising prices on demand for working line volumes, ComReg is of the view that Eircom's point appears to be based on an assumption that the LRAIC price for LLU is linked to the price for line rental. However, the revised maximum monthly rental charge set for LLU is to encourage and incentivise investment by Eircom and OAOs and to encourage competition in the market place. The LLU monthly rental price is not determined for the purposes of setting a line rental price. As discussed in Section 8, the retail line rental is due to be reviewed shortly and all relevant inputs will be assessed as part of that review.

4.107 ComReg agrees with the position adopted by many of the respondents that high charges also represent a significant contributory factor to the decline of fixed line services, especially compared to the alternatives such as mobile. ComReg is of the view that the reduced LLU charge will act to stabilise the level of demand for fixed lines. This is consistent with the experience of a number of other European countries, (e.g. in France, the strong development of full LLU first stopped the decrease in the number of working lines and then led to an increase in the number of working lines). Furthermore, ComReg believes that some important economic factors such as the return home of some migrant workers, movement of customers from fixed line services to mobile and a reduction in the number of housing completions given the slowdown in the construction industry are likely to be short-term effects.

4.108 ComReg believes that the current economic disturbance is a significant contributory factor in the current decline in the number of working lines. Eircom, in its response to ComReg Document No. 09/39, stated that working lines will continue to decrease during the price control period. ComReg has accounted for the recent drop in the actual working line volumes during 2009 in determining the maximum LLU monthly rental charge. ComReg believes that working line volumes will stabilise in 2010, mainly as a result of expected demand for fixed lines due to a take-up in LLU.

4.109 Taking all these factors into account, together with evidence submitted by Eircom in confidence, ComReg believes it is reasonable to conclude that working line volumes will stabilise in 2010.

Conclusion in relation to Working Line Volumes:

In determining the maximum LLU and SLU monthly rental charges, the BU-LRAIC model assumes that working line volumes will stabilise in 2010.

7. Working Capital

ComReg Document No. 09/39: Principles Supporting Conclusions

4.110 In ComReg Document No. 09/39 ComReg discussed that working capital represents the difference between the current assets and the current liabilities of a company. It also reflects a company's ability to meet its short-term or day to day financial obligations. Working capital is independent of the capital investment of a network and can be difficult to measure and calculate due to the subjective nature of some of its component parts. In addition, working capital can change over time and can fluctuate between positive and negative working capital.

4.111 ComReg considered a number of models built by other countries and whether working capital was included in them, where publicly available documentation was available in this regard. It was noted that in December 2008 the Australian Competition and Consumer Commission[34] published details on its access and core model which did not include working capital. In France, ARCEP, has consistently excluded the adjustment for working capital unless its calculation was audited. PTS (Sweden) in its 2006 publication of "Hybrid Model User Guide" refers to a calculation for working capital, but states that "based on empirical evidence from the top-down model the cost of working capital has been set to zero."

4.112 ComReg also considered the fact that the earlier version of the LLU model from 2002/2003 did not include a working capital adjustment. Taking these factors into account, ComReg was of the preliminary view that working capital should still not be included in the current BU-LRAIC model used to determine the maximum LLU monthly rental charge.

Consultation Question in ComReg Document No. 09/39

Q.5. Do you agree with ComReg's preliminary view that working capital should not be included in the BU-LRAIC cost model used to determine the LLU monthly rental charge? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/39

4.113 Magnet, Smart and BT agreed with ComReg's preliminary conclusion that working capital should not be included.

4.114 Vodafone and Eircom disagreed with ComReg's proposal that working capital should be excluded.

4.115 Eircom referred to extensive bilateral correspondence provided to ComReg in this regard.

4.116 Vodafone believed that Eircom obtains line rental revenues from OAOs two months in advance and that this is a significant benefit to Eircom in terms of negative working capital i.e. customers are part funding the access line business. Vodafone therefore believed that this factor must be reflected through inclusion of working capital as an element in the BU-LRAIC cost model used to determine the LLU monthly rental charge.

ComReg's Conclusions

4.117 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.118 As discussed in ComReg Document No. 09/39, determining the appropriate level of working capital can be highly subjective and difficult to assess. For example, the impact of the fact that Eircom obtains line rental revenues from OAOs two months in advance is difficult to assess since line rental is not provided by the majority of OAOs.

[34] www.accc.gov.au/content/index.phtml/itemId/857897

4.119 ComReg also considered a number of models built by other countries, where publicly available documentation was available in this regard, where the working capital was also excluded. It was also noted that the initial LLU model built in 2003 did not include a working capital adjustment.

4.120 ComReg concludes that working capital should not be included in the BU-LRAIC cost model.

Conclusion in relation to Working Capital*:*

Working Capital is not included in the BU-LRAIC model for determining the maximum LLU and SLU monthly rental charges.

8. Long-term Damage Costs

4.121 Local authorities charge operators for deploying infrastructure on roads or footpaths. It appears that where local authorities charge operators that these charges can differ from one local authority to another and are not based specifically on a set charge. Therefore, ComReg is of the view that in order to account for these costs within the model, it appears reasonable to take an average of the long-term damage charges incurred by Eircom over the past few years. It should be noted that ComReg has not applied long term damages to isolated housing areas for the following reasons:

(a) The network in these areas is primarily deployed overhead.

(b) When it is deployed underground it is deployed on the grass verge and not on roads or footpaths.

Conclusion in relation to Long-term Damage Costs:

An average of the long-term damage charges incurred by Eircom over the past few years have been accounted for in the BU-LRAIC model. No long term damage costs are included in the model in relation to isolated housing areas.

9. Development of Underground and Overhead Distribution Points

4.122 As stated in ComReg Document No. 09/39, Eircom's existing infrastructure is deployed using a combination of overhead and underground deployment techniques. These choices reflect the technical issues of deploying infrastructure in different parts of the country, as well as the evolving planning rules that have made it increasingly difficult for Eircom to use overhead methods. Eircom has been required to deploy its network fully underground for most developments undertaken since 1977.

4.123 When designing the BU-LRAIC model, ComReg had to consider the appropriate proportion of the network that a hypothetical efficient operator would deploy overground or underground. ComReg considered three options:

- Deploy the network fully underground.
- Deploy the network fully overground.
- Deploy the network using the approximate overground/underground mix that Eircom have in reality.

4.124 In order to determine which of these approaches is the more appropriate, it was in the first instance necessary to consider how they accord with ComReg's regulatory and statutory objectives. The relevant objective in this context is the provision of efficient investment incentives for current market players as well as those that may consider entering the market in the future.

4.125 It is ComReg's view that the deployment of two competing access infrastructures in a given area would not normally tend to increase consumer welfare, except where there is sufficient differentiation in the technologies that the benefits of additional consumer choice outweigh the significant additional costs of having a second network.

4.126 For these reasons, ComReg's view is that while cable represents a viable competing infrastructure to Eircom's copper access network, it is unlikely to be efficient for non-cable OAOs to employ a competing access network by means of a scorched node approach where Eircom has already deployed its network. For green field sites[35] it may be efficient for any of the competing operators to deploy the relevant access network.

4.127 More generally, if ComReg were to set excessive LLU prices, it would tend to encourage inefficiently high levels of investment by both Eircom and the cable operators, since the make/buy decisions of the latter group would be distorted. It could also be expected to result in inefficiently low levels of investment by non-cable OAOs even with a high LLU price it is unlikely to be viable for them to deploy a competing access network by means of a scorched node approach where Eircom has already deployed its network.

4.128 In contrast an excessively low LLU price would tend to result in inefficiently low levels of investment in infrastructure by Eircom and the cable operators, as well as inefficiently high levels of LLU.

4.129 Cable operators typically deploy some proportion of their assets over-ground and therefore ComReg is of the view that the first of these approaches (mainly deploy the network underground) would tend to provide cable operators with incentives to engage in inefficiently high levels of investment.

4.130 Conversely, the second option (namely deploy the network over-ground) may provide cable operators with inefficiently low investment incentives because at least part of their network is likely to require underground deployment (particularly for large-scale roll-outs). Moreover, it is unlikely to provide Eircom with efficient incentives for future deployment as it does not reflect the actual planning rules that Eircom can expect to face for subsequent investments.

4.131 Finally, the potential implementation of the third option is to apply the following general rules:

[35] Green field sites are sites which do not already have any telecoms network infrastructure in place.

- Within housing areas, the model deploys underground infrastructure up to the final drop. At this point, the model differentiates between new housing developments and existing one-off houses. For houses located within new housing developments[36], final drops are delivered through underground infrastructure. For other houses[37], the final drop is delivered overhead.
- Within isolated areas, the model generally deploys infrastructure overhead, including the final drop.

4.132 ComReg's view is that this third option strikes the appropriate balance between the need to provide sufficient incentives to invest, while avoiding incentivising inefficient investments. By setting the mix of overground/underground deployment according to the current mix in Eircom's actual copper network, it does not introduce a distortion to the investment decisions of the alternative operators.

Conclusion in relation to Deployment of Overhead and Underground Distribution Points:

Generally the network in the BU-LRAIC model is deployed using the approximate overground/underground mix as Eircom does in reality. The following general rules apply:

- Within housing areas, the model deploys underground infrastructure up to the final drop. At this point, the model differentiates between houses located in housing developments and existing one-off houses. For houses located within new housing developments, final drops are delivered through underground infrastructure. For other houses, the final drop is delivered overhead.
- Within isolated areas, the model generally deploys infrastructure overhead, including the final drop.

10. Non-linearity factor

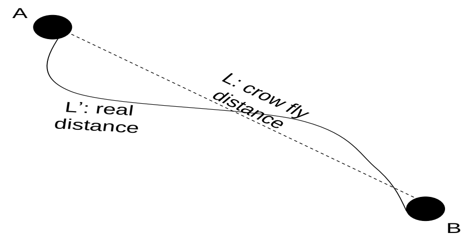
4.133 In the course of the mapping exercise a 'non-linearity factor' was computed to take account of bends in the roads, which are particularly relevant to rural areas. Since the algorithm used inside housing areas inherently deploys cable on non-linear distances, this is applied outside housing areas only.

4.134 In computing the non-linearity factor the distances between a number of points on Irish roads were chosen at random, and this factor was then incorporated within the model. ComReg is of the view that it is reasonable that the model should account for the fact that there are bends on the non-linear nature of roads, especially in rural areas.

[36] Houses located within housing developments which are built since 1977.

[37] Houses located within housing developments built before 1977 and one-off houses.

Figure 1 - Non Linearity Factor



Non Linearity factor = L'/L

> **Conclusion in relation to Non-Linearity Factor**:
>
> In the BU-LRAIC model, a non-linearity factor has been applied to account for the bends on the roads, especially in rural areas.

11. Maximum distance between chambers inside a housing area and isolated area

4.135 The engineering rules supplied by Eircom in relation to housing areas indicated a maximum possible distance between chambers within a housing area. The model is currently calibrated with this maximum value. However, in deploying underground network, the model considers the average distance between buildings within the housing area and calculates an appropriate distance between the chambers on that basis. As a result, the model has calculated chamber distances for linking housing areas to MDFs. ComReg is of the view that the maximum distance incorporated within the BU-LRAIC cost model is reasonable.

4.136 In isolated housing areas the model places infrastructure overhead. However, at some points, the copper cable is too large to be supported by poles and the cable is deployed underground.

4.137 The engineering rules supplied by Eircom and observed by ComReg in relation to isolated areas indicate a maximum possible distance between chambers within an isolated area. This value has also been incorporated into the model.

> **Conclusion in relation to Maximum Distance between Chambers:**
>
> The BU-LRAIC model is calibrated with a maximum possible distance between chambers, both, within a housing area and within an isolated area. This is based on engineering data provided by Eircom.

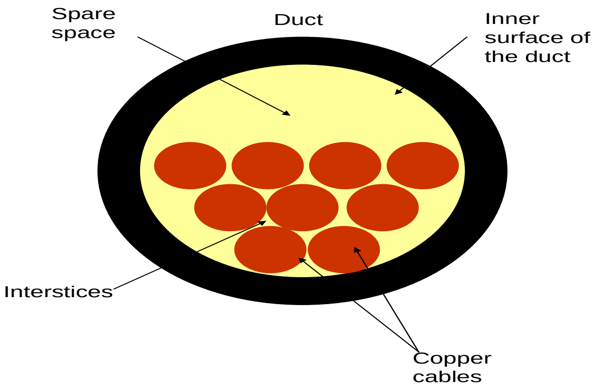
12. Duct Inefficiency and Spare Capacity

4.138 In order to determine the maximum number of cables that can be pulled into a single duct, the inner surface of the duct can be compared to the sum of the outer surface of cables that needs to be laid down in this duct. However, from a mathematical perspective, the sum of cable surfaces cannot equal the inner surface of the duct due to the existence of interstices[38]. It is not possible to fill the duct to its maximum. As a consequence, ComReg carried out an adjustment to account for a level of duct inefficiency.

4.139 In planning for future demand, ComReg considered that an operator would estimate the duct requirement. ComReg carried out an adjustment within the model to account for spare capacity for future requirements. ComReg is of the view that it would not be cost effective to build the same number of ducts nationally. In some cases the duct would become fully utilised while in other cases there may only be a small proportion of the duct in use.

4.140 ComReg is of the view that the duct occupancy rate would not exceed 70%.

Figure 2 - Illustration of Duct Occupancy



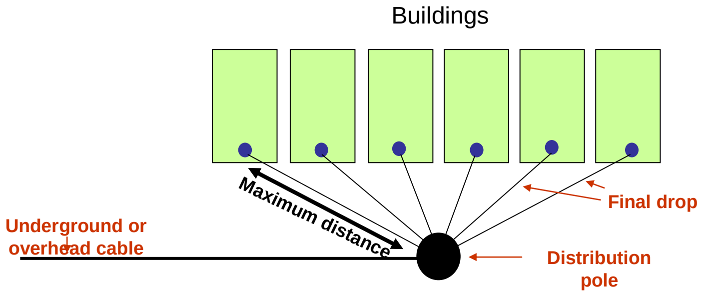
Conclusion in relation to Duct Inefficiency and Spare Capacity:
The appropriate assumption used within the BU-LRAIC model is that the duct occupancy rate would not exceed 70%.

13. Maximum Distance for Underground and Overhead Final Drops

4.141 During the modelling exercise, ComReg examined a maximum distance for an underground/overhead final drop from a chamber/pole having an underground/overhead distribution point. ComReg's assessment of these distances was based on Eircom's engineering rules. This engineering rule calculates the number of distribution points required. ComReg has incorporated an average distance for underground/overhead final drops, in order to determine the amount of underground/overhead final drop cable required.

[38] Interstices means the space between the cables.

Figure 3 - Maximum distance between distribution points and buildings



Conclusion in relation to Distance for Underground and Overhead Final Drops:

The BU-LRAIC model accounts for a maximum distance for underground/overhead final drop from a chamber/pole having an underground/overhead distribution point. The model also accounts for an average distance for underground/overhead final drops, in order to determine the amount of underground/overhead final drop cable required. These assumptions are based on Eircom's engineering data.

14. Sharing of Duct between Core and Access Network

4.142 In the national telecoms networks there is, in reality, an element of sharing of duct between the core and access networks. Although both networks serve different telecom needs it can be more cost effective to combine the duct. For example, the duct in the copper access network might serve a road along which the core network is travelling to another location. Rather than dig two trenches, the duct of both are combined. ComReg is of the view that it is important to consider this concept and a parameter has been adopted within the model to account for the sharing of access duct with the core network. In order to accommodate this within the model, Eircom has, for each MDF, provided an estimate of the length of trench that is shared between the core network and the access network.

Conclusion in relation to Sharing of Duct between Core and Access:

An appropriate parameter has been adopted within the BU-LRAIC model to account for the sharing of access duct with the core network. This is based on engineering data provided by Eircom.

15. Percentage of Streets with Double Trenching

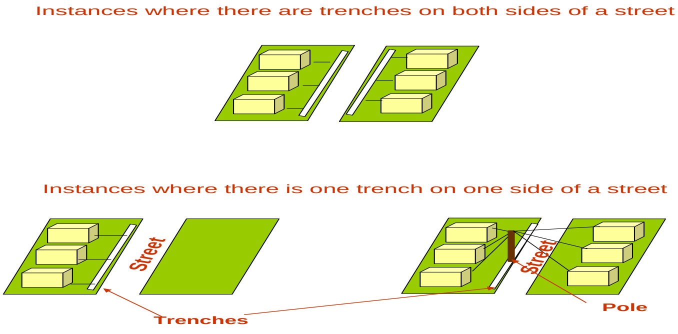
4.143 As the diagram below illustrates, where there are houses on both sides of the road, an operator could deploy its infrastructure by utilising a single trench with overhead final drops or by installing a trench on each side of the road (double trenching) for the final drop.

4.144 The need for double trenching will be highest where planning rules restrict the use of overhead deployment and on wider roads where overhead deployment is more challenging.

4.145 ComReg's model assumes that double trenching is used on *all* of the larger roads within housing areas as well as a proportion of the minor roads within those areas.

4.146 ComReg is of the view that its approach is reasonable as it results in the model calculating a slightly higher total trench length than Eircom's legacy network has in reality. Moreover, the double trenching assumptions are broadly consistent with the observations ComReg made when undertaking site visits during the initial stages of the LLU project.

Figure 4 - Trenches on both sides of a street and a trench on one side of the street



> **Conclusion in relation to Percentage of Streets with Double Trenching**:
>
> An appropriate assumption used in the BU-LRAIC model is that double trenching is used on all of the larger roads within housing areas as well as a proportion of the minor roads within those areas.

16. Pole Distance

4.147 In the modelling exercise ComReg has accounted for the fact that telegraph poles are spaced at a certain distance apart. Eircom's engineering rule on pole distance has been used to model this parameter. The average pole distance in the Eircom network appears reasonable and has been adopted in the model.

Conclusion in relation to Pole Distance:

An appropriate assumption used within the BU-LRAIC model is that telegraph poles are spaced at a certain distance apart. This is based on data provided by Eircom.

Operating Costs and Indirect Capital Cost Factors

4.148 With regard to the operating costs and indirect capital costs of the access network the following points are important to note:

- A large proportion of the operating costs within the BU-LRAIC model are payroll (or staff) related costs regarding the ongoing maintenance and day-to-day running of the network. While the initial starting point for these costs was the HCA costs of Eircom's access network for the financial year 2008, significant adjustments were made in order to determine the efficient level of operating costs relevant to LLU. That is, it would be inappropriate for example to allow for all existing staff costs in the BU-LRAIC context, where the legacy network in place is predominantly overhead and a significant allowance has been made in the BU-LRAIC model for underground network which would require much less maintenance for obvious reasons, and as a result significantly less staff costs.
- The operating costs in the model also include the cost of managing the network and the corporate overheads of the business.
- In addition to the investment incurred for building the network, an operator also incurs costs relating to planning and designing the network and the costs of inspecting the capital work completed.
- A number of bilateral workshops were held between ComReg and Eircom to ensure that ComReg understood the relevance of the data to the access network.
- Fault clearance is charged separately from the LLU monthly rental charge and ComReg proposed that the *status quo* would remain going forward.

4.149 The operating costs are discussed under three main heading as follows:

- Labour (staff) costs
- LFI
- Fault clearance costs.

1. Labour Costs

ComReg Document No. 09/39: Principles Supporting Conclusions

4.150 The main operating cost elements within the model included the staff costs necessary for the efficient running of the optimised capital network. In the analysis of the staff costs ComReg considered, that given the current economic climate, labour costs were currently reducing and that it was conservative to assume that labour costs would continue to reduce for the next three years. An adjustment was considered within the model to account for an expected labour cost reduction over the three year timeframe of the proposed price control period.

Consultation Question in ComReg Document No. 09/39

Q. 6. Do you agree that it is reasonable to consider that labour costs will reduce over the proposed three year price control period? Please state the percentage (%) which you expect labour costs to reduce over this period.

Views of Respondents to ComReg Document No. 09/39

4.151 BT, Magnet and Smart agreed that labour costs will reduce during the price control period.

4.152 Vodafone disagreed with ComReg, while Eircom stated that to the degree that these inputs influence the capital value of assets modelled as in future periods Eircom did not accept the values proposed by ComReg in the modelling exercise.

4.153 BT referred to Eircom's quarter end results for March 2009 where they have reduced headcount for their existing 2009/2010 target. In addition, BT also referred to Eircom's public announcement, in May 2009, regarding its cost cutting programme. BT believed that given the staff cost reductions discussed by Eircom that labour charges should reduce by 25% or greater over the three year period.

4.154 Magnet believed that labour costs should reduce by approximately one third given high unemployment especially in the construction market. Magnet also stated that businesses have requested employees to take a 10% to 20% reduction in current salary.

4.155 Smart stated that it believed that Eircom's labour costs were currently estimated to be too high. It also referred to the recently announced Eircom cost reduction programme which included salary reductions of between 5% and 10%, elimination of bonus payments, commission payments being reduced, expense claims being reduced, a pay freeze for two years and a reduction in staff numbers of over 1,250. Smart believed that given the combination of the above savings that it would expect a yield of between 20% and 30% of an overall saving on the cost base, if not more.

4.156 Vodafone disagreed that labour costs would reduce over the three year period. Vodafone stated that while labour costs have recently declined, this was a very rare occurrence in a historic context. It believed, like the current general deflation as measured by the most recent monthly reports for CPI, the decline in labour costs was very likely to be a transitory phenomenon that would end with even a mild cyclical upturn in the economy and return to the usual trend of a rising CPI on a year on year basis. Vodafone considered that a reasonable assumption would be for labour costs to begin to rise again in nominal terms, albeit at a modest annual rate of 2 to 3% after 2010.

ComReg's Conclusions

4.157 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.158 ComReg believes that the different suggestions by the majority of respondents in relation to labour cost reductions for the next three years appear to be inconsistent with current publicly available expert economic views and actual survey data in relation to labour costs reductions. The ESRI in its summer 2009 Quarterly Economic Commentary[39] suggests that wages in Ireland will reduce by 3% in 2009 and by 1.6% in 2010. In addition, the CSO in a report[40] dated 12 March 2009 stated that the average weekly rate (between December 2007 and December 2008) fell by 2.4%. Irish Business and Employers Confederation ("IBEC") published its quarterly report in July 2009[41]. In this report IBEC referred to its Business Sentiment Survey for the second quarter of 2009 which revealed that pay freezes have become the norm and a high percentage of companies have implemented pay cuts. The survey data all suggests that economy wide wages in Ireland will fall by 3% in 2009. This report also sets out that a number of companies plan further cuts over the coming months and downward pressure on wages will continue into 2010.

4.159 ComReg believes that labour costs are falling and that they will reduce further during the period of the price control. The labour cost reductions incorporated into the costing model and the final maximum LLU and SLU monthly rental charges are consistent with Eircom's cost reduction plans and indeed, consistent with publicly available expert economic views, as referred to above.

Conclusion in relation to the Labour Costs of Operating the Network: The labour cost reductions accounted for within the BU-LRAIC model in determining the maximum LLU and SLU monthly rental charges are based on Eircom's cost reduction plans.

2. Line Fault Index ("LFI")

ComReg Document No. 09/39: Principles Supporting Conclusions

4.160 One of the main parameters considered in determining the relevant staff numbers for the BU-LRAIC model was the appropriate Line Fault Index ("LFI")[42] of the capital network. ComReg considered a number of options in relation to the LFI of the modelled network.

4.161 One option considered by ComReg was the LFI of the current Eircom network at approx 15-20%. However, ComReg was of the preliminary view that this was not appropriate as this was related to a legacy network built many years ago, with under investment in recent years.

[39] http://www.esri.ie/UserFiles/publications/20090715170344/QEC2009Sum_ES.pdf

[40] "Earnings and hours worked in construction".

[41] http://www.ibec.ie/IBEC/Publications.nsf/vPages/Economic_Trends~economic-trends---july-2009-22-07-2009/$File/Economic%20Trends%20July%2009.pdf.

[42] LFI refers to the number of line faults per 100 lines.

4.162 Another option considered by ComReg related to a separate decision taken by ComReg in relation to the quality of service targets to be achieved by Eircom and its binding LFI target of 12.5%. However, ComReg was of the preliminary view that the target LFI of 12.5% was related to the current Eircom network which was not a new network and was a target which was set to an achievable level, based on the current high level of faults.

4.163 A third option considered by ComReg related to a maximum LFI of 8%. From an analysis performed on data received from Eircom on the current performance of new network builds and recently renewed network, it has been observed that the line faults are much lower than the line faults of the old network as, for example, in a brand new housing development where all infrastructure is underground the average LFI would be much lower than where the infrastructure is based on a mixture of overhead and underground.

4.164 ComReg was of the preliminary view that a maximum LFI of 8% may be more appropriate on the basis that the modelled network relates to that of an efficient network.

Consultation Questions in ComReg Document No. 09/39

Q.7. ***Do you agree that the LFI of the current Eircom network is not an appropriate basis on which to set the operating costs of a BU-LRAIC model in determining the LLU monthly charge? Please state the reasons for your response.***

Q.8. ***Do you agree that the LFI of an efficient BU-LRAIC model, used to determine the LLU monthly charge, should be based on an LFI not exceeding 8%? Please state the reasons for your response.***

Views of Respondents to ComReg Document No. 09/39

4.165 With regard to Question 7, Magnet, Smart, BT and Vodafone believed that the LFI of the current Eircom network is not an appropriate basis on which to set the operating costs of a BU-LRAIC model in determining the maximum LLU monthly rental charges.

4.166 Eircom, in its response to Question 7, referred to the workforce planning tool which models the staff resource required to clear the projected level of faults in line with the Universal Service Obligation ("USO") service assurance targets determined by ComReg in Decision No. D02/08 published in May 2008. Eircom stated that in that decision ComReg determined that Eircom must improve the LFI from the level reported at 2007 to 12.5% by the end of June 2012. Eircom further added that the LFI of 12.5% used by Eircom in modelling the manpower resource required to deliver USO targets for fault clearance is a national average and is based on historic fault arrival patterns. The fault arrival rate in any given area is, in part, due to the age of the network but is primarily driven by the exposure of that network to the elements, or to other interference. In rural areas the predominantly overhead distribution is more exposed and comprised of assets that must be replaced more regularly. In urban areas the underground distribution provides better protection for assets that then require less regular replacement.

4.167 Hence, Eircom maintained that the fault arrival rate would always be lower in urban areas. Eircom also pointed out that ComReg, in ComReg Document No. 09/39, proposed that an average LFI lower than 12.5% is temporarily achievable in areas where network has recently been built or renewed. However, it believed that in exactly the same way as the (high) capital costs are not recovered from LLU prices only in the early years of the investment, so the (low) level of operating cost modelled for the early years of a newly built network are not an appropriate basis for LLU price setting. Consequently, Eircom found that the model for operating costs that should be used in conjunction with the LRAIC model for the investment should reflect the costs of operating a network where the assets are aged by 50% of their regulated lives.

4.168 Magnet agreed with ComReg as the LFI in most cases relates to a legacy network built many years ago and therefore it is not appropriate to have it included.

4.169 Smart also referred to the LFI of the legacy network. Smart believed "*that a more cynical view could be taken that by including the LFI, there could be an incentive for the LFI not to improve*".

4.170 BT believed that it should not have to pay for Eircom's underinvestment in its access network and the exceptionally high level of faults that its network experiences. BT further stated that a principle of regulation is to encourage efficient activity and to use the current LFI is rewarding inefficient operation which could be avoided through investment and preventative maintenance. BT also raised a point where it was finding it difficult to reconcile some of the modelling logic. As it understood from the consultation the model was designed to apply to areas where LLU is likely to be deployed and that ComReg suggested that the LFI should be reduced and thus repairs reduced, however, maintenance has been kept outside of the rental price so it's not clear how the benefit applies. It further believed that any application by Eircom of a repair per incident price negates any linkage to savings for the service being in more urban areas with underground cabling. BT therefore believed that the maintenance charge should be included in the rental charge.

4.171 With regard to Question 8, Vodafone agreed that a LFI not exceeding 8% was appropriate. BT supported the proposed LFI not exceeding 8% but believed that Eircom should be under an incentive to improve this further. Magnet and Smart believed that the capped number for LFI was far too high while Eircom noted that it cannot agree with this nationally averaged rate for LFI.

4.172 In BT's response to Question 8, BT stated that whilst maintenance is kept outside of the rental charge, the LFI has no impact on the line rental price.

4.173 Smart and Magnet both referred to the World Bank on its guidance on 'Quantitative Indicators for Quality of Service'. Based on its report it highlighted that '*For a well constructed and well maintained network, the average number of faults per main line per year should be 0.2 or less;*'. Both of these operators also referred to the World Bank assessment of line faults in Ireland in 2006 were 3.2 per 100 lines and that allowing the incumbent a higher line fault threshold was not acceptable. These operators also believed that a high LFI will lead to dissatisfied consumers. They also believed that LLU was most likely to occur in urban areas where the LFI should tend towards the lower end of the scale.

4.174 Eircom, in its response to Question 8, noted that the performance level of a LFI not exceeding 8% is much more demanding than the level of service set by ComReg for the long-term line fault occurrence. Eircom also stated that the level of 8% was lower than that experienced by most national operators, many of whom are dealing with a network that contains more underground network than is deployed in actuality by Eircom, or than that produced by the ComReg bottom-up model. Eircom further believed that given that the model reflected the regional variation in LFI, the modelling approach captured the lower costs per line of operating the urban, and newer, portions of the network and that this has been implemented by calculating the direct operating cost separately for 40 service assurance team areas. Eircom believed, based on the modelling exercise of the headcount numbers, that the operating cost for a large urban exchange is based on a fault index well below the national average of 12.5%. Eircom also stated that by applying the 95% weighting to exchanges larger than 1,600 lines and a weighting of 5% to exchanges below 1,600 lines reduced the fault index used to set the LLU rental actually below 8%.

ComReg's Conclusions

4.175 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.176 ComReg believes that the target LFI of 12.5% is a target set in an entirely different context to the one at hand, namely one in which ComReg is using other regulatory powers to get Eircom to improve its performance by setting a target. The LFI of 12.5% is a target based on Eircom's actual network in its current state and which has not had sufficient levels of investment in recent years. The target of 12.5% was set to an achievable level based on the current high level of faults – which ComReg considers too high - and is not an appropriate or reasonable level of LFI for an efficient network. The majority of operators that responded agreed with ComReg's position that the target LFI of 12.5% is related to Eircom's current network which is not a new network.

4.177 Eircom stated that it believed that the model for operating costs that should be used in conjunction with the LRAIC model for the investment should reflect the costs of operating a network where the assets are aged by 50% of their regulated lives. However, ComReg believes that the BU-LRAIC methodology should reflect assets of a new network.

4.178 BT, in its response, raised concerns regarding the modelling logic. It referred to the consultation and stated that the model was designed to apply for areas where LLU is likely to be deployed and that ComReg suggested that the LFI should be reduced and thus repairs reduced, however, maintenance has been kept outside of the rental price so it was not clear how the benefit applied. ComReg is of the view that it is important to note that the LLU charge discussed in this decision is a national average charge based on the application of a proportionate and appropriate weighting factor to the costs of both large and small exchanges. An LFI of 8% has been used as a proxy to determine the workforce or staff numbers required to maintain and run the network and to prevent faults occurring amongst other things. Therefore, this determines a reasonable proxy of efficient operating costs of the BU-LRAIC access network. ComReg has recognised in its modelling exercise that fault clearance is charged for separately by Eircom.

4.179 With regard to the LFI of 8%, Smart and Magnet believed that the LFI should be significantly lower than 8%. However, ComReg is of the view that as the modelled network is based on both underground and overhead infrastructure the LFI would tend to be higher than the levels indicated by both of these operators. As discussed in ComReg Document No. 09/39, the data received from Eircom on the current performance of new network builds and recently renewed network highlighted that the line faults are much lower than the line faults of the old network where the new network is underground. ComReg is of the view that the LFI of 8% is a more appropriate and reasonable reflection of an efficient network based on overhead and underground infrastructure. In addition, the LFI of 8% is consistent with analysis performed on the Eircom network in relation to efficiencies achieved by Eircom on network renewal programmes on parts of its current network.

4.180 Eircom stated that the level of LFI of 8% was lower than that experienced by most national operators. However, the LFI has been used as a proxy to determine the level of staff required to maintain and run the efficient access network based on BU-LRAIC modelling techniques. Therefore, ComReg believes that the LFI comparison with legacy networks in other EU countries is not entirely relevant in this instance.

4.181 Eircom also raised the point that by applying the 95% weighting to larger exchanges (now set at above 2,500 lines) and a weighting of 5% to smaller exchanges (now set to less than 2,500 lines) reduces the fault index used to set the LLU rental below 8%. While ComReg agrees that this is the case it is important to note that the LFI of 8% is an LFI at a national level. An LFI below 8% is expected in urban areas where the network is built underground. This is consistent with data obtained from Eircom in relation to new network builds based underground.

4.182 ComReg believes that the current level of LFI of the current Eircom network of between 15% and 20% is not appropriate as this relates to a legacy network built many years ago, with under investment in recent years. In addition, ComReg concludes that a LFI of 12.5% is not appropriate in the context of setting a BU-LRAIC LLU price. The LFI of 12.5% was set for a completely different purpose and is related to the current Eircom network which is not a new network. This 12.5% LFI target is based on Eircom's actual network which would not appear to have had sufficient levels of investment in recent years, giving rise to the current high level of faults. ComReg believes it is reasonable and proper to conclude that a maximum LFI of 8% is appropriate given that the modelled network relates to that of an efficient network (based on underground and overhead infrastructure) that had invested appropriate amounts in the renewal of the network over time.

Conclusion in relation to the LFI of the Network:

A Line Fault Index not exceeding 8% is used within the BU-LRAIC model in determining the maximum LLU and SLU monthly rental charges.

3. Fault Clearance Charge

ComReg Document No. 09/39: Principles Supporting Conclusions

4.183 The Eircom fault clearance charge is included as a separate charge in the Access

Reference Offer ("ARO") price list. ComReg was of the preliminary view that the current pricing structure should remain in place, that is the LLU monthly rental charge is a separate charge to the fault clearance charge. By including the fault clearance costs in the LLU monthly rental charge the cost per line per month may increase by approximately 10%.

4.184 ComReg was also of the preliminary view that a separate charge acts as an incentive to OAOs when reporting faults to ensure any possible checks have been carried out on their network, prior to reporting them to Eircom.

4.185 The current charge for fault clearance in the ARO price list is €109, excluding line testing. Based on ComReg's review of the fault clearance charge as part of the overall LLU review, ComReg was of the preliminary view that the fault clearance charge modelled on a BU basis should not exceed a maximum of €109 (excluding line testing) and not exceed a maximum of €117 (including line testing).

Consultation Question in ComReg Document No. 09/39

***Q.10. Do you agree that the fault clearance charge should remain a separate charge from the LLU monthly rental charge? Please state the reasons for your response*.**

Views of Respondents to ComReg Document No. 09/39

4.186 Eircom, Smart and Vodafone agreed that the fault clearance charge should remain separate from the LLU monthly rental charge. BT and Magnet believed that the fault clearance charge should not be separate.

4.187 Eircom stated that it considers that the separate fault reporting charge should be retained for three reasons:

- A charge for fault clearance of unbundled loops separate from the monthly rental charge encourages efficient behaviour by OAOs in reporting faults to Eircom.
- As Eircom reduces the LFI, the price structure proposed for LLU services will allow OAOs to benefit from improved Eircom efficiency.
- The existing price structure has operated successfully for a number of years and Eircom has detected no demand for a change that would, in any case, lead to an increase in monthly rental.

4.188 Eircom also believed that the implementation of a separate charge for fault clearance provided the OAO with a strong economic incentive to make efficient use of the test data and assess whether or not the fault occurs within their systems before reporting it to Eircom. Eircom has also stated that as the Eircom programme of interventions to meet the USO glide path for LFI takes effect, the OAO will see the occurrence of fault clearance changes decline and the total cost of operating the unbundled path will fall. Eircom also set out that the established LLU processes for fault reporting and clearance are built around the price structure and these are well understood by industry and operate efficiently.

4.189 Smart believed that there must be an incentive to get the LFI as close as possible to zero and it was therefore a preference to have the fault charge separate to the rental charge. Smart also stated that it was very disappointed to see the current fault charge remaining at current levels given recent announcements from Eircom in relation to its cost base and cost reduction program. Smart did not believe that this cost was justifiable or sustainable in the medium to long-term and drives substantial operational costs in running a LLU based business, in particular when coupled with the extremely high fault rates on Eircom's network.

4.190 Vodafone stated that it would be inefficient to recover the cost of clearing faults from the LLU monthly charge when the driver of these charges, the instance of faults, is separate from the factors determining the underlying efficient costs of the Significant Market Power ("SMP") operator providing access on the basis of LLU.

4.191 BT believed that the maintenance costs should be included in the LLU monthly rental charges particularly as the LFI is so high and the LLU operators are required to pay for repair on a per incident basis. BT further stated that there was no incentive on Eircom to improve its repair services as it did not experience the cost within the product. BT further acknowledged that operators can provide test information and that the current ARO price list acknowledged this by providing two separate charges for fault clearance. BT suggested that where test results are supplied there should be no separate fault clearance charge but a different monthly rental charge. BT referred to the charges in the UK for full unbundling of £7.20 per month which includes the automated remote test facility and line maintenance. It also believed that the UK circuits are also copper based with an infrastructure similar to that of Eircom's access network.

4.192 Magnet stated that a separate fault charge leads to an over recovery of costs as maintenance and engineers staff costs are also included in the cost of the network.

ComReg's Conclusions

4.193 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.194 ComReg agrees with the point raised by Vodafone that it would be inefficient to recover the costs of clearing faults from the LLU monthly rental charge when the driver of these charges the instance of faults is separate from the factors determining the underlying efficient costs of the SMP operator providing access on the basis of LLU.

4.195 BT in its response stated that there is no incentive on Eircom to improve its repair service, as it did not experience the costs within the product. However, a decision taken by ComReg in 2007 in relation to the USO Quality of Service Performance Targets set outs an LFI target of 12.5% to be achieved by Eircom by June 2012. Therefore, ComReg disagrees with BT that there is no incentive for Eircom to improve its repair services. In addition, BT refers to the UK cost for full unbundling of £7.20 per month (including fault clearance costs) and also that the UK has an infrastructure similar to that of Eircom's access network. However, ComReg is of the view that population density and dispersal are somewhat different to those of other countries. With just 60 people on average per square kilometre, Ireland has a relatively low population density and sits in the lower quartile when compared with other countries. A high proportion (approximately 40%) of our population lives in rural areas[43]. Rural dwellers tend to live in a relatively dispersed manner and the incidence of one off dwellings outside villages and towns appears to be high in comparison with other countries. This is illustrated by the graph and map set out in Appendix C of this document. This results in higher costs of providing services to the more rural parts of the country.

4.196 With regard to the point raised by Magnet regarding over-recovery of costs, as already discussed above, as fault repairs are charged for separately, this has been recognised by ComReg through the modelling process.

4.197 ComReg notes that the current level of faults on the Eircom network remains high. Given that OAOs are currently experiencing a high incidence of faults which are subject to a fault clearance charge of approximately €109 (excluding line test) ComReg believes that this may act as a disincentive for LLU take-up. ComReg is currently of the view that an alternative approach to determining the fault clearance charge may be necessary if the high level of faults persist. ComReg intends to keep this under review during the price control period.

4.198 ComReg believes that a separate fault clearance charge acts as an incentive to OAOs when reporting faults to ensure any possible checks have been carried out on their network, prior to reporting them to Eircom. In addition, given that the current level of faults is high it is not proportionate or reasonable to include fault clearance costs as part of the cost of providing access on the basis of LLU. ComReg concludes that the charge for fault clearance will remain separate to the LLU and SLU monthly rental charge and will not exceed €109 (excluding line testing) and not exceed €117 (including line testing).

Conclusion in relation to the Fault Clearance Charge:

The fault clearance charge will remain a separate charge to the maximum LLU and SLU monthly rental charge and will not exceed €109 excluding line testing and will not exceed €117 including line testing. However, ComReg will keep this under review.

Overall Approach on Capital Costs and Operating Cost Inputs

Consultation Question in ComReg Document No. 09/39

Q.9. Do you agree with the overall preliminary approach taken by ComReg above in relation to the basis used in determining the capital costs and operating costs used in the BU-LRAIC model for determining the monthly rental charges of LLU and SLU services in Ireland? Please state the reasons for your response.

[43] Source: World Development Indicators 2007. In comparison, the UK has 206 persons per Km^2, with 10% located in rural areas with which there are 105 persons per Km^2; the Netherlands has 395 persons per Km^2, with 18% located in rural areas within which there are 250 persons per Km^2; Denmark has 126 persons per Km^2, with 14% located in rural areas within which there are 30 persons per Km^2;

Views of Respondents to ComReg Document No. 09/39

4.199 Magnet and Smart agreed with the principles outlined but believed that it was impossible to make a meaningful assessment as no figures or percentages were provided. Magnet and Smart believed that the OAOs had no exposure what so ever to maps, GIS information, models etc. Both of these operators also noted the level of prior exposure of cost models, principles, etc that was afforded to Eircom in arriving at many of the conclusions outlined.

4.200 BT agreed with the overall preliminary approach other then the fact that repair costs were outside the model.

4.201 Vodafone believed that there was insufficient information available to Vodafone to provide any firm views on the preliminary approach taken by ComReg. Vodafone stated, in its response, that the lack of information seriously limited its capacity and for other interested parties to provide informed comment on the proposed costing approach and Vodafone urged ComReg to consider whether additional information could be provided while still addressing legitimate confidentiality concerns. In this regard, Vodafone noted the engineering rule on pole distance has been used within the model but Vodafone would not consider that this data would be commercially sensitive information warranting protection on confidentiality grounds. However, aside from that Vodafone believed that the high level description of the method adopted by ComReg appears in many respects broadly consistent with the approach that Vodafone believed should be adopted. Vodafone also raised the question why ComReg has not benchmarked Eircom's operating costs and indirect capital costs against those of U.S. Local Exchange Carriers ("LEC") in the current modelling approach. It further stated that this benchmarking approach was used by regulators in the U.K. and France in informing the setting of regulated prices in those jurisdictions.

4.202 Eircom disagree with ComReg's proposed approach for the reasons discussed in response to the other questions in the document.

ComReg's Conclusion

4.203 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

4.204 The point raised by BT in relation to the exclusion of repair costs from the monthly rental charge is discussed above.

4.205 Vodafone raised the point that ComReg should have considered benchmarking Eircom's operating costs and indirect capital costs against those of U.S. LECs. However, given that Eircom was opposed to the use of benchmarked data in the LLU review in 2004, ComReg is of the view that incorporating the actual relevant operating costs of the Eircom access network, adjusted for efficiencies, is more reflective of the costs of providing a LLU service in Ireland. ComReg also believes that this is the most reasonable and appropriate means of determining the efficient level of operating costs for the BU model in that it reflects the actual efficient costs of providing the LLU service in Ireland. In addition, there is not the same level of disaggregated US LEC data now available as was the case in 2003/04.

4.206 With regard to the comments raised by operators in relation to the lack of information provided on the model, ComReg is also of the view that it went as far as possible to provide an insight into the data and assumptions used within the BU model. Given the confidential nature, and indeed commercial sensitivity, of the data used within the model, ComReg must respect the confidentiality of the data provided while providing industry with an overview of the main inputs to the model and the methodologies applied in determining the relevant charges. In addition, external experts have been used in determining the relevant inputs to the model and the methodologies in determining the maximum LLU and SLU monthly rental charges. ComReg believes that the final model is reflective of an efficient network while taking into consideration the actual relevant costs incurred by Eircom.

5 Local Loop Unbundling and Sub Loop Unbundling Maximum Charges

5.1 Using its conclusions on pricing methodologies from **Section 3,** ComReg now sets out the application of these methodologies within the model in order to determine the LLU and a SLU charges per line.

5.2 In ComReg Document No. 09/39 ComReg consulted on the application of the preferred pricing methodologies in determining the maximum LLU and SLU monthly rental charges. As a result of operator responses to this consultation, ComReg sought further views on two specific areas regarding the pricing methodologies, namely, working line threshold and long lines.

5.3 ComReg's approach to implementing the pricing methodologies is as follows:

- *Step 1*: Distinguish between those exchanges that are more likely to be unbundled with those that are less likely to be unbundled. ComReg is of the view that it is appropriate considering both current OAO unbundling behaviour and OAO unbundling plans to draw this distinction, based on the number of lines at a given exchange. In ComReg's view, small exchanges are less likely to be unbundled than large exchanges within the price control period.
- *Step 2*: Adjust the estimated cost of small and large exchanges, to take account of the fact that long lines are less likely to be unbundled. This is necessary because not all long lines are generally suitable for current day broadband services and ComReg is of the view that it is unlikely that OAOs will unbundle lines that are unable to support current day broadband services.
- *Step 3*: Calculate the LLU price based on the weighted average cost of small and large exchanges.

Step 1: Distinguishing between small and large exchanges

ComReg Document No. 09/39: Principles Supporting Conclusions

5.4 In order to implement an approach of distinguishing between small and large exchanges, it was necessary for ComReg to give consideration to those exchanges that, because of their economic characteristics, are more or less feasible for an OAO to unbundle within the price control period. This was based on the best available information from Eircom and OAOs and consideration of other regulatory objectives.

5.5 Unbundling exchanges takes time and is capital intensive because of the backhaul and Digital Subscriber Line Access Multiplexer ("DSLAM")[44] equipment that OAOs need to install to provide current day broadband services. In ComReg's view, the high-fixed costs that are involved and the lead time it takes to unbundle at an exchange means that OAOs will tend to focus on unbundling large exchanges where they can benefit from economies of scale. ComReg also discussed at that time that the LLU experience in Ireland to date showed that the smallest exchange currently

[44] A DSLAM allows telephone lines to make faster connections to the internet. It is a network device, located in the exchange of a service provider, that connects multiple customer Digital Subscriber Lines ('DSLs') to a high speed internet backbone line using multiplexing techniques.

unbundled has approximately 2,600 lines, putting it amongst the largest 11% of all exchanges. In some areas, high backhaul costs may also act as a significant barrier to unbundling by OAOs.

5.6 There are currently approximately 1,200 exchanges in Ireland. However, a large proportion of these exchanges are in remote areas of Ireland and serve a small number of houses/businesses. For the reasons given above, ComReg considered it highly unlikely that an OAO would unbundle at those exchanges during the proposed price control period. Specifically, ComReg was of the preliminary view that exchanges with less than 1,600 lines were unlikely to represent feasible targets for OAOs to unbundle during the price control period for the reasons discussed in ComReg Document No. 09/39.

5.7 In ComReg Document No. 09/39 ComReg stated its preliminary view that 1,600 lines (68% of total lines) categorised in the 'large' exchanges was deemed reasonably feasible for unbundling during the price control period.

Consultation Question in ComReg Document No. 09/39

Q.11. Do you agree that exchanges with working lines in excess of 1,600 is a reasonable cut-off for those exchanges that are unlikely to be economically viable for OAOs to unbundle in the timeframe of the proposed price control period? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/39

5.8 Magnet, Smart and Vodafone agreed with the proposed methodology but disagreed with the proposed cut-off of 1,600 working lines.

5.9 BT believed that exchanges with working lines *in excess* of 1,600 lines were a reasonable cut-off point.

5.10 Eircom totally disagreed that any exchanges should be excluded from the cost calculation and believed that the 1,600 line cut-off had no robust basis, given the proposed price.

5.11 Magnet, Smart and Vodafone proposed alternative, higher cut-off points.

5.12 Magnet, in its response, stated that a number close to 5,000 lines would be more reflective of what is likely to happen over the initial price control period. Magnet further stated that as LLU progressed and exchanges were unbundled a more graduated control (or glide path) could be applied but it was essential to kick start investment now and to keep costs high at this point was unwise and would not have the desired impact. Magnet also suggested that an alternative method would be to provide a glide path for each year of the control based on a number of smaller and larger exchanges actually unbundled in that period as opposed to front loading costs at this point even though it was highly unlikely that unbundling of small MDFs will take place at all in the initial period of the control.

5.13 Smart proposed that a number close to 3,000 lines would be more reflective of what is likely to happen over the initial price control period. Smart also suggested that an alternative method of a glide path may also be considered. The details provided by Smart in this regard are consistent with those outlined by Magnet in its response in the paragraph above.

5.14 Vodafone believed that ComReg did not provide a robust economic rationale for the selection of the proposed 1,600 working line threshold. Vodafone urged ComReg to adopt an alternative approach to determining the optimal cut-off point for exchanges that can likely be feasibly unbundled that is based on evidence of costs that OAOs actually face. Vodafone also stated that it does not understand why ComReg considers France to be the most appropriate benchmark in terms of determining the cut-off point at which exchanges are unlikely to be viable to unbundle. Vodafone believe that where a benchmarking approach is applied, the U.K., is the most suitable country in informing the decision on the optimal cut-off point between large and small exchanges. Vodafone believed that, as the evidence from the U.K. suggests exchanges with less than 2,500 lines are not normally unbundled by OAOs that this is consistent with the fact that the smallest exchange currently unbundled in Ireland has in excess of 2,600 lines. Vodafone emphasised that in the first instance the threshold for determining exchanges, that are likely to be unbundled during the review period, should be based on evidence of costs that OAOs actually face in Ireland, but information from the U.K. indicated that the optimal threshold should approximate 2,500 working lines rather than 1,600 lines. Vodafone recommended that ComReg should change the parameters for its LLU costing methodology accordingly.

5.15 BT stated that it was highly unlikely it would unbundle at an exchange in Ireland with less than 1,600 lines given the economics of trying to recover the costs. In this regard BT stated that it would not be possible to recover the backhaul (equipment costs and running costs) to make such an investment viable.

5.16 Eircom, in its response, stated that the proposed methodology was flawed in logic and application, uses arbitrary and poorly referenced assumptions and that the implications of its implementation for the development of a competitive retail broadband market in rural Ireland are extremely serious. Eircom included a detailed annex (in appendix 1 of its response) relating to de-averaged pricing. As part of the detail set out in this regard Eircom stated that it cannot accept the principle of excluding any proportion of any subset of lines from the calculation of a nationally average price, *unless an explicit, credible and robust mechanism* (Emphasis added) is put in place to enable Eircom to recover the cost of those lines excluded from the calculation for LLU pricing purposes. Eircom stated that absent such a mechanism, it rejected the principle and its application in the context of LLU pricing.

5.17 Eircom further added that to the extent ComReg seeks to 'de-average' prices by reducing prices in exchange areas likely to be unbundled to reflect costs in such areas, but seeks to maintain the average price in higher cost areas, then it is axiomatic that a funding deficit will exist and that Eircom, as the USO operator, is entitled to the benefit of a USO fund to ensure that it can earn its regulated rate of return. Eircom believed that it is not acceptable that ComReg can seek to sidestep an issue of such significance by saying that it will consider any request for funding that may arise. It added that ComReg must openly acknowledge that a deficit will arise and set out how it will respond to the funding request which will inevitably follow including how it would propose to finance and guarantee the USO fund, and address timing and payment issues. Eircom believed that in the absence of a clear approach to such issues neither Eircom, as the recipient of fund proceeds, or OAOs (who may be required to contribute to the fund) can properly assess the merits of ComReg's proposed pricing approach. In this regard, Eircom also referred to its response to ComReg Document No. 08/56 in relation to the LLU pricing methodology.

ComReg's Initial Position following ComReg Document No. 09/39

5.18 Following consideration of the operator responses to Question 11 in ComReg Document No. 09/39 and receipt of further confidential information from Eircom ComReg sought further input from industry regarding the working line threshold.

ComReg Document No. 09/62: Principles Supporting Conclusions

5.19 In this document ComReg discussed that the majority of operators believed that a cut-off of 1,600 lines was inappropriately low and a number of the operators indicated that the cut-off point should be raised and suggestions included 2,500 lines, 3,000 lines and 5,000 lines.

5.20 ComReg further assessed the issue, based on the most up-to-date information available in the market in Ireland, the boundary between those exchanges that it considered feasible for unbundling and those that it did not. The evidence demonstrated that, despite many years of a regulated access regime, OAOs did not currently unbundle exchanges with fewer than approximately 2,600 lines and that approximately 95% of those unbundled exchanges had more than 4,000 lines. In addition, the number of exchanges subject to full LLU had remained static in recent years and the smallest exchange unbundled to date had approximately 2,600 lines.

5.21 ComReg also noted that only 46% of exchanges with more than 2,500 lines were currently unbundled by OAOs. This suggested that these exchanges were likely to be more natural targets for OAOs, than smaller exchanges in the future.

5.22 ComReg requested further information from Eircom in relation to OAO's future unbundling plans. The confidential data provided highlighted that the majority of exchanges requested by OAOs to be unbundled were well above the proposed threshold of 2,500 lines, while only one exchange was below the proposed threshold.

5.23 Following consideration of data received it was clear that OAOs are unlikely to unbundle exchanges significantly below the cut-off level of 2,500 over the three year price control period. While ComReg could envisage smaller exchanges i.e. those below 2,500 lines, being unbundled at some point in the future, OAOs were more likely to commit capital investment in stages and review the return considered on these investments, before committing to smaller, low density exchanges, where the returns may not be as great.

Further Consultation Questions in ComReg Document No. 09/62

Q.1. ***Do you agree that exchanges with working lines in excess of 2,500 is currently a reasonable threshold for those exchanges that are likely to be economically viable for OAOs to unbundle in the next three years? Please state the reasons for your response.***

Q.2. ***Given the current level of take-up of LLU in Ireland to date, the economies of scale referred to above, do you believe that, among other things, the current price of LLU plays a significant role when considering investing in LLU in the future? Please state the reasons for your response.***

Views of Respondents to ComReg Document No. 09/62

5.24 In relation to Question 1**,** BT, Magnet and Vodafone and Ireland Offline agreed that the appropriate threshold was in excess of 2,500 lines, although Ireland Offline emphasised its view that the threshold should be much higher. BT agreed with the threshold but highlighted that the economic viability of an exchange depends on the volume take-up in an exchange, the cost of backhaul and the regulatory environment.

5.25 Magnet underlined that, to date, the smallest exchange unbundled by it was Crossgalla Co. Limerick with 3,300 working lines.

5.26 Vodafone also agreed and highlighted that it was unlikely to be economically feasible for OAOs to unbundle exchanges with less than 2,500 working lines (to date none have been unbundled) in the proposed three year time period. Vodafone believed that the key constraint is not the capacity of the exchange but the population within the catchment area. The smaller exchanges are likely to have a larger number of long lines to maximise the fixed costs assets base; are outside the urban areas; and will have a higher proportion of lines served via overhead cables (as high cost of ducting cannot be justified due to lower population density). Vodafone cited the UK as a comparator case and stated that ComReg should consider any further evidence received that would suggest a higher threshold before making its final decision.

5.27 Eircom disagreed and stated that there is no reasonable threshold. According to Eircom OAOs examine a number of factors not solely the number of lines in an exchange. Even if OAOs believe that the number of working lines is a reliable indicator, there is no justification to prove that 2,500 is the right threshold to determine viability. Eircom also stated that ComReg is basing its deliberations on some quite erroneous assumptions. Eircom referred to the top of page 4 of ComReg Document No. 09/62 and highlighted where ComReg's referred to 'high speed next generation broadband'. Eircom further added that it assumes that ComReg is referring to ADSL 2+ equipment and Eircom pointed out that contrary to what ComReg says in ComReg Document No. 09/62 Eircom has been rolling out ADSL2+ to smaller exchanges. Eircom provided confidential data regarding its rollout of ADSL2+. Eircom also underlined its concern that ComReg has not duly considered competition from cable, mobile etc. Eircom then highlighted its view that the 95:5 weighting is not addressed and the explanation, to date, indicated no satisfactory quantitative analysis. Finally, Eircom also stated that it was not appropriate to select different working line thresholds for SLU and LLU.

5.28 Ireland Offline also disagreed and stated that the threshold should be approximately 4,000 lines or greater over the next three to five years. It also made reference to its imminent NGN consultation response in relation to the provisioning of redundant NGN backhaul from each of these exchanges must be an explicit priority for ComReg in any NGN strategy over that time.

5.29 In relation to Question 2, BT, Magnet and Vodafone agreed that given the current level of take-up of LLU in Ireland to date that the current price of LLU played a significant role when considering investing in LLU in the future. Eircom and Ireland Offline disagreed.

5.30 BT added that where pricing barriers have been resolved (it provided articles from the UK as an example), OAOs have invested in LLU infrastructure, created jobs, increased competition and innovation.

5.31 In its response to Question 2, Eircom disagreed and stated that a cost oriented charge of €16.52 is the appropriate charge (i.e. LLU model pre adjustments) as it would eliminate disincentives to further investment in critical infrastructure due to what it terms "current below cost pricing" and it would satisfy ComReg's statutory objectives. It also stated that operators must consider a range of costs which in aggregate must be compared to potential revenues (which are in turn limited by customer willingness to pay). According to Eircom, excessively low LLU prices might deter investment in mobile and wireless broadband. The more successful LLU is, the lower the prospect of investment in fibre and vice versa the existence of fibre networks deters investment in LLU.

5.32 In relation to Question 2, Magnet agreed but highlighted that the price needs to be reduced further for the market to see any change in the number of exchanges unbundled and the number of LLU customers. It also stated that it will not unbundle any more exchanges even if the proposed price is invoked.

5.33 Vodafone agreed and noted that the current charge has been a disincentive to unbundling as evident from the low percentage of lines unbundled to date (3.4%). A reduction will provide the incentive to OAOs to unbundle large exchanges and will facilitate innovation, investment and competition. Vodafone stated that they expect the final charge to be considerably below €12.18 once the revisions to parameters have been incorporated.

5.34 Ireland Offline disagreed and believed that what it terms as ComReg's "painful drip of permaconsult but do nothing" is of more significance.

ComReg's Conclusions

5.35 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

5.36 ComReg is of the view that some exchanges are more economically feasible to unbundle than others during the price control period. Apart from Eircom, all operators appeared to agree with the principle. The main issue was to determine the appropriate level of lines or threshold at which to distinguish between those exchanges likely and unlikely to be unbundled during the price control period. In ComReg Document No. 09/39 ComReg expressed the preliminary view that 1,600 lines represented a highly conservative point at which to draw the boundary between those exchanges that are considered viable for unbundling during the price control period and those that are not. Vodafone in its response to ComReg Document No. 09/39 believed that ComReg did not provide a robust economic rationale for the selection of the proposed 1,600 working line threshold. Following operator responses to this consultation and the assessment of further up-to-date evidence regarding current unbundling of OAOs and future unbundling plans of OAOs, ComReg is now of the view that the initial threshold of 1,600 was excessively conservative and that a higher threshold is more appropriate.

5.37 ComReg is of the view that a threshold of 2,500 working lines is a more appropriate threshold based on currently available data in the market place. While the determination of the appropriate threshold was based on an assessment of the actual

OAO unbundling patterns to date as well as the unbundling plans for the future, there are good reasons to believe that the 2,500 line threshold has a reasonable basis.

5.38 Firstly, as stated in ComReg Document No. 09/39, unbundling exchanges takes time and is capital intensive. ComReg believes that the high-fixed costs that are involved and the lead time it takes to unbundle at an exchange means that OAOs will tend to focus on unbundling large exchanges where they can benefit from economies of scale.

5.39 Secondly, and perhaps more importantly, the evidence to date shows that despite many years of a regulated access regime, OAOs do not currently unbundle exchanges with fewer than approximately 2,600 lines and that approximately 95% of those unbundled exchanges had more than 4,000 lines. This confirms, first, that the initial threshold proposed by ComReg of 1,600 working lines was a material underestimation and, second that even a figure of 2,500 is very conservative based on actual unbundling trends to date. However, ComReg considers the conservatism by not increasing the threshold to a figure of 4,000 working lines. Despite the evidence observed by ComReg from Eircom and OAOs, ComReg believe that the threshold of 2,500 working lines is an appropriate cut-off point. In particular, the future LLU price reductions envisaged under this decision are intended to encourage and stimulate LLU take-up in Ireland.

5.40 Thirdly, confidential data provided by Eircom highlighted that the majority of exchanges requested by OAOs to be unbundled (at some point in the future) are also well above the threshold of 2,500 lines, while only one exchange is below the threshold. While the revised maximum LLU monthly rental charge will be lower than the current LLU monthly rental charge, ComReg is of the view that this is likely to contribute to a greater propensity to unbundle than observed to date. It is nonetheless relevant to note that it even appears that the OAO unbundling plans for the future relate to exchanges above the 2,500 threshold therefore confirming the conservative nature of the determination of the threshold of 2,500 lines in the present case. Given that the main OAO unbundling plans that ComReg is aware of may be based on the implementation of the new revised LLU monthly rental charges as previously discussed in ComReg Document No. 09/39, ComReg believes that unbundling within the timeframe of this price control will not differ significantly to the levels as indicated. However, if the new revised maximum LLU monthly rental price is not implemented then any potential for further unbundling by OAOs may not occur.

5.41 Vodafone questioned why ComReg considered France to be the most appropriate benchmark in terms of determining the cut-off point at which exchanges are unlikely to be viable to unbundle, in its response to ComReg Document No. 09/39. However, ComReg has not determined the cut-off point based on a benchmark from France or indeed any other country. ComReg has examined the evidence currently available to it in the market in Ireland in order to assess the boundary between those exchanges that it considers feasible for unbundling and those that it does not. ComReg has referred to other countries which had recognised the importance of economies of scale in determining whether an exchange could be unbundled. For example, OAOs in France do not normally unbundle exchanges with less than 1,600 lines, or 2,500 lines in the UK.

5.42 In Eircom's response it raised a number of issues;

- The focus on the number of working lines as a threshold was inappropriate
- ComReg had not sufficiently justified the appropriateness of its 95:5 weighting
- It was not appropriate to set a different threshold for SLU and LLU
- ComReg has relied upon some erroneous assumptions in forming its view
- There was insufficient analysis provided on the competitive dynamics.

5.43 ComReg is of the view that the number of working lines represents a reasonable basis on which to draw the threshold. The information available to date suggests that a threshold of 2,500 working lines is a reasonable yet conservative cut-off point given the current unbundling behaviour of OAOs, as well as OAO unbundling plans for the future. This point has been addressed above in greater detail.

5.44 The working line threshold is clearly linked to the application of the weighting factor of 95:5. The weighting factor applied in the regulated price will take into account the higher costs of those exchanges ComReg deems to be unfeasible for unbundling during the period of the price control. This has been addressed in more detail under Step 3 below.

5.45 ComReg disagrees with Eircom's assertion that it is necessary to set the same line threshold for LLU and SLU. ComReg believes that LLU and SLU are two services which have quite different economic characteristics (both in terms of revenues and costs) and therefore, there is no reason to believe that these would become feasible for unbundling at the same threshold. As previously emphasised, the threshold set for LLU is based upon ComReg's assessment of the economic viability of LLU, combined with information provided to it on the current unbundling intentions of OAOs. ComReg has based its assessment of the appropriate SLU threshold on a careful assessment carried out by Analysys Consulting.

5.46 As regards the alleged erroneous assumptions raised by Eircom, ComReg has considered the additional confidential evidence provided by Eircom on its roll-out of ADSL2+ to its exchanges. However this does not change ComReg's position that the number of working lines represents an appropriate basis on which to set its threshold.

5.47 ComReg disagrees with Eircom's assertion that insufficient regard had been taken of the competitive dynamics that may arise from its proposed reforms. Indeed the express purpose of ComReg's amendments to the methodology for calculating the LLU price is to facilitate efficient competition and provide appropriate investment incentives for both Eircom and OAOs in the market (including cable operators). ComReg believes that to date, among other things, the current price of LLU plays a significant role when considering investing in LLU in the future. ComReg believes that the revised LLU maximum monthly rental charge now reflects the cost of unbundling economically feasible exchanges and where less account is taken of the costs of provision of very small (rural) exchanges. In ComReg's view this provides an appropriate basis upon which Eircom and OAOs (including cable operators) may compete. Having a LLU monthly rental charge that is calculated by giving much more weight to those local loops that are in large exchanges, results in better "make" or "buy" signals while ensuring that that there is no foreclosure of investment on other platforms e.g. cable. ComReg also noted that there are alternative wired infrastructures in dense areas in Ireland. ComReg has been mindful of other alternative platforms when setting the maximum LLU monthly rental charge. UPC is operating its network in the 5 major urban areas of Ireland i.e. Waterford, Galway, Limerick, Cork and parts of Dublin. ComReg believes that the mobile platform is not particularly relevant given the potential for very high speed broadband over the fixed line platform as part of LLU.

5.48 ComReg notes Eircom's previous comments that these proposals may also lead to a structural funding deficit due to the costs that Eircom faces as a result of its universal service obligations. ComReg is of the view that the issues regarding funding must be addressed separately and a decision on LLU pricing is not the appropriate forum for conducting such a review. There is a very specific statutory mechanism for making a universal service funding application and it would be highly irregular to address this very different regulatory issue in the current context. The issue of USO funding is outside of the scope of this review and is instead currently being reviewed by ComReg as part of a separate work-stream.

5.49 ComReg intends to monitor the threshold of 2,500 working lines during the price control period. If reliable periodic data becomes available which shows a material take up of LLU in exchanges below the working line threshold of 2,500 lines then ComReg reserves the right to reassess that assumption, if necessary.

5.50 ComReg concludes that the updated threshold of 2,500 lines represents a more appropriate threshold on which to base its analysis than the original proposal of 1,600 lines. This level is more closely aligned with the actual and potential unbundling behaviour of OAOs. Indeed ComReg notes that OAOs have not to date unbundled exchanges with fewer than approximately 2,600 lines and OAO unbundling plans highlight that the majority of exchanges requested by OAOs to be unbundled are well above the proposed threshold of 2,500 lines.

Conclusion in relation to Working Line Threshold:

In determining the maximum LLU monthly rental charge the working line threshold for exchanges is set at a minimum of 2,500 working lines during the price control period.

Step 2: Adjusting for long lines

ComReg Document No. 09/39: Principles Supporting Conclusions

5.51 As proposed in ComReg Document No. 09/39, ComReg considered the ability of OAOs to provide current day broadband as an essential pre-requisite for their ability to unbundle lines, based on OAOs views and European comparisons. In a submission to the Joint Committee on Communications, Energy, and Natural Resources[45], in relation to broadband, Eircom stated that: "*Regardless of which type of copper line is involved, there is a problem if the distance is more than approximately 5 km……*". Having regard to that statement, amongst other things, ComReg was of the view that it was not feasible to provide current day broadband services on lines in excess of 5km and therefore, ComReg considered it appropriate to apply a lower weight to the

[45] Please refer to http://debates.oireachtas.ie/DDebate.aspx?F=MAJ20090311.xml&Node=H2#H2 for full minutes of this meeting on Wednesday 11 March 2009

costs associated with lines in excess of that length in its determination of the LLU price. ComReg noted that this approach was similar to that adopted by Ofcom in the UK.

5.52 ComReg proposed to implement the approach for adjusting long lines in a conservative manner such that Eircom will still be allowed to recover a portion of costs associated with long lines.

5.53 Firstly, ComReg noted that both long and short lines share a common infrastructure. For example, a long line may start by sharing a trench with short lines, before moving into a dedicated trench or overhead cable as it gets further away from the exchange.

5.54 There are many different ways of apportioning those common costs but, in order to be conservative, ComReg only proposed to calculate the cost of short lines on a *stand alone basis*. In other words, ComReg proposed that the LLU price (which for the reasons given below will be weighted towards the cost of short lines) should cover the full costs associated with the relevant infrastructure, even though some of that infrastructure is shared with long lines.

5.55 Secondly, in order to further enhance the conservative nature of the calculation, ComReg proposed to include an element of the incremental cost of long lines in its calculation. In the absence of direct evidence about the proportion of long-line costs that should be included in this calculation, ComReg proposed to adopt a methodology that was consistent with that being used in relation to the weighting applied to large and small exchanges (discussed further below). The details of the initial calculations, used in this regard, were discussed in ComReg Document No. 09/39. In summary, ComReg considered that the most appropriate way to achieve this was to apply a lower weight to the costs associated with longer lines in its determination of the LLU price.

Consultation Questions in ComReg Document No. 09/39

Q.12. Do you agree that it is unlikely that an OAO would unbundled a line unless it was able to provide broadband services over that line; and do you agree that 5km represents the maximum line-length that may be used for those services? Please state the reasons for your response.

Q.13. Do you agree that ComReg's proposal is conservative in that it includes an element of the costs associated with lines in excess of 5km?

Views of Respondents to ComReg Document No. 09/39

5.56 In relation to Question 12, Magnet, Smart, Vodafone and BT agreed that they would not unbundle a line unless it was able to provide broadband services. In addition, these operators agreed that 5km was a reasonable maximum line-length for these services.

5.57 Eircom, in its response to Question 12, disagreed that an OAO is unlikely to unbundle a line unless it is able to provide a broadband service over that line. At the range of price points proposed by ComReg for ULMP Eircom believed that the OAO locating equipment at an Eircom MDF will receive a contribution of almost €6 (€18.02 less €12.18) per month to the costs of provision of their own PSTN service when compared with the Single Billing –Wholesale Line Rental ("SB-WLR") charge that OAOs now face to provide service to customers using the Eircom wholesale variant. Eircom further stated that an OAO deploying a subscriber access module ("xSAM") with combi-cards can choose to provide (i) PSTN, (ii) PSTN and Broadband, or (iii) stand-alone broadband on any line. Once the OAO has made the fixed investment in locating this equipment at the Eircom MDF and the investment in providing their own PSTN service to sell alongside broadband it will sell this service to any retail customer that does not have a requirement for fixed broadband. Eircom stated that it is probable that a OAO would not unbundle any exchange, unless it intended to offer broadband services, however, it also believed that having unbundled a site, the OAO was likely to offer voice services. In addition, it stated that if a specific line in an unbundled area could not support a broadband service, it may still be economic to offer a voice only service.

5.58 Eircom also disagreed that 5km represented the maximum line length that should be used for the provision of PSTN or broadband services. Eircom stated that on its network, 62dB is the average attenuation observed for lines in excess of 5km. Some 10.34% or 155,000 of the 1,509,000 lines connected to DSL enabled Eircom MDFs have attenuation greater than 62dB and are thus assumed to be longer than 5km. According to Eircom, of these, 55,000 support a broadband service. Eircom stated that these figures were not consistent with the preliminary weighting (0.2%) applied to long lines in large exchanges contained in ComReg Document No. 09/39.

5.59 Eircom stated that the actual experience in the Eircom network today, in exchanges that are already unbundled, and in those sites with more than 1,600 lines, is that over 6% of lines are longer than 5km but these make up over 4% of all broadband or unbundled pairs. Eircom concluded that the weighting, based on reality of the current position in larger sites, is 4%, not 0.2% (as proposed by ComReg). Eircom also stated that the correct proportion of unbundled lines longer than 5km is found to be 0.85%.

5.60 BT in its response to Question 12 stated that to recover the investment and running costs, OAOs need to offer a package of services to customers to achieve a sufficient return on investment. To limit the offering to voice services would not provide a sufficient return and other market characteristics, such as churn, show that bundles are subject to less churn than single services. In relation to the point on whether the 5km represents the maximum line length BT agreed that this was the point where the quality was likely to degrade rapidly for the lines in Ireland and commercial offerings become difficult. BT however believed that given technology keeps advancing an improved solution could appear at some time in the future to increase the workable distance.

5.61 In relation to Question 13, Magnet, Smart, BT and Vodafone agreed that ComReg's proposal of including an element of costs associated with lines in excess of 5km was conservative.

5.62 Eircom responded that from a technical perspective the way in which the costs associated with lines longer than 5km were to be excluded was broadly consistent with LRAIC principles, but disagreed with the justification for including these costs. Eircom stated that there was no basis for systematically excluding the costs of lines longer than 5km from those to be recovered from LLU rental revenues.

5.63 Magnet and Smart both stated that they did not understand why ComReg still insisted on including costs for lines greater than 5km as this was rewarding an inefficient operator and penalising the customer and that a more aggressive approach was required.

5.64 Vodafone stated that it entirely disagreed with ComReg's application of its concept of a 'conservative' approach to the costs of long lines in its determination of the LLU monthly rental charge. It further stated that as it is neither economically nor technically viable for OAOs to unbundle long lines greater than 5km over which they are not able to provide broadband services there is no basis for any element of the incremental costs of long lines to be included in the calculation of the LLU charge. Vodafone referred to ComReg Document No. 08/56 where Vodafone envisaged from ComReg's preliminary view that long lines would be totally excluded from the calculation of the costs underlying the LLU charge. Vodafone further stated that by including an element of the incremental costs of long lines represents a fundamental reversal of ComReg's original stance. Vodafone therefore requested ComReg to provide justification for a change to its approach.

ComReg's Initial Position following ComReg Document No. 09/39

5.65 Following consideration of operator responses to Question 12 and Question 13 in ComReg Document No. 09/39 and the receipt of further confidential data from Eircom in relation to the breakdown of long lines that can provide current day broadband and ULMP services, ComReg sought further views from industry as discussed below.

ComReg Document No. 09/62: Principles Supporting Conclusions

5.66 In ComReg Document No. 09/62 ComReg described how at the time ComReg Document No. 09/39 was published, the most up to date publicly available information indicated that it would not be feasible to provide current day broadband services on lines in excess of 5km. Accordingly, ComReg decided that it was appropriate to apply a lower weight to the costs associated with unbundling lines in excess of 5km in proposing a LLU price.

5.67 At that time ComReg did not have any direct evidence available to it to estimate the appropriate weighting and therefore, proposed a method that was consistent with the weighting applied to small exchanges, for which evidence was available[46].

5.68 However, Eircom subsequently provided a confidential and detailed breakdown of long lines that can provide broadband and ULMP services, which suggested that a much higher proportion of long lines may be capable of supporting broadband services than had at first been thought and hence, these represent potential targets for OAOs. According to the information supplied by Eircom, the appropriate weight for long lines in the LLU cost allocation would increase.

5.69 ComReg Document No. 09/62 explored the speeds that OAOs considered as a pre-requisite for unbundling. ComReg emphasised that its intention was not to mandate the maximum or minimum speeds that OAOs should be making available to their customers as such matters were beyond the scope of that consultation.

[46] Details of the weights applied are contained in Consultation Document No. 09/39 in steps 2 and 3 of Section 5, paragraphs 5.12 to 5.29.

Further Consultation Question in ComReg Document No. 09/62

Q4 What do you consider to be the appropriate minimum speed that should be available before you unbundle a particular line? In addition, please provide your definition of a broadband line over the fixed network.

Views of Respondents to ComReg Document No. 09/62

5.70 BT considered that 1M/bps to be the minimum speed that should be available on a line due to the late introduction of mass market broadband in Ireland. BT expects this definition to evolve to 2M/bps. However, BT highlighted that the possibility of supplying sub 1M/bps should not be prevented.

5.71 Eircom's definition of a broadband line was 144kbps downstream and 64kbps upstream. However, Eircom stated that it did not understand the purpose of the question in the context of LLU pricing. It pointed out that the LLU model is not that of a broadband network designed to serve every building in the State with copper pairs from 1,172 nodes. These nodes are located to serve the majority of the population with PSTN services not broadband. In practice, Eircom provides many customers with PSTN services using non-copper technologies where they cannot be reached economically from the copper network nodes, so the model of a ubiquitous copper network does not provide an appropriate basis for determining the cost of PSTN services in Ireland.

5.72 Magnet considered the minimum speed that should be available on a line is 3.5M/bps. Magnet also stated that it aspires to provide 10Mbps broadband to all customers. If a customer is unable to avail of at least 3.5M/bps then it will discount its price to reflect the lower service being provided.

5.73 Vodafone stated that a minimum fixed broadband service with peak download speeds of between 2 to 3Mbps should be available on a line. According to Vodafone, the appropriate minimum speed required by OAOs is driven by retail customer requirements (which evolve over time) rather than a minimum technical definition. Therefore, ComReg's conclusion should be forward looking.

5.74 Vodafone noted that Eircom provided a breakdown of the capability of long lines to support broadband services, on a confidential basis, to ComReg. It believed that ComReg should not have accepted this information on a confidential basis as it relates to the technical characteristics of the LLU product offered by Eircom and should be available to OAOs as part of Eircom's non-discrimination and transparency obligations. Vodafone stated that it cannot adequately assess the significant increase in the weighting factor to 4 times the previous weight for long lines in the absence of Eircom's confidential submission.

5.75 Vodafone believed that there is an inconsistency of approach for the treatment of long lines and the working lines threshold. Given the smaller exchanges will have proportionally more long lines ComReg should only take the percentage of long lines in the exchanges above the working line threshold and not across the entire network. If the weighting is changed to include only long lines that support lower speed broadband, then it is incorrect to only consider the technical capability for the weighting. Vodafone is concerned that the technical cut-off would lead to OAOs paying for lines which cannot be economically unbundled.

5.76 Ireland Offline stated that a minimum speed of 512k per line in the top 100 exchanges is required with a reasonable SLA to ensure that the speed is not allowed degrade over time from lack of maintenance. In the remaining circa 1,100 exchanges a minimum of 256k would be appropriate due to the longer line length.

ComReg's Conclusions

5.77 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

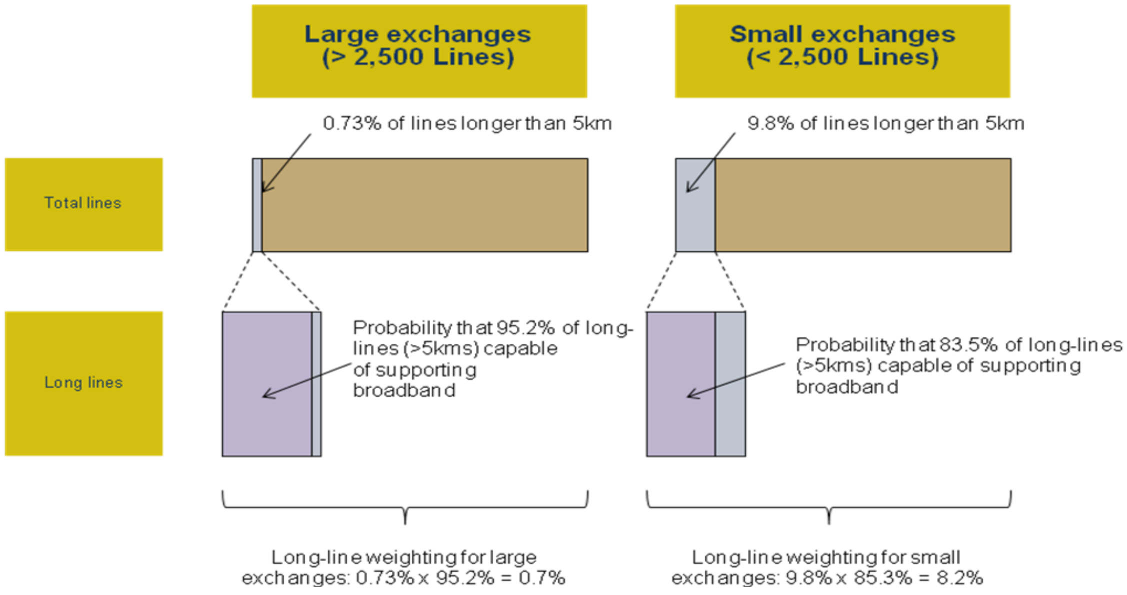
5.78 ComReg considers the ability of OAOs to provide current day broadband as an essential pre-requisite for their ability to unbundle lines. In addition, ComReg is of the view that it is less feasible to provide current day broadband services on lines in excess of 5km. However, given that ComReg is setting a single national LLU monthly rental charge it is important to ensure that all lines contribute to the charge in a weighted and proportionate manner. In ComReg Document No. 09/39, ComReg had initially used a number of assumptions to calculate the appropriate long-line proportions, as suitable data was not available.

5.79 Following on from ComReg Document No. 09/39, ComReg subsequently obtained confidential data from Eircom in relation to the proportion of long lines in large and small exchanges and also the proportion of those longs lines capable of supporting current day broadband. ComReg assessed the data provided which indicated that a higher proportion of long lines may be capable of supporting broadband services (and hence, represented potential targets for OAOs) than had initially been accounted for in the model. This data made it possible to calculate the approximate long-line weightings directly. The details are discussed below.

5.80 The majority of OAOs believed that the cost of long lines should not be part of the LLU charge. However, as set out by ComReg from the outset in its consultation documents, it is setting a single, national LLU monthly rental charge that provides the appropriate incentives for investment and competition in the market. Having carefully considered all the responses in relation to this matter, ComReg concludes that this is best achieved by including an element of costs associated with all the lines on the network. This ensures that <u>all</u> lines are contributing to the maximum LLU monthly rental charge in a weighted and proportionate manner through the use of the 2,500 line threshold, as well as an extra and proportionate weighting applied to all lines i.e. lines less than and greater than 5km. ComReg believes that the most appropriate way to achieve this is to apply a lower weight to the costs associated with longer lines in its determination of the LLU price.

5.81 The steps outlined below set out the basis for calculating the portion of costs associated with long lines in large and small exchanges which are capable of supporting current day broadband and which are reflected in the overall LLU price.

- Step 1: Calculate the proportion of lines in large and small exchanges that exceed 5km.
- Step 2: Calculate the probability of lines in excess of 5km capable of supporting current day broadband services.
- Step 3: The weights for long lines in large and small exchanges calculated as the product of step 1 and 2.



5.82 Further to the assessment of long lines capable of supporting current-day broadband in large and small exchanges, an additional assessment is performed to take account of the probability that short lines in large and small exchanges are more likely to be unbundled to support current day broadband services. A similar calculation to the above is carried out for the short lines in large and small exchanges.

5.83 Having done this, the costs[47] relating to long and short lines in large and small exchanges are taken together to get an approximate weighted average cost of LLU lines:

- In **large exchanges**[48] (in excess of 2,500 working lines) there are approximately 0.73% of lines longer than 5km. According to Eircom's data, the probability for a line longer than 5km being able to support current day broadband is approximately 95.2% in current LLU exchanges (which should be representative of exchanges larger than 2,500 working lines). Therefore, the costs relating to approximately 0.70% (0.73% * 95.2%) of long lines in large exchanges are reflected in the current LLU price. In addition, the current LLU price reflects the average cost of short lines multiplied by a weighting factor, which takes account of the probability that short lines, in large exchanges, are more likely to be unbundled (to support broadband) (based on (1-0.70%)* short line costs). When the costs relating to long lines and short lines in large exchanges are added together this result in a weighted average cost of LLU lines in large exchanges.

*Large exchange costs = 0.70% * long line costs + (1-0.70%)* short line costs*

- In **small exchanges**[49] (less than 2,500 working lines) there are approximately 9.8% of lines longer than 5km. According to Eircom's data, the probability

[47] When referring to the costs of long and short lines in large and small exchanges this means the average total cost per line.

[48] The data regarding lines in large exchanges is based on 2009 information.

[49] The data regarding lines in small exchanges is based on 2009 information.

for a line longer than 5km being able to support current day broadband is approximately 83.5% in all exchanges (which should be representative of exchanges with less than 2,500 lines). Therefore, the cost relating to approximately 8.2% (9.8% * 83.5%) of long lines in small exchanges are reflected in the current LLU price. In addition, the current LLU price reflects the average cost of short lines, multiplied by a weighting factor which takes account of the probability that short lines, in small exchanges, are more likely to be unbundled (to support broadband) (based on (1-8.2%)*short line costs). When the costs relating to long lines and short lines in small exchanges are added together, this result in a weighted average cost of LLU lines in small exchanges.

*Small exchange costs= 8.2% * long line costs + (1-8.2%) * short line costs*

5.84 Vodafone raised concerns about the increase in the weighting factor to 4 times the previous weight for long lines. The details discussed above, based on data provided by Eircom, highlight that the difference is based on actual information provided by Eircom in relation to the portions of lines longer than 5km in large and small exchanges which are capable of supporting current day broadband services. This data was assessed by ComReg and was considered appropriate for determining the approximate costs of long lines.

5.85 Vodafone also raised the point that the 'confidential data' provided by Eircom to ComReg in relation to the capability of long lines to support broadband services should not have been accepted by ComReg on a confidential basis as it relates to the technical characteristics of the LLU product offered by Eircom and should be available to OAOs as part of Eircom's non-discrimination and transparency obligations. However, ComReg cannot release any information that is submitted to it on a confidential basis. In addition, ComReg has summarised the data incorporated into the LLU price regarding long lines in large and small exchanges capable of supporting current day broadband. This analysis should allow industry to gain an understanding of the basis used to determine the costs of long lines relevant to the maximum LLU monthly rental charge.

5.86 In operator responses to ComReg Document No. 09/62 each operator suggested a different minimum speed for broadband purposes. The speeds suggested by operators ranged from 64kbps to 3.5Mbps. While ComReg explored the speeds that OAOs considered as a pre-requisite for unbundling it is not ComReg's intention to mandate the maximum or minimum speeds that OAOs should be making available to their customers. Based on the current speeds available in the market today it appears that a minimum speed of 1Mbp is considered reasonable but ComReg believe that higher speeds may become the norm during the price control period. ComReg also acknowledges that some operators consider speeds below 1Mbp. ComReg is of the view that current day broadband speeds are the norm and these may evolve to higher speeds over the period of the price control.

5.87 ComReg conclude that it is appropriate to apply a lower weight to the costs associated with longer lines in its determination of the LLU price. This ensures that all lines are contributing to the maximum LLU monthly rental charge in a weighted and proportionate manner through the use of the 2,500 line threshold, as well as an extra and proportionate weighting applied to all lines.

Conclusion in relation to Long Lines:

In determining the maximum LLU monthly rental charge, ComReg has taken into account the fact that long lines are less capable of and less likely to support current day broadband services. The weight applied to long lines (in excess of 5 km) is modified using Eircom's data to calculate the weighted average cost of LLU lines.

Step 3: Calculating the weighted average price

ComReg Document No. 09/39: Principles Supporting Conclusions

5.88 ComReg, having determined the costs of large and small exchanges (taking into account the low probability of lines in excess of 5km being unbundled) the final step in ComReg's calculation was to determine a single, national, LLU price.

5.89 ComReg noted that all of the exchanges unbundled in recent years had more than approximately 2,600 lines. ComReg had revised the threshold for working lines to 2,500 lines. In order to be conservative, ComReg also proposed to allow for an element of costs associated with small exchanges, even though it considered it highly unlikely that a significant number of them could feasibly be unbundled within the proposed price control period.

5.90 ComReg was of the preliminary view that OAOs were less likely to unbundle small exchanges for economic reasons, mainly to do with the number of lines in each exchange.

5.91 ComReg's preliminary view was that it would be reasonable to adopt a weighting the ratio of 95:5 for large and small exchanges, as ComReg believed this provided a reasonable and proportionate balance to the approach being proposed on the costs that should be included within the LLU price being proposed.

5.92 Thus the proposed price would be set on the underlying assumption that as the number of unbundled exchanges changes over time, the proportion of unbundled lines in small exchanges (now set at less than 2,500 working lines) will remain below 5%. More specifically, ComReg proposed to calculate the LLU price based on a weighted average of the costs of lines in large and small exchanges such that:

LLU price = 95% x Cost of lines in large exchanges + 5% x Cost of lines in small exchanges.

5.93 Applying such a weighting to exchanges ensured that a conservative view was maintained in that it ensured that 100% of the lines were contributing to the charge (albeit that they are given different weights in the calculation).

5.94 ComReg was also of the view that this approach can be used to determine the appropriate weight to apply to the costs associated with lines in excess of 5km.

Consultation Question in ComReg Document No. 09/39

Q.14 Do you agree with ComReg's proposed weightings, as set out above, used in relation to the cost associated with long lines and small exchanges? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/39

5.95 BT agreed with ComReg's proposed weightings in relation to long lines.

5.96 Magnet and Smart agreed with the proposed methodology but disagreed with the weighting ratio proposed.

5.97 Vodafone agreed only in part with the proposed weightings on long lines.

5.98 Eircom disagreed with the proposed weighting ratios.

5.99 Magnet and Smart while supporting the logic and methodology did not support the weighting ratios applied. Magnet and Smart both highlighted factors regarding the position of LLU in Ireland today. These factors included the point that Ireland are many years behind France and that an incentive to rapidly drive LLU is necessary. In addition, they pointed to the fact that there are less than 60 unbundled exchanges in Ireland despite LLU being available for many years. Both of these operators also pointed out that the current economic conditions will determine that LLU, rightly or wrongly, will only happen in urban areas/large exchanges for the immediate term. They also stated the line price will drive LLU and attract new market entrants and that LLU has failed in Ireland for ten years and rapid remedial action is required to drive demand and gain traction on the ladder of investment towards NGN. Both operators believed that the most important thing for now is to gain investment in LLU and in the next pricing review ComReg should then look to include the proposed weightings if LLU has been deployed in urban areas, as would be expected and expansion to smaller MDFs is then more likely. Both of these operators also suggest a glide path approach. Both operators also stated that they are mindful that some very limited rural exchanges may be unbundled as a result of grant aiding and that some longer lines that exist within urban exchanges. With that in mind both of these operators recommended a weighting ratio of 99:1 to be used at a maximum for the period of this review.

5.100 Vodafone considered that it was appropriate and reasonable that 95% of the cost of lines in large exchanges and 5% of the cost of lines in small exchanges are included in the calculation of the regulated LLU monthly rental charge. Vodafone added that the 95:5 is a good approximation of the likely distribution of unbundled lines between large and small exchanges respectively and has the benefit that the costs of all exchanges will be incorporated to some extent in the determination of the final regulated LLU monthly rental charge. Vodafone however considered that the proposed cut-off point of 1,600 working lines to distinguish between large and small exchanges is inappropriately low and has not been effectively justified. Vodafone added that the LLU charge should be based primarily on evidence of costs that OAOs actually face in Ireland in unbundling exchanges. In addition, Vodafone contended that the appropriate threshold of 2,500 working lines, consistent with that observed in the UK and also in line with the fact that the smallest exchange unbundled in Ireland to date has in excess of 2,700 working lines. Vodafone also strongly disagreed with ComReg's current proposal to attach a positive 5% weight to the costs of long lines in excess of 5km in the calculation of the regulated LLU monthly rental charge. Vodafone believed that as it is neither economically nor technically viable for OAOs to unbundle long lines over which they are not able to provide broadband services, there is no basis whatever for any element of the increment costs of long lines to be included in the determination of the LLU monthly charge. Vodafone therefore requested ComReg to revisit its current methodology and assign a zero weighting to the costs of long lines in assessing the LLU monthly rental charge.

5.101 Eircom disagreed with the proposed weighting ratio on the basis that it believed that the weighting calculation was entirely arbitrary. Eircom believed that the first arbitrary selection was the cut-off at 1,600 lines as the boundary between large and small exchanges and the second arbitrary selection was the 95% weighting for the average cost of unbundling large exchanges and the associated 5% weighting for the cost of small exchanges. Eircom further added that ComReg should be clear what probability is being considered and it believes that ComReg is not alleging that every exchange with more than 1,600 lines has a 95% probability of being unbundled. Eircom believed that if this was the meaning then there would be no need for the probabilities to add to 100%. Eircom believed that there could be three groups of exchange considered; exchanges that are already unbundled would have 100% probability of being unbundled, other large sites could have a 70% probability of being unbundled and small sites could have a 10% probability. Eircom also stated in its response that the application of 95% for unbundling of large exchanges seems to have no basis other than having been used by Arcep in France but no evidence is presented as to why this probability is appropriate.

ComReg's Conclusions

5.102 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

5.103 The final step is to conclude on the weighted average of the cost of large and small exchanges while taking into account the long lines.

5.104 As discussed above, the starting point is the ComReg view that 2,500 working lines is the appropriate threshold point for the likely unbundling of exchanges during the price control period. This level is more closely aligned with the actual and potential unbundling behaviour of OAOs (based on data provided to ComReg). However, it should be noted that the majority of exchanges currently unbundled by OAOs to date and those exchanges that are planned to be unbundled by OAOs in the future are well in excess of 2,500 lines.

5.105 Accordingly, in light of the highly conservative way in which the distinction between large and small exchanges is drawn – set at 2,500 lines as a threshold - ComReg believes that in the unlikely event that some exchanges below the 2,500 working line threshold are unbundled during the price control period that a proportionate amount of these costs are reflected in the LLU price. This approach allows Eircom the benefit of the doubt that if some exchanges, albeit highly unlikely, are unbundled during the price control period that the costs are reflected in the overall LLU price. In this regard, ComReg is of the view that a 5% weighting is appropriate for those small exchanges. That is to say that, by the end of the price control, no more than 5% of the total number of unbundled lines would be located in small exchanges. Again, this approach is highly conservative given that in fact, none of the small exchanges (below 2,500 lines) in Ireland are currently unbundled. OAOs also provided confidential information to ComReg which indicates that the vast majority of OAOs current unbundling plans will be in exchanges with more than 2,500 lines.

5.106 ComReg believes that by applying such a weighting to exchanges ensures that 100% of the lines are contributing to the charge (albeit that they are given different weights in the calculation).

5.107 Some of the points raised by operators in their response to the proposed weighting factor have already been addressed above in ComReg's conclusions on the revised threshold of 2,500 lines and also in the conclusions in relation to long lines.

5.108 Magnet and Smart raised the point that a glide path approach should be used in determining the monthly LLU price. However, ComReg believe that the minimum threshold of 2,500, which is based on currently unbundling behaviour, should encourage investment and much needed competition in the market during the price control period. ComReg is committed to monitoring the levels of unbundling at exchanges during the price control period. If reliable data becomes available which shows that the assumption in relation to the working line threshold of 2,500 lines is inconsistent with actual unbundling in a material number of exchanges, ComReg reserves the right to reassess that assumption.

5.109 Finally, in determining the revised maximum LLU monthly rental charge ComReg has set out below the two stage approach adopted. Firstly, ComReg assessed the confidential information obtained from Eircom in relation to long lines which was subsequently adopted within the model. A summary of the costs associated with large and small exchanges and the proportion of long lines in relation to each type of exchanges are set out under Step 2 above. As described above, the first step in the process was to calculate appropriate weights for long and short lines in large and small exchanges. This was calculated by multiplying the approximate proportion of long lines in each (0.73% and 9.8%) by the approximate proportion of lines in those exchanges considered capable of supporting current day broadband services (95.2% and 83.5% respectively). The approximate weighted average costs of both type of exchanges is then calculated as follows:

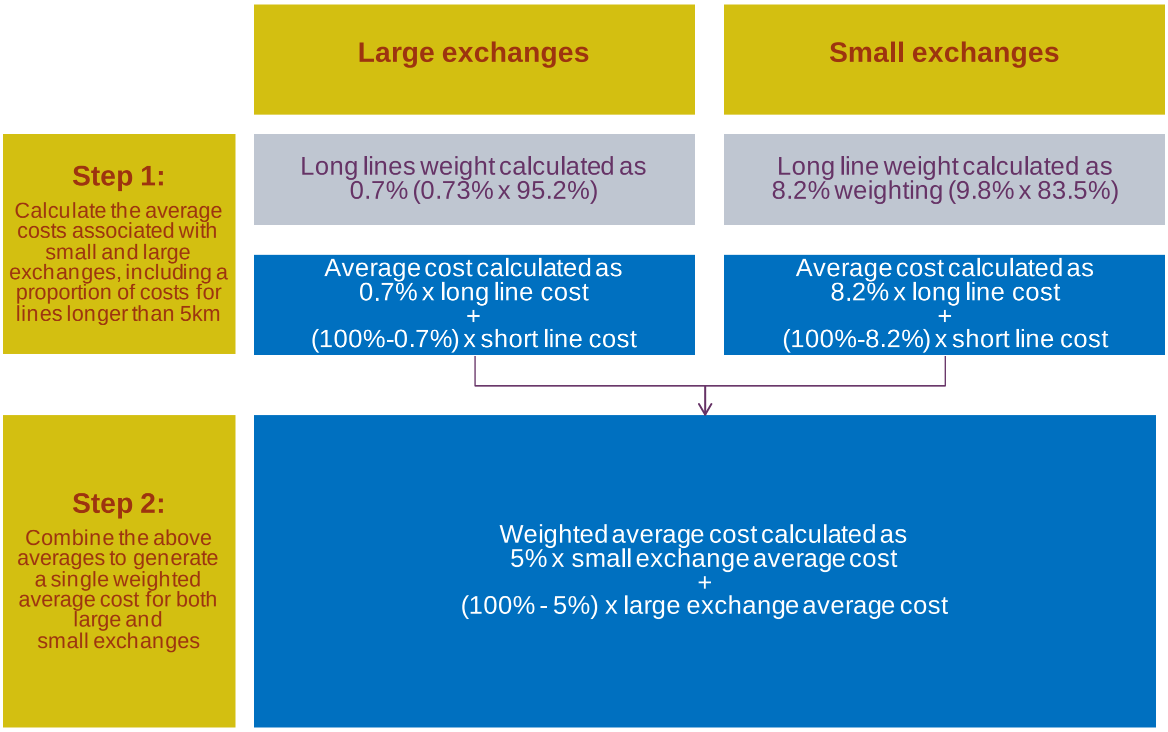
Average large exchange line cost =
0.70% x long-line cost + (1 - 0.70%) x short-line cost

Average small exchange line cost =
8.2% x long-line cost + (1 – 8.2%) x short-line cost

5.110 The second stage of the calculation produces a weighted average cost based on the 95:5 figure described previously. Thus:

Average exchange cost =

95% x Average large exchange line cost + 5% x Average small exchange line cost



5.111 ComReg will monitor the 95:5 weighting during the price control period. If reliable data becomes available which shows that a significant amount of lines are unbundled in small exchanges during the price control period, ComReg reserves the right to reassess the weighting that is currently applied.

Conclusion in relation to the Weighting Factor:

The weighting factor applied to determine the maximum LLU monthly rental charge is 95:5 (i.e. 95% applied to the cost of lines in large exchanges and 5% applied to the cost of the lines in small exchanges).

Determination of Maximum LLU Monthly Rental Charge per Line

ComReg Document No. 09/39: Principles Supporting Conclusions

5.112 In ComReg Document No. 09/39 ComReg discussed the proposed options in relation to the monthly rental charge for LLU. The various charges proposed reflected the parameters discussed in **Section 4** and also the factors discussed in this section, including loop length, the percentage of lines likely to be unbundled and the percentage of exchanges likely to be unbundled. Four options were consulted upon. The first option considered 100% of working lines. The second option considered working lines above a specific threshold with a probability for LLU unbundling applied (95:5). The third option excluded the lines in excess of 5km with the long line probability weighting. The fourth and final option based the proposed charge on working lines above a specific threshold, excluded lines in excess of 5km with the relevant probability weighting applied. In ComReg Document No. 09/39, ComReg proposed that the fourth option was the most appropriate, given the reasons discussed above.

Consultation Question in ComReg Document No. 09/39

Q.15. Do you agree that the charge at option 4 is the most appropriate charge for setting the LLU monthly rental charge going forward? Please state reasons for your response.

Views of Respondents to ComReg Document No. 09/39

5.113 Magnet and Smart believed that option 4 was the most appropriate option but not the most appropriate charge.

5.114 BT believed that option 4 was the appropriate methodology for setting the LLU monthly rental charge but that the proposed value was far too high.

5.115 Vodafone disagreed with option 4 as it believed that the charge was based on incorrect assumptions.

5.116 Eircom disagreed with option 4 as it believed that the move from option 1 to option 4 was based on arbitrary criteria.

5.117 Magnet and Smart agreed with the mechanism and logic but disagreed with the calculated price due to the weighting factor and the exchange size and exclusions. Both of these operators believed that if the weighting factor of 99:1 is adopted, the smaller exchanges are excluded, Eircom's revised cost base is taken into account, the likelihood of reduced labour and contractor rates, deflation and copper price trends are followed that a rental charge of €7 (Magnet proposed price) and €10 (Smart proposed price) could be achieved. Magnet also stated that as the largest LLU provider in Ireland it would not unbundle any more exchanges at the proposed price as it is still an unattractive investment.

5.118 BT believed that the price was too high for a number of reasons as follows:

- BT believed that the charge needs to be qualified to highlight that it does not include maintenance costs hence in reality only a part charge. Based on a 12.5% LFI and given the current fault clearance charge of €117 BT maintained that the headline price is more realistically around €13.26.
- BT stated that other countries appear to be able to hit significantly lower prices of around €8.29 per month for LLU line rental including repair charges. It further added that Ireland is "*out of kilter*" with Europe.
- BT believed that the proposed price minus the maintenance charge is of little value and will not address competition issues in this market. BT believed that the cost savings announced by Eircom should be factored into the price. Assuming that these are in the order of 25% given headcount reductions, closing costly buildings, BT suggested that the price for LLU line rental should be at approximately €9.95 per month including repair.
- BT stated that for LLU Eircom will recover its costs immediately as the network is in place and supply of LLU services are already available.

- BT pointed out that a common reason put forward by Eircom for higher rental prices is the high level of standalone houses in Ireland. However, BT believe that the boom of the last fifteen years has changed this situation as the majority of new housing is in the form of estates rather than in isolated houses and most people in Ireland live in the cities or housing developments rather than in isolated houses. BT believe that Eircom's inefficiency and costing approach is the reason for leading to high costs rather than the costs of serving isolated houses.
- BT also stated that while Eircom continue to support dual systems for its own downstream provider and separately for the OAOs they are making the conscious decision to be inefficient. BT believe that ComReg should only allow Eircom to recover such costs it would reasonably require to run single provision and assurance platforms that would offer equivalence of input to all downstream providers including its own downstream provider. BT further added that Eircom had many years to offer the same to all and have not taken this opportunity but prefer to act in a discriminatory manner. BT believe that discrimination is brought out very clearly as year on year LLU line share prices have increased, yet Eircom's own bitstream service that uses the same input as line share LLU has constantly decreased in price.

5.119 Vodafone reiterated its points in relation to previous questions. The main reason for its disagreement with the proposed price at option 4 was its view that the cut-off point for the purposes of defining large versus small exchanges was excessively low and included an element of the incremental cost of long lines in the calculation of the LLU monthly rental charge. Vodafone further added that it believed that all of the other charges proposed by ComReg in options 1 to 3 are even more seriously flawed than option 4 and less reflective of the underlying efficient costs of the provision of LLU than the approach proposed by ComReg at option 4. Vodafone believed that the best option for setting of the LLU charge had not been explicitly set out by ComReg in the consultation. Vodafone urged ComReg to revisit its approach and adopt their proposals in order to determine a regulated LLU monthly rental charge that most accurately reflects the underlying efficient costs of the provision of LLU to OAOs.

5.120 Eircom disagreed with option 4 on the basis that it believed that the move from option 1 to option 4 was based on entirely arbitrary criteria. Eircom further stated that ComReg should set the charge based on the weighted average cost of all loops currently providing service in Ireland. This is calculated at €16.52 per month as Option 1. Eircom also suggested that if ComReg wished to send a price signal to OAOs that there are lower cost loops available for unbundling in urban areas then more than one price should be offered.

ComReg's Conclusions

5.121 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

5.122 Finally, this section sets out ComReg's final determination of the maximum LLU monthly rental charge based on its preferred pricing methodology as discussed in Step 1 to Step 3 above. ComReg believes that the maximum LLU monthly rental charge of €12.41 reflects the likely portion of lines in exchanges that OAOs are likely to unbundle during the price control period, while applying an appropriate and proportionate weighting for the cost of large and small exchanges as well as a weighting to all lines less than and greater than 5km.

5.123 In ComReg Consultation Document No. 09/39, the proposed charge set out for LLU was a maximum of €12.18. However, following the consultation process a number of minor adjustments were made to the final BU-LRAIC model which resulted in a revised maximum charge for LLU of €12.41 per line per month.

5.124 The majority of the points raised by operators in response to the question on the LLU monthly rental charge were addressed by ComReg in its conclusions on earlier questions on the working line threshold, long lines and the weighting factor.

5.125 In its response, Vodafone urged ComReg to revisit its approach with specific emphasis on the cut-off point for working lines. However, following consideration of operator responses to ComReg Document No. 09/39 ComReg re-assessed its views on the most appropriate cut-off point and has revised the threshold to a minimum of 2,500 working lines. ComReg's conclusions in relation to the threshold are discussed at Step 1 above.

5.126 BT, in its response to consultation, raised the following main points:

- The LLU charge does not include fault clearance costs
- The revised LLU charge in Ireland will remain out of kilter with Europe
- The LLU charge should reflect cost reductions within Eircom
- Eircom's inefficiency and costing approach is leading to higher costs rather than the cost of isolated houses.

5.127 ComReg believes that a separate fault clearance charge acts as an incentive to OAOs when reporting faults, to ensure any possible checks have been carried out on their network prior to reporting them to Eircom. It is clear (and has been for many years now) that the LLU monthly rental charge is separate from the fault repair charge. This is denoted by three separate charges in the current ARO price list; one charge for the LLU monthly rental, another charge for fault clearance excluding line testing and a charge for fault clearance including line testing. As already discussed above, ComReg has recognised in the modelling process that there is a separate fault clearance charge and this has been reflected in determining the maximum charges.

5.128 In relation to the point made by BT regarding the fact that the charge is "*out of kilter*" with Europe, it is important to note that population densities and dispersal are somewhat different to those of other EU countries. As noted above, Ireland has a relatively low population density and sits in the lower quartile when compared with other countries. A high proportion (approximately 40%) of our population lives in rural areas[50]. Rural dwellers tend to live in a relatively dispersed manner and the incidence of one-off dwellings outside villages and towns appears to be high in comparison with other countries. Therefore, this impacts on the cost of providing services to the more rural parts of the country.

5.129 BT also raised the point that Eircom's recent announcement relating to cost savings

[50] Source: European Commission 2005 "Digital Divide Forum Report: Broadband Access and Public Support in under-served areas"

should be factored into the model. However, all relevant cost reductions and efficiencies have been considered by ComReg in the modelling exercise and applied to input costs within the model, where appropriate. BT also stated that while Eircom continues to support dual systems for its own downstream provider, and separately for the OAOs, they are making the conscious decision to be inefficient. However, the maximum wholesale LLU monthly rental charge determined by ComReg is based on that of an efficient operator and therefore, the issues of inefficiency due to dual systems is not an issue in this regard.

5.130 ComReg concludes that based on information available at this time the revised maximum LLU monthly rental charge is consistent with the cost orientation obligation imposed on Eircom. In addition, the maximum LLU charge ensures that ComReg is compliant with its own obligations, when setting prices. In line with Regulation 14 of the Access Regulations, the revised maximum LLU monthly rental charge ensures that the pricing methodology will promote efficiency and sustainable competition and will maximise consumer benefits as well as allow for a reasonable rate of return.

5.131 The revised maximum LLU monthly rental charge will give certainty to the marketplace on the level of the wholesale LLU monthly rental charge during the price control period. The LLU price reflects the portion of lines in exchanges that OAOs are likely to unbundle up to the end of 2012. It also applies an appropriate and proportionate weighting for the cost of large and small exchanges as well as a weighting to all lines less than and greater than 5km. ComReg has derived a maximum LLU monthly rental charge not exceeding €12.41 which ComReg believes will become a key platform for effective competition. Effective competition between telecom operators will benefit consumers by potentially reducing prices and increasing the availability and choice of services.

5.132 The maximum charges determined by ComReg in this decision do not prevent Eircom from charging lower prices for LLU monthly rental when appropriate, provided that any lower charges are subject to prior review and approval by ComReg and also that Eircom is in compliance with its regulatory obligations and other laws. Eircom has access to the entire cost model (including costing data) and the associated assumptions used in the modelling process in determining the current maximum charges. In addition, during the price control period, Eircom should be aware of the actual level of unbundling of operators at large and small exchanges as well as the actual length of lines being unbundled by operators at those exchanges. Depending on the actual level of unbundling, Eircom may have an opportunity to charge LLU monthly rental prices below the maximum charges set by ComReg which would still allow for the full recovery of the efficient costs of providing LLU/SLU.

Conclusion in relation to the Maximum LLU Monthly Rental Charge:

Eircom’s monthly LLU rental charge shall not exceed €12.41.

Determination of the Maximum SLU Monthly Rental Charge per Line

ComReg Document No. 09/39: Principles Supporting Conclusions

5.133 As discussed in ComReg Document No. 09/39, following a report conducted by Analysys Consulting in 2008, it was concluded that only street cabinets with a minimum of 300 lines would be economically viable for SLU in Dublin. ComReg had also considered that the investment required (other than the regulated monthly rental charge) by OAOs in order to avail of SLU would be significant as it was not possible for an OAO to co-locate in Eircom's cabinets and OAOs therefore must build their own cabinets. This represents a significant upfront investment.

5.134 ComReg was of the preliminary view that SLU was unlikely to happen outside the cable footprint or the major urban areas. ComReg was of the view that these major urban areas are Dublin, Cork, Galway, Limerick and Waterford.

5.135 Given the current economic downturn and lack of availability of capital for investment, ComReg was of the preliminary view that it was unlikely that OAOs would invest in cabinets beyond the major urban areas or cable footprint in the proposed price control period.

5.136 ComReg discussed the two options regarding the proposed charges for SLU. One option considered was based on the cost of 100% of cabinets. The second option considered reflected the costing parameters discussed in **Section 4** and also consideration for the fact that only street cabinets with a minimum of 300 lines would be economically viable for SLU. ComReg was of the preliminary view that the second option was the most appropriate option, given that it reflected the fact that only street cabinets with a minimum of 300 lines would be economically viable for SLU.

Consultation Question in ComReg Document No. 09/39

Q.16 Do you agree that the charge at option 2 results in the most appropriate charge for setting the SLU monthly rental charge going forward? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/39

5.137 BT and Magnet agreed that option 2 resulted in the most appropriate charge while Smart agreed with the methodology but believed that the charge was too high.

5.138 Vodafone and Eircom disagreed with the charge at option 2.

5.139 BT noted that it does not see SLU being developed other than for very exceptional circumstances due to the very small prospective customer base and the high costs of setting up. Similarly, Smart stated that given the current economic climate any large scale SLU deployment will not take place other than within Eircom and any deployments are likely to be localised and limited.

5.140 Vodafone noted that the SLU charges reflect the costing parameters set out in Section 4 of the document. Vodafone previously set out that it considers different parameters to those proposed by ComReg and these proposals should be implemented in some respects. Vodafone agreed with ComReg's high level conclusion that SLU is highly unlikely to happen outside the major urban areas identified by ComReg within the time period of this review. Vodafone also agreed that only street cabinets with a minimum of 300 lines would be economically viable for the purposes of SLU was also reasonable.

5.141 Eircom disagreed on the basis that if an OAO opts to locate equipment adjacent to Eircom's cabinets to unbundle sub loops they are more likely to achieve significant market share by targeting cabinets not connected to MDFs where OAOs currently unbundle full loops. Eircom further stated that most urban exchanges currently have OAOs collocating to take full unbundled loops and it is unlikely that OAOs in that phase of investment can justify placing equipment close to Eircom cabinets and stranding large elements of the MDF investment. Eircom also believed that outside of the main urban centres many provincial towns actually present as promising candidates for a sub loop investment. In addition, the absence of cable television networks leaves more room for both high speed broadband offerings and Internet Protocol Television ("IPTV") service to gain sustainable levels of penetration. Eircom maintain that many of these towns have Eircom copper distribution networks that are highly 'cabinetised' and many are also the sites for government Metropolitan Area Networks ("MANs") that can be used to provide fibre backhaul from the cabinet to the OAO head end with less investment than required in urban areas. Eircom therefore believed that in such areas characterised by potentially higher market share, more revenue streams, and lower levels of investment per cabinet, the OAO may well find that the economics for SLU investments look favourable for cabinets with less than 300 lines.

ComReg's Conclusions

5.142 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

5.143 ComReg is of the view that SLU is unlikely to occur outside of the major urban areas. This view was supported by the majority of the operators in their response to consultation.

5.144 In its response, Eircom raised the point that it believed that provincial towns actually present as promising candidates for SLU investment. However, ComReg disagrees on the basis that its view is that SLU will not occur outside of the cable footprint or the major urban areas such as Dublin, Cork, Galway, Limerick and Waterford during the price control period. This is due to the fact that outside of the cable footprint, LLU can be sufficient for OAOs to provide competitive products. ComReg has not as part of this review considered the costs of SLU in provincial towns as it does not believe that SLU investment will occur in these areas for the foreseeable future. This view is also supported by Analysys Consulting in its report prepared for ComReg in 2008. Analysys Consulting believed that SLU would not occur outside of Dublin and that cabinets with less than 300 lines would not be economically viable for unbundling. ComReg is using the 300 line threshold in cabinets for deriving the SLU maximum monthly rental charge and also conservatively concluding that SLU is unlikely to happen outside the cable footprint or the major urban areas (Dublin, Cork, Galway, Limerick and Waterford) during the price control period.

5.145 ComReg concludes that SLU is unlikely to happen outside the cable footprint or the major urban areas (Dublin, Cork, Galway, Limerick and Waterford). ComReg concludes that only street cabinets with a minimum of 300 lines would be economically viable for SLU in Dublin. ComReg's assumptions are based on a report produced (for ComReg) by Analysys Consulting in 2008.

5.146 ComReg has derived an SLU monthly rental charge not to exceed €10.53. In ComReg Consultation Document No. 09/39, the proposed charge for SLU was a maximum of €9.79. However, following the consultation process a number of minor adjustments were made to the final BU-LRAIC model which resulted in a revised maximum charge for SLU of €10.53 per line per month.

5.147 The maximum charges determined by ComReg in this decision do not prevent Eircom from charging lower prices for SLU monthly rental when appropriate, provided that any lower charges are subject to prior review and approval by ComReg and also provided that Eircom is in compliance with its regulatory obligations and other laws. Eircom has access to the entire cost model (including costing data) and the associated assumptions used in the modelling process in determining the current maximum charges. In addition, during the price control period, Eircom should be aware of the actual level of unbundling of operators at cabinets (or exchanges). Depending on the actual level of unbundling, Eircom may have an opportunity to charge a lower price for SLU monthly rental below the maximum charges set by ComReg which would still allow for the full recovery of the efficient costs of providing LLU/SLU.

5.148 ComReg will monitor its assumption regarding the 300 line threshold for unbundling at street cabinets in urban areas during the price control period. If reliable evidence suggests that ComReg's assumption in relation to the line threshold of 300 is materially inconsistent with actual unbundling in a material number of cabinets during the price control period, then ComReg reserves the right to reassess its initial assumption.

Conclusions in relation to the SLU Working Line Threshold and the Maximum SLU Monthly Rental Charge:

1. The working line threshold for cabinets shall be a minimum of 300 lines in determining the maximum SLU monthly rental charge, during the price control period.
2. The SLU monthly rental charge shall not exceed €10.53.

Price Control Period

ComReg Document No. 09/39: Principles Supporting Conclusions

5.149 Further to the responses to ComReg Document No. 08/56 in relation to the period of the price control, ComReg was of the preliminary view that the LLU and SLU charge should be set for a period of three years from the effective date of any final decision with a review in year two. ComReg was of the preliminary view that the proposed price control period of three years would allow for the necessary development of the LLU market. During that time, OAOs would have an opportunity to invest in their infrastructure, Eircom would have an opportunity to implement efficiencies and alternative platform providers would also be provided with a level of certainty in relation to LLU market development. ComReg did not intend to intervene prior to year two of the three year price control period, unless exceptional circumstances warranted such intervention.

5.150 ComReg further believed that a three year price review was appropriate given the current economic climate and the level of uncertainty regarding future costs and volumes.

5.151 In any event, ComReg stated that it may intervene if exceptional circumstances arise which warrant such intervention. Examples of exceptional circumstances might include (but are not restricted to) significant changes in underlying costs, or price trends, or a significant change in working line volumes. Any exceptional circumstances would be reviewed by ComReg on a case by case basis.

Consultation Question in ComReg Document No. 09/39

Q.17. Do you believe that given the current economic circumstances that a proposed price control period of three years with a review in year 2 is the most prudent option? Please state the reasons for your response.

Views of Respondents to ComReg Document No. 09/39

5.152 BT, Magnet, Smart and Vodafone agreed with the price control period of three years with a review in year two.

5.153 Eircom had two major concerns with the proposal for reviewing the model.

5.154 BT stated that the previous price control period was far too long and allowed LLU pricing to become detached from reality and unreasonably kept LLU pricing high which in turn has directly led to the poor take up in Ireland. BT agreed that three years was an appropriate length of time of the price control period. It further stated that the safeguard of setting a time limit of two years for a review is prudent as the previous price control has proven to be too long.

5.155 Smart stated that the global economic conditions are changing almost by the week and a review period of three years is appropriate to 'take stock' of what has happened in relation to LLU and also what is happening on an economic global scale.

5.156 Eircom in its response discussed two majors concerns with ComReg's proposal. Firstly, Eircom stated that there is no mechanism for dealing with a sustained period of deflation or high inflation; and secondly there is no provision for the eventuality that ComReg fails to replace this price control at the end of its three year life. Eircom believed that ComReg is proposing to set a price that is constant in nominal terms for three years, that the price is not indexed to general inflation in any way. Eircom further stated that the ComReg model works in nominal terms. Eircom believed that there is no explicit treatment of inflation and the effect of inflation on returns over time is dealt with implicitly through the WACC used to annualise the capital costs. Eircom also believed that given the current economic instability in Ireland, it is entirely possible that there will be a sustained period of high inflation within the price control period. Eircom added that any sustained period of either deflation or high inflation would render ComReg's fixed nominal price both inconsistent with the model and more importantly, with general prices in Ireland. Given the uncertainties regarding inflation during the period of the price control, Eircom believed that it is essential that the final price control contains provisions that allow the price to be rapidly rebased in the event of significant deflation/inflation.

5.157 The second point raised by Eircom related to its concerns regarding the lack of clarity on what happens at the 'end' of the price control period, in the event that ComReg does not have a replacement control in place. Eircom described how the text of the decision instrument states that the price directed shall apply 'at any time thereafter'. Eircom believed that, were the directed price to remain in force after the end of three year period, this would clearly be inconsistent with the recovery of the capital costs that ComReg has modelled. Eircom also discussed that during the course of review of the model that the pre-supposed start date for the price control was 1 July 2009 and the weighted average cost was calculated based from (50%X2009 + 2010 + 2011 + 50%X2012)/3. However, as the date of implementation was more likely to be 1 October 2009, the weightings needed to change. Eircom also suggested that as part of the final direction, ComReg should use the model to calculate the average charge that would apply from July 2012, either on an annually adjusted basis or as a fixed price for a second three year period, on the same basis as it derived the average for the first three years.

5.158 Vodafone agreed with the period of three years, however, it questioned the rationale for a review in year two as it believed that this significantly reduced the intended benefit of regulatory certainty from the selection of a three year control period. It further added that it is vital for the business planning of OAOs that they have the greatest possible visibility of the level of the LLU and SLU access charges over the medium term and Vodafone therefore recommended that ComReg should revise its proposal to exclude the proposed element of a review in year two. Vodafone agreed that ComReg must have discretion to intervene in the setting of the LLU and SLU charges within the three year price control period if exceptional circumstances warrant it. Vodafone stated, based on the examples of the exceptional circumstances given by ComReg in its consultation, that the definition of exceptional circumstances was too broad and would greatly limit regulatory certainty for market participants. Vodafone recommended the following two criteria as follows:

- The changes make a material difference to Eircom's actual cash outflow
- The changes are outside the control of Eircom.

ComReg's Conclusion

5.159 ComReg's conclusions have been arrived at having further considered the views it initially presented during consultation and having carefully taken account of respondents' views to its proposals. In some cases ComReg's conclusions reflect amendments to its initial proposals having taken into account respondents' views.

5.160 ComReg is of the view that a price control period until 30 November 2012 allows for the necessary development of the LLU market while OAOs have an opportunity to implement efficiencies and alternative platform providers are provided with a level of certainty in relation to LLU market development.

5.161 Eircom raised the point that there is no mechanism for dealing with a sustained period of deflation or high inflation, ComReg would point out that the final price set for LLU is an *average* price over the price control period. The final average price does in fact account for projected inflation (or deflation) during the price control period. As already stated, ComReg will review the price if exceptional circumstances arise. ComReg believes that this assurance is sufficient and will ensure that if any exceptional changes occur in the intervening period that these will be fully taken into account by ComReg.

5.162 Eircom raised a second point regarding the fact that there is currently no provision to address the possibility of ComReg not replacing the price control at the end of its three year life. In ComReg Document No. 09/39 ComReg proposed to carry out a review in year two. Following consideration of the point raised by Eircom and the fact that ComReg will review the model in exceptional circumstances, ComReg has decided to defer the review in year two, to six months in advance of expiration of the price control period. Six months in advance of expiration of the price control period ComReg will commence a pricing review to assess whether the current adopted approach in terms of the BU-LRAIC model and the pricing methodologies remains appropriate. In terms of the review, ComReg, Eircom and OAOs shall use reasonable efforts to ensure that the review is completed in a timely and proper manner and if any amendments to the modelling approach, the pricing methodologies and/or the maximum LLU and SLU monthly rental charges are necessary that these are made immediately after the price control period ends. However, should the review not be completed by the end of the price control period, for whatever reason, then the current revised maximum LLU and SLU monthly rental charges set out in this decision shall remain in place until the review is fully complete. In any event, if exceptional circumstances arise, in advance of the scheduled review noted above, ComReg will review them on a case by case basis and carry out a review of the model, with amendments, if necessary.

5.163 Vodafone, in its response to consultation, questioned the rationale for a review in year two as it believed that this significantly reduced the intended benefit of regulatory certainty from the selection of a three year control period. As discussed above ComReg has decided to defer the review in year two and will commence a review no later than six months in advance of expiration of the price control period. With regard to Vodafone's point on the exceptional circumstances, ComReg will assess these on a case by case basis and if Eircom or OAOs bring to ComReg's attention changes which they believe to be exceptional and have a material impact on the charges set then ComReg will assess whether these require intervention in the intervening period, on a case by case basis.

5.164 ComReg concludes that the price control period is from the effective date of this decision until 30 November 2012. No later than 31 May 2012 ComReg will commence a pricing review to assess whether the current adopted approach in terms of the BU-LRAIC model and the pricing methodology remains appropriate. This review will be subject to consultation as appropriate and necessary with Eircom, OAOs and the public. ComReg proposes that it, Eircom and OAOs will use its reasonable endeavours to ensure that the review is completed in a timely and proper manner and if any amendments to the modelling approach, the pricing methodologies and/or the maximum LLU and SLU monthly rental charges are necessary, that these are made immediately upon the expiry of the price control period. This reasonable endeavours obligation will apply to Eircom and all relevant OAOs also. Relevant OAOs are those who have a proper interest in the review and those whose response is considered important or necessary by ComReg for the purposes of completing the review. In the unlikely event that the review is not completed by 30 November 2012, (for whatever reason) the revised maximum LLU and SLU monthly rental charges set out in this decision will remain in place until the review is completed. This is necessary to avoid regulatory uncertainty, and to ensure that a regulated price still applies, in case the review is not completed by 30 November 2012. Finally, ComReg is expressly reserving the right to review (and if necessary amend) the price control, prior to the scheduled review, having regard to any circumstances that it considers exceptional.

Conclusion in relation to the Price Control Period:

The period of the price control is from the effective date of this decision until 30 November 2012. No later than six months (i.e. 31 May 2012) in advance of expiration of the price control period ComReg will commence a pricing review to assess whether the current adopted approach in terms of the BU-LRAIC model and the pricing methodologies remains appropriate. As part of this review ComReg will also assess if any amendments to the modelling approach, the pricing methodologies and/or the maximum LLU and SLU monthly rental charges are necessary. The scheduled review will be subject to consultation as appropriate and necessary with Eircom, OAOs and the public. In terms of the review, ComReg proposes that it, Eircom and OAOs will use reasonable endeavours to ensure that the review is completed in a timely and proper manner and if any amendments are necessary, that these are made immediately upon expiry of the price control period. In the event that it is not completed at the end of the price control period, for whatever reason, then the revised maximum LLU and SLU monthly rental charges in this decision shall remain in place until the review is completed. Finally, ComReg reserves the right to intervene, prior to the scheduled review, should exceptional circumstances arise which warrant this.

6 ComReg's Response to Operator Comments on Draft Decision

6.1 In ComReg Document No. 09/39, ComReg included the draft decision instrument to formalise the proposed revised LLU and SLU monthly rental charges. ComReg invited respondents to comment on the wording of the draft decision instrument from a legal, technical and drafting perspective.

Consultation Questions in ComReg Document No. 09/39

Q.18. Do you believe that the draft direction is clear, precise, and intelligible from a legal, technical and drafting perspective? Please state the reasons for your response.

Q.19. Respondents are invited to comment on the draft direction from a legal, technical and drafting perspective as set out above.

Views of Respondents to ComReg Document No. 09/39

6.2 In relation to Question 18 and Question 19, Magnet, Smart and Vodafone agreed with the proposed draft decision.

6.3 In relation to Question 18, BT considered that the draft direction needed to be redrafted to include all of the operators in the market, and especially to include the largest player in the market, i.e. Eircom retail as a downstream provider. BT believed that without such a modification there will be no transparency of what Eircom are offering itself and that there is potential for Eircom to discriminate against OAOs. In relation to Question 19, BT observed that Eircom offers to itself both LLU and line share services as components for its own downstream products. BT also highlighted that Eircom is regulated by virtue of ComReg Decision No. D08/04 and has an obligation of non-discrimination which provides *that "…Eircom shall apply equivalent conditions in equivalent circumstances to other authorised undertakings providing equivalent services…"* BT further stated that it believes that Eircom is not applying equivalent conditions in equivalent circumstances. In its view Eircom uses the same copper access facility for themselves as for other operators, as observed by customers being able to change from Eircom to an OAO and vice versa. However, BT maintained that the charges and service features available for downstream Eircom services, such as bitstream, suggests Eircom are receiving both different facilities and access charges. BT therefore believed that Eircom must publish an internal reference offer ("IRO") which should be the same as the ARO offered to other providers. BT further added that Eircom must use the same inputs, terms, conditions, service level agreements ("SLAs"), and prices as the rest of industry.

6.4 In its response to Question 18 and Question 19, Eircom stated that it did not consider that the draft was sufficiently clear, precise and intelligible for the following reasons:

- *Legal basis*: Eircom believed that due to the lapse of time since ComReg Decision No. D08/04, that ComReg is not entitled to review the price for LLU without first conducting and concluding a fresh market analysis. Eircom referred to the position adopted by the EC with regard to Ofcom's notification of a proposed change to Wholesale Line Rental ("WLR").

- *Reference to the 'Model'*: Eircom referred to the definition within the draft direction of the 'Model' which stated that '*Model means the costing model, developed by ComReg (in consultation with Eircom) for the purpose of deriving the price of LLU and SLU, which has all necessary legal effect, including but not limited to the purpose of determining cost orientation and Eircom's compliance with its obligation of cost orientation under section 9 of the SMP Decision'.* Eircom believed that the definition was unclear and that reference to the model to specify Eircom's cost orientation obligation in the draft direction was inappropriate, superfluous and a source of confusion. Eircom further added that there are several versions of the model in existence with different price outputs. It also stated that the form of the model and the choice of certain values for the parameters/functionalities, clearly amounts to decisions made by ComReg with regard to the use of BU-LRAIC methodology, weighted average costs of the length of lines and the size of exchanges and the averaging over the three years. Therefore, Eircom does not accept that the Model could have such 'legal effect'. It further added that the expression '…*which has all necessary legal effect, including but not limited to the purpose of determining cost orientation and Eircom's compliance with its obligations of cost orientation under Section 9 of the SMP Decision*' is disconcerting and there should be no use of the 'Model' for the purpose of defining the scope of Eircom's obligation.

- *The directed LLU price:* Eircom stated that it was not clear that the draft direction (emphasis on Section 4.1) related to the recurring rental charge, and does not preclude existing, regulated charges (such as those for survey, collocation, facilities, connections, fault reporting, etc.). In addition, Eircom believed that it would be helpful if the direction clarified whether, within the upper limit, rebate schemes and other types of discounts are allowed. In addition, Eircom stated that the geographic scope of application for the price should be clarified in the direction, that is, that the directed price applies across the relevant market regardless of exchanges being unbundled.

- *Revocation of ComReg Decision No.* D15/04: Eircom stated that Decision No. D15/04 directed Eircom to amend its prices on 1/12/2004, 1/12/2005, 1/12/2006 and 1/12/2007. Eircom believed that this direction (emphasis on Section 6) has exhausted its effects and there is no reason to revoke it or, for that matter, maintain it in force pending the entry into force of the new direction.

- *Review of the draft direction:* Eircom pointed out that ComReg has consulted upon the period for the price control of three years, subject to a review in year 2, unless exceptional circumstances warrant intervention prior to year 2. Eircom stated that ComReg has not reflected this in the draft direction (with particular emphasis on Section 4.2 and Section 8.1). Eircom also added that that no "sunset clause" was included as part of the draft direction and that the price would therefore, in fact, remain in force forever, unless amended or revoked. Eircom believed that this is entirely inappropriate and that the direction should provide for the price control to apply for a period of three years, subject to a review at year 2 (and amendment if justified by exceptional circumstances). Eircom is also concerned that the price control has no end-date and if the directed price were to continue in force beyond June 2012, the directed price would no longer be supported by the model.

- *Effective date and implementation:* Eircom further stated that the draft determination suggests that the effective date will be the date of publication of the Decision and that the revised prices will be effective on all invoices issued 30 calendar days after the effective date. However, Eircom believed that this is not reasonable or practical and fails to take account of the capability of Eircom's current ordering and billing systems capability, or Eircom's legitimate legal entitlement. Eircom explained that LLU is currently billed on a system called Progressor. Each line is typically billed for discrete calendar months. In common with retail line rental and wholesale line rental, LLU rental is billed in advance. Invoices are issued between the 23rd and 27th of each month for the next month, i.e. rental for July will be invoiced in late June. However, while the invoice is issued late in the month, the charges are actually raised in the billing system at the start of the month, i.e. the rental charges for July are raised in the billing system on 1st June, and the invoices are printed and issued between 23rd - 27th June. This means that the price changes must be loaded into the billing system before the start of June to ensure that the charges raised on the July invoice – issued in late June – reflect the correct prices. Eircom therefore believed that Section 4.2 should be amended and provide for the application of any new price 60 days after the effective date.

ComReg's Final Position and Conclusion

6.5 ComReg has carefully considered the views of respondents and has amended the draft decision instrument to take a number of those views in to account.

6.6 ComReg has considered BT's comments and concludes that because Eircom already has non-discrimination and transparency obligations under ComReg Decision No. D08/04, it is not necessary to address these issues in the decision instrument.

6.7 ComReg's conclusions, taking in to account Eircom's responses are as follows below.

- *Legal basis:* ComReg has described the legislative basis for this decision in Appendix A. It is also referred to in the decision instrument. Appendix A clearly discusses the basis for using ComReg Decision No. D08/04. ComReg has notified a new market analysis for the Wholesale Physical Network Infrastructure Access ("WPNIA") market to the European Commission. The market analysis is contained in ComReg Document No. 08/104[51] and the preliminary conclusion found Eircom to have SMP in the WPNIA market. (A summary of ComReg's findings is contained in Appendix B). A final decision has yet to be published. ComReg Document No. 08/104 demonstrates that the competitive conditions in the WUA market are unchanged in so far as they relate to LLU and that Eircom

[51] Market review: Wholesale physical network infrastructure access (Market 4): Response to ComReg Document 08/41 and Draft Decision, Document 08/104, 23 December 2008.

continues to have a position of SMP. Accordingly, ComReg does not agree with Eircom's position. On the contrary, ComReg believes it is valid to amend the LLU and SLU pricing methodologies and that the maintenance of Eircom's obligation of cost orientation is appropriate, justified, proportionate and consistent with ComReg's statutory objectives.

- *Reference to the 'Model':* ComReg has taken in to account Eircom's observations. ComReg has decided to remove reference to the 'Model' from the decision instrument.

- *Directed LLU price:* The decision instrument has now been amended to provide that the charges relate to the monthly rental charge for LLU and SLU. In relation to the rebate schemes/other discounts, ComReg will consider any such requests in this regard on a case by case basis. As stated earlier in the document, the LLU/SLU maximum prices are national prices.

- *Revocation of ComReg Decision No. D15/04*: ComReg disagrees with Eircom's views that revocation of ComReg Decision No. D15/04 is unnecessary. On the contrary, ComReg believes that it is necessary in order to ensure there is no legal uncertainty about which instrument is in force and particularly, to avoid any suggestion that two legal instruments could be simultaneously in force. Accordingly, ComReg Decision No. D15/04 is being revoked, with the proviso that if this decision is the subject of a statutory appeal (or other legal proceedings) the revocation will not be operative for the time being.

- *Review of the draft direction*: Eircom states that the draft direction does not include a reference to the three year price control and the review in year two. In addition, Eircom believes that it is inappropriate that "no sunset clause" has been included. ComReg has considered this issue further. At the outset, it should be made clear that regulated entities have no general legal entitlement or expectation in relation to the sunsetting of their obligations (i.e. that they be set only for a particular period). With regard to the price control period, the decision instrument now provides that the price control period is from the effective date of this decision until 30 November 2012. The decision instrument also provides that a review will be commenced no later than six months in advance of expiration of the price control period. The review will allow ComReg to assess whether the current adopted approach in terms of the BU-LRAIC model and the pricing methodologies remains appropriate. As part of this review ComReg will assess whether any changes are necessary to the modelling approach, the pricing methodologies and/or the maximum LLU and SLU monthly rental charges. This review will be subject to consultation as appropriate and necessary with Eircom, OAOs and the public. ComReg intends to use its reasonable endeavours to ensure that the review is completed in a timely and proper manner and if any amendments are necessary, that these are made immediately upon the expiry of the price control period. ComReg also expects Eircom and relevant OAOs to use their reasonable endeavours to ensure that the review is completed in a timely and proper manner. In the event that the review is not completed by the end of the price control period, (for whatever reason) the revised LLU and SLU monthly rental charges in this decision will remain in place until the review is completed or until Eircom proves to ComReg's satisfaction that any proposed amendments by Eircom to the LLU and SLU monthly rental charges are fully justified and cost oriented. This is necessary to avoid regulatory uncertainty, and to ensure that a regulated price still applies, in case the review is not completed by 30 November 2012. Finally, ComReg is expressly reserving the right to review (and if necessary amend) the price control, prior to the scheduled review, having regard to any circumstances that it considers exceptional.

- *Effective date and implementation*: With regard to Eircom's concerns in relation to the billing system, ComReg concludes that all Eircom invoices (or credit notes) issued to OAOs in respect of LLU or SLU monthly rental should be based on the revised maximum charges from the effective date of this decision but no later than 28 days following the effective date of this decision. This is to allow OAOs the benefit of the reductions to the LLU and SLU monthly rental charges. If necessary, Eircom should carry out manual adjustments to account for the difference between the old LLU monthly rental charge on its billing system and the new maximum LLU monthly rental charge set by ComReg. If necessary, Eircom should issue credit notes to OAOs to ensure that OAOs are not charged in excess of the maximum charge of €12.41 for LLU and €10.53 for SLU from the date of this decision. Given the low levels of LLU volumes, ComReg believes that this should not be a burdensome exercise.

6.8 The final decision instrument and directions are contained in **Section 7.**

7 DECISION INSTRUMENT AND DIRECTIONS

1 STATUTORY AND LEGAL POWERS

1.1 This Decision Instrument and these Directions are made by ComReg, pursuant to the following:

I. Section 10 of the Act of 2002;

II. Regulation 9 of the Access Regulations;

III. Regulation 10 (5) of the Access Regulations;

IV. Regulation 14 of the Access Regulations;

V. Regulation 15 (2) of the Access Regulations;

VI. Regulation 17 of the Access Regulations; and

VII. The SMP Decision, in particular, but not limited to, sections 3, 9 and 13 thereof.

1.2 This Decision Instrument and these Directions are also made by ComReg having regard to and having taken in to account the following:

I. Section 12 of the Act of 2002;

II. Regulation 14 of the Access Regulations;

III. The Policy Directions made by the Minister for Communications, Marine and Natural Resources on 21 February 2003 and 26 March 2004;

IV. The analysis and reasoning set out in ComReg Document No.08/56, ComReg Document No. 09/39 and ComReg Document No. 09/62 and the submissions received from respondents in relation to same; and

V. The analysis and reasoning set out in ComReg Document No. 10/10 (ComReg Decision No. D01/10) entitled "*Response to Consultations and Final Decision – Local Loop Unbundling ("LLU") and Sub Loop Unbundling ("SLU") Maximum Monthly Rental Charges"* which shall, as necessary, be construed together with this Decision Instrument and these Directions.

2 DEFINITIONS

2.1 In this Decision Instrument and these Directions:

"Access Regulations" means the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2003, as amended by the European Communities (Electronic Communications Networks and Services) (Access) (Amendment) Regulations 2007 and as at any time subsequently amended;

"Act of 2002" means the Communications Regulation Act, 2002 as amended by the Communications Regulation (Amendment) Act, 2007 and as at any time subsequently amended;

"ARO" means the most up to date version of the Access Reference Offer price list which is published by Eircom on its website;

"ComReg" means the Commission for Communications Regulation, as established under section 6 of the Act of 2002;

"ComReg Decision No. D15/04" means ComReg Decision No. D15/04 entitled *"Decision Notice and Direction – Local Loop Unbundling: Review of Eircom's ULMP Monthly Rental Charge",* dated 5 November 2004 (Document No. 04/110);

"ComReg Document No. 08/56" means ComReg Document No. 08/56 entitled *"Consultation - Proposals for Local Loop Unbundling Pricing Methodologies",* dated 10 July 2008;

"ComReg Document No. 09/39" means ComReg Document No. 09/39 entitled *"Response to Consultation Document No 08/56: Further Consultation on Local Loop Unbundling ('LLU') and Sub Loop Unbundling ('SLU') Monthly Rental Charges",* dated 8 May 2009;

"ComReg Document No. 09/62" means ComReg Document No. 09/62 entitled *"Further Input to Consultation Document No. 09/39 on Local Loop Unbundling ('LLU') and Sub Loop Unbundling ('SLU') Monthly Rental Charges*", dated 27 July 2009;

"ComReg Decision No. D01/10" means ComReg Decision No. D01/10 (ComReg Document No. 10/10) entitled "*Response to Consultations and Final Decision – Local Loop Unbundling ("LLU") and Sub Loop Unbundling ("SLU") Maximum Monthly Rental Charges",* dated 9 February 2009;

"Eircom" means Eircom Limited, its successors and assigns and its subsidiaries, and any undertaking which it owns or controls and any undertaking which owns or controls Eircom Limited;

"LLU" means local loop unbundling;

"OAO" means other authorised operator;

"SLU" means sub-loop unbundling; and

"SMP Decision" means ComReg Decision No. D8/04, entitled *"Designation of SMP and SMP Obligations - Market Analysis: Wholesale unbundled access (including shared* *access) to metallic loops and sub-loops",* dated 15 June 2004 (Document No: 04/70) or any decision in substitution thereof.

3 SCOPE AND APPLICATION

3.1 This Decision Instrument and these Directions apply to Eircom.

3.2 This Decision Instrument and these Directions are binding upon Eircom and Eircom shall comply with them in all respects.

4 NEW LLU AND SLU MONTHLY PRICES

4.1 Eircom is hereby directed to charge no more than the following prices for LLU monthly rental and SLU monthly rental to OAOs:

I. LLU – € 12.41 per line per month; and

II. SLU – € 10.53 per line per month.

4.2 For the avoidance of doubt, nothing in this Decision Instrument and these Directions shall prevent Eircom from charging prices for LLU and SLU monthly rental to OAOs, less than the prices specified in section 4.1, provided that Eircom obtains the prior written approval of ComReg to such prices and provided that such prices are in compliance with Eircom's regulatory obligations and other laws.

4.3 Eircom should apply section 4.1 from the effective date, to all Eircom invoices/credit notes issued to OAOs, (in order to immediately give OAOs the benefit of the reductions) in LLU or SLU monthly rental prices, but in any event, Eircom shall do so no later than 28 days following the effective date of this decision.

4.4 Eircom shall not be required to pre-notify ComReg or OAOs of the price changes required by section 4.1 for the purpose of applying those prices.

5 PUBLICATION OF PRICES IN THE ARO

5.1 Eircom is hereby directed to amend the ARO, to include the prices referred to in section 4 as soon as possible following the effective date of this decision and at the same time to publish the ARO, so amended, on its wholesale website, but in any event no later than 28 days following the effective date of this decision.

6 REVOCATION OF COMREG DECISION NO. D15/04

6.1 Subject to section 6.2, ComReg Decision No. D15/04 is revoked.

6.2 Section 6.1 shall not come in to operation if this Decision Instrument and these Directions are appealed, or otherwise the subject of legal proceedings and if a stay or suspension in respect of this Decision Instrument and these Directions (or a section or provision thereof) has been ordered by a Court, or if this Decision Instrument and these Directions (or a section or provision or portion thereof) is annulled or found unlawful or invalid by a Court, or remitted by a Court to ComReg.

7 SEVERANCE AND MAINTENANCE OF PROVISIONS

7.1 If any section or provision or portion of this Decision Instrument and these Directions is found by a Court to be invalid, or otherwise judged by a Court to be unlawful, void or unenforceable, that section, provision or portion shall, to the extent required, be severed and rendered ineffective as far as possible, without modifying the remaining section(s), provision(s) or portion(s) of this Decision Instrument and these Directions and this shall not in any way affect the validity or enforcement of this Decision Instrument and these Directions.

8 STATUTORY POWERS NOT AFFECTED

8.1 For the avoidance of doubt, nothing in this Decision Instrument and these Directions shall operate to limit ComReg in the exercise and performance of its statutory powers or duties under any primary or secondary legislation (in force on or prior to or after the effective date of this Decision Instrument and these Directions) from time to time as the occasion requires.

9 EFFECTIVE DATE AND DURATION

9.1 The effective date of this Decision Instrument and these Directions shall be the date of their publication.

9.2 This Decision Instrument and these Directions shall remain in force from the effective date of this decision until 30 November 2012.

10 REVIEW AND AMENDMENT

10.1 ComReg shall commence a review of the maximum prices for LLU monthly rental and SLU monthly rental prices referred to in section 4, no later than 31 May 2012 and pursuant to that review, may amend same. ComReg may also review the underlying methodologies for setting the maximum prices referred to in section 4 and may in that regard make any necessary and consequential amendments.

10.2 Notwithstanding sections 9.2 and 10.1, should the review contemplated by section 10.1 not be completed by 30 November 2012 for whatever reason, then the maximum prices for LLU monthly rental and SLU monthly rental referred to in section 4 shall continue to have full force and effect until the review is completed, or until Eircom proves to ComReg's satisfaction that any amendments proposed by Eircom to the said prices (which shall be strictly subject to ComReg's prior approval) are fully justified and cost oriented.

10.3 Without prejudice to section 10.1, ComReg may review and if necessary, amend the maximum prices for LLU monthly rental and SLU monthly rental prices referred to in section 4, having regard to circumstances that it considers exceptional.

10.4 A review or amendment pursuant to sections 10.1 or 10.3 shall occur following consultation as appropriate and where required.

ALEX CHISHOLM
CHAIRPERSON
THE COMMISSION FOR COMMUNICATIONS REGULATION
DATED THIS THE 9 DAY OF FEBRUARY 2010

8 Regulatory Impact Assessment

Introduction

8.1 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 regulation options on different stakeholders.

8.2 ComReg's approach to the RIA is set out in the Guidelines published in August 2007, in ComReg Document 07/56 & 07/56a. In conducting the RIA ComReg will take into account the RIA Guidelines[52], adopted under the Government's Better Regulation programme. The RIA Guidelines are not legally binding upon ComReg. However, in conducting the RIA, ComReg will have regard to them, 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. In conducting a RIA ComReg will take into account the six principles of Better Regulation:

1. Necessity.
2. Effectiveness.
3. Proportionality.
4. Transparency.
5. Accountability.
6. Consistency.

8.3 To ensure that a RIA is proportionate and does not become overly burdensome, a common sense approach has been taken towards the RIA. As decisions are likely to vary in terms of their impact, if after initial investigation a decision appears to have relatively low impact, then ComReg would expect to carry out a less extensive RIA in respect of those decisions.

8.4 As stated in the previous LLU pricing consultation documents, ComReg highlighted that, as it is not imposing a new regulatory obligation on an undertaking, it is not mandatory for it to provide a RIA in this case. However, ComReg has performed a regulatory impact assessment in recognition of the magnitude of some of the changes to the costing methodology applied to the revised maximum LLU and SLU monthly rental charges.

8.5 The RIA should be read in conjunction with the other sections of this document which contain the detailed analysis and reasoning of ComReg's decision in deriving the revised maximum LLU and SLU monthly rental charges.

8.6 In ComReg Document No. 09/39 ComReg discussed its proposed regulatory impact assessment on the relevant options available to it in terms of setting a revised maximum LLU and SLU monthly rental charge. ComReg also assessed the potential impact on the various stakeholders as a result of imposing its preferred option. In ComReg Document No. 09/39, ComReg also requested industry views on its

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

proposed RIA. A number of respondents provided comments on the RIA which are discussed below. ComReg has considered the views of the respondents in finalising its RIA. The updated RIA which is discussed below includes further analysis based on operator responses and ComReg's final assessment based on its preferred pricing option in determining the revised LLU and SLU monthly rental charges.

Consultation Question in ComReg Document No. 09/39

Q.20. Respondents are requested to provide views (if any) which ComReg should consider in completing its Regulatory Impact Assessment.

Views of Respondents to ComReg Document No. 09/39

8.7 Magnet agreed with the RIA carried out while Smart had no comments to provide.

8.8 BT stated that is was disappointed that it was not afforded the same opportunity to have studied the costing model as was provided to Eircom. It added that the fault clearance costs should be included as part of the LLU and SLU monthly rental charges. BT stated that the current proposed charge for LLU is over-recovering costs and the price should be closer to €9.95 including line maintenance costs.

8.9 Vodafone agreed with the high level preliminary conclusions of the RIA and believed that it sufficiently demonstrated that the general approach adopted by ComReg is appropriate, justified and proportionate. It believed that the conclusions of the RIA could be further strengthened if ComReg were to quantify where feasible, the benefits and costs of its proposed option relative to the alternative options available to ComReg.

8.10 Eircom provided detailed comments on the RIA (see Appendix 2 of its response). Eircom believed that a comprehensive RIA is required in the present case and that the current RIA does not meet the minimum requisite standard for a RIA appropriate to a decision of such significance on stakeholders and on relevant markets. Eircom is concerned that ComReg's RIA reflects an analysis that is partial and narrow, which means it neglects consideration of important impacts on stakeholders, and competition more generally. Eircom's main concern appears to relate to an inadequate discussion of the appropriate weight that should be attached to the various costs and benefits experienced by each of the relevant stakeholders. Eircom also believe that the RIA is flawed as it overlooks the centrality of the LLU price to date as a pricing input into other wholesale and retail products in the access network such as WLR, line share, retail line rental and bundling prices. Eircom included as part of its response a framework for what it believes would constitute an appropriate and proportionate RIA in this context. In particular, Eircom set process deficiencies and substantive deficiencies in relation the RIA. A summary of these are discussed below.

8.11 Process Deficiencies:

- The RIA has not adopted a correct structure.
- The relevant policy objective, especially those specific to this context, are not sufficiently enunciated, which means it is unclear what ComReg is attempting to maximise in making the Decision.

- The analysis is partial, in that it focuses narrowly on the impact of reducing one price of one product in one market, without a holistic consideration of the wider impacts on (a) relevant prices and (b) other relevant markets.
- There is an inadequate discussion of the appropriate weight that should be attached to the various costs and benefits experienced by each of the relevant stakeholders.

8.12 Substantive Deficiencies:

- The RIA only considers two substantive alternative policy options, namely basing the charge on either (i) geographically averaged costs over all working lines or (ii) probability weighted costs, taking into account the probability of OAOs unbundling at certain exchanges, or lines of a certain maximum loop length.
- In assessing the rationale and impact of reducing the LLU charge from current levels, ComReg only focuses on the resultant increase in demand for LLU by OAOs.
- ComReg asserts that its preferred approach of basing the charge on the weighted cost of economic lines still allows for efficient cost recovery for Eircom. However, Eircom maintained that ComReg is unclear whether the lower price for LLU applies to all WLR and retail lines and the consequences of each approach must be considered.
- ComReg's proposed approach that LLU charges be based on the recovery of 'economic' exchanges and lines on the basis that OAOs should only contribute to the costs of the lines they purchase is specious reasoning, as it fails to recognise that the largest effective purchaser of LLU is Eircom, in its self supply of LLU to itself in the provision of wholesale and retail broadband and telephony across Ireland. This logical flaw leads to the serious risk that Eircom will be unable to recover the efficiently incurred costs of its national network.

8.13 Eircom included its version of the RIA in Appendix 2 to its response.

Background and Objectives

8.14 Throughout the RIA ComReg is assessing the potential impacts of three possible options for deriving the maximum LLU and SLU monthly rental charges (as outlined below) on various stakeholders. ComReg considers that one of its main objectives, *inter alia*, is to foster competition in the telecommunications industry through appropriate and efficient infrastructure investment. When determining the appropriate maximum LLU and SLU monthly rental charges, it is necessary to ensure that the charges set lead to efficient recovery of costs by Eircom for those exchanges feasible for unbundling, efficient investment by operators, as well as greater choice and competitive prices for consumers.

8.15 An important consideration for this RIA is the scope of regulatory prices which are the subject of this decision and which should be considered when setting out the relevant regulatory options. The purpose of the revised charges in this decision is to provide Eircom, OAOs and other operators with efficient competitive and investment incentives while at the same time enhancing consumer welfare.

Identify and Describe the Regulatory Options

8.16 ComReg considers that the key stakeholders are:

- The incumbent, Eircom.
- OAOs that purchase LLU services or have independent access infrastructure.
- The consumer.

8.17 ComReg has assessed the impact of the options available to it on each of the stakeholders taking into account its statutory objectives to promote competition and facilitate efficient investment. In doing so it has taken into account the comments received in relation to the draft RIA that was contained in Consultation Document 09/39.

8.18 The following three options were considered by ComReg in determining an appropriate and reasonable basis for setting cost oriented maximum LLU and SLU monthly rental charges:

- Option 1 – *Continue to use the 2003 BU-LRAIC model*.
- Option 2 - *Use the new version of the BU-LRAIC model to determine the monthly cost per line for LLU and SLU based on <u>all</u> working lines*.
- Option 3 - *Use the new version of the BU-LRAIC model to determine the cost per line for LLU and SLU based on the probability of OAOs unbundling at certain exchanges and considering a maximum loop length.*

Option 1 – Continue to use the 2003 BU-LRAIC model

8.19 Option 1 is based upon the existing LLU costing model used to determine the current LLU monthly rental charge, which is the "do nothing" option. As stated in the consultation process, ComReg is of the view that the model upon which the existing LLU price was based is no longer fit for purpose. ComReg considered that it contained out-dated modelling techniques and did not adequately reflect the efficient costs that a new entrant would necessarily incur and as a result, may not provide the most appropriate set of incentives for the industry but, in particular, for Eircom or the OAOs.

8.20 In addition, the existing model was based on a sample of exchanges. The sample selected accounted for approximately 10% of exchanges (or MDFs) covering 5 geographic types of areas in Ireland. These samples were then extrapolated to represent the entire Eircom access network. In view of the more advanced mapping systems that have now become available, the network can be analysed in a more sophisticated manner.

8.21 Furthermore, the use of the existing model would require OAOs to contribute towards the costs of all exchanges by default. ComReg believes that this is a seriously limiting property of the existing model.

8.22 All parties agreed that the current model is no longer fit for purpose for setting LLU/SLU charges and should be replaced. Thus, a new BU-LRAIC model was developed, which overcame the deficiencies of the current model. Following the completion of a new and updated model, essentially two further options were developed, which build on the existing price control without seeking to substantially modify it.

Option 2 - Use the new version of the BU-LRAIC model to determine the monthly cost per line for LLU and SLU based on all working lines

8.23 The existing model, as discussed in option 1, calculated the LLU and SLU monthly rental charges based on the assumption that all lines were equally likely to be unbundled and therefore, should have equal weight when undertaking the cost calculation. Option 2 maintains the cost treatment of basing the monthly rental charge per line on all working lines when developing the new version of the BU-LRAIC model.

8.24 The advantage of this option is that it is relatively similar to the current form of regulation and therefore, may be implemented more easily than Option 3. However, there is a risk that this option could induce some regulatory uncertainty if the focus on all working lines was perceived as an interim measure prior to the adoption of further reforms (such as those discussed in Option 3).

8.25 Option 2 would likely result in even higher prices for LLU which would lead to a significantly lower take-up of LLU in Ireland. It would also exacerbate a situation where OAOs are currently contributing to the cost of exchanges that they are unlikely to unbundle during the price control. ComReg believes that the current low level of LLU is not reflective of a competitive market and there is a need to ensure that the correct regulatory framework is in place to facilitate effective infrastructure based competition. ComReg does not believe that this option fulfils this objective and experience of LLU over the past number of years demonstrates this.

8.26 The principle disadvantage with this approach is that it would maintain the current requirement for OAOs to contribute to the full cost of exchanges that they could not feasibly unbundle within the price control period. The effect of this is likely to be lower than efficient levels of unbundling behaviour and could risk higher than efficient levels of investment in alternative platforms. In ComReg's view, the overall effect of this would negatively impact consumers through higher prices and a lack of competition and choice.

Option 3 - Use the new version of the BU-LRAIC model to determine the cost per line for LLU and SLU based on the probability of OAOs unbundling at certain exchanges and considering a maximum loop length

8.27 ComReg is of the view that option 3 more closely aligns the LLU monthly rental charge with the costs of those exchanges that have a reasonable probability of being unbundled during the price control period. The specific implementation of this approach is discussed in Section 5 of this document.

8.28 The advantage of option 3 is that it facilitates efficient entry by OAOs by ensuring the LLU and SLU monthly rental charges are more appropriately linked to the costs that the unbundlers' are likely to incur or the costs of the loop that they should contribute to. This is also consistent with the likely costs of other infrastructure platforms such as cable or wireless. ComReg considers this to be an important part of its policy reform, particularly given the current low levels of LLU activity in Ireland.

8.29 ComReg anticipates that under this option most new unbundling will occur within urban areas (at least in the short-term), providing consumers with increased choice (in terms of increased speeds etc) and lower prices. Notwithstanding this, ComReg considers that the benefits of this option will occur across the whole of Ireland in the medium to long term partly because Eircom's national pricing policy means that price reductions resulting from increased urban competition should directly benefit consumers living in more rural areas. Similarly, while OAOs are not mandated to operate a flat national pricing structure, most do so anyway, and so their customers should also benefit from enhanced competition, wherever they live in Ireland.

8.30 Furthermore, ComReg observes that many of the existing OAOs offer services nationally using a combination of LLU or indirect access. ComReg anticipates that as a result of LLU reform new entrants should behave in a similar manner, leading to further enhancement to competition in both urban and rural areas.

8.31 However, while option 3 has a number of advantages, Eircom has raised concerns that this approach would lead to an under-recovery of its efficiently incurred costs, or would require it to price at an uncompetitive level in urban areas. The potential issues raised by Eircom of under recovery of costs are discussed further below in the context of potential universal service funding. Notwithstanding this, and subject to the provision of appropriate and proportional regulation, ComReg considers that it is Eircom's responsibility to ensure the competitiveness of its retail propositions and where these concerns relate to regulated retail pricing this is a matter for further review and is outside the scope of this document.

8.32 Option 3 is consistent with the Access Regulations which sets out that the regulator shall ensure that the cost recovery mechanism or the pricing methodology used will promote efficiency, sustainable competition and consumer benefits.

8.33 This option also ensures that ComReg balances the different objectives. On the one hand, the express goal of the LLU regime is to foster competition by mandating access to the local loop on an efficient cost basis. On the other, there is a need to preserve infrastructure investment by allowing the local loop provider to recover appropriate costs while not foreclosing investment in alternative platforms such as cable. ComReg believes that this option achieves these objectives in a fair and proportionate manner.

8.34 ComReg also notes that these outcomes are consistent with the Government's objective to promote investment in broadband services and indeed, to develop the "Smart Economy".

Policy risks

8.35 In choosing between the different options, ComReg has considered key policy risks.

- If the regulated charge for LLU and SLU monthly rental were set too low, it could undermine Eircom's ability to recover its efficiently incurred costs and also potentially result in a distortion of competition between Eircom, LLU operators and those with independent local loop infrastructure (e.g. cable).
- If the regulated charge for LLU and SLU monthly rental were set too high it could result in little or no expansion to the current LLU footprint, during the price control period. As a consequence, there would be a risk that anticipated consumer benefits would fail to materialise. It would also provide OAOs with inefficient make/buy decisions and could result in inefficiently high levels of investment in alternative

local loop infrastructure. ComReg believes that this is, in fact, the status quo and one that this decision is seeking to address.

Impact on Stakeholders

8.36 In determining the impact on stakeholders, in relation to the regulatory options above, ComReg considered the following:

Option 1 – *Continue to use the 2003 LLU costing model*		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) May not provide appropriate efficiency incentives for incumbent.	(i) May not provide appropriate make/buy incentives for OAOs, including other platforms such as cable.	(i) Consumers may be subject to higher retail charges and lower levels of choice.
(ii) The costs associated with the LLU services may not be aligned with the charges levied on OAOs.	(ii) OAOs will in all cases be paying for the costs of lines which they are not likely to unbundle and therefore creating some uncertainty about future charges.	(ii) Continued failure of LLU and platform competition.
(iii) Some potential benefits from the continuation of a long running policy approach, although these may be undermined if the continuation of the policy is only seen as an interim position.	(iii) OAOs pay for the cost of lines that may not be capable of supporting broadband services.	(iii) Reduced confidence in an effective regulatory framework.

Option 2 – *Use the BU-LRAIC to determine the monthly cost per line for LLU and SLU based on all working lines*		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) More appropriate incentives provided as the model includes updated modelling inputs and assumptions.	(i) More appropriate incentives provided by increased sophistication in modelling process.	(i) Limited short-term impact on consumers. Some increase in long-term welfare through improved incentives arising from new model.
(ii) The costs associated	(ii) OAOs continue to pay	(ii) Consumers will

with the LLU services may not be aligned with the charges levied on OAOs.	for exchanges that they are unlikely to be able to unbundle during the price control period. Potential for inefficient levels of platform competition.	continue to pay higher retail charges.
	(iii) Limited scope for new, efficient, entry by OAOs.	(iii) Less differentiation of services and therefore less choice for consumers.
	(iv) Continued lower levels of differentiation of services and broadband penetration.	
Option 3 – ***Use the BU-LRAIC model to determine the monthly cost per line for LLU and SLU based on the probability of OAOs unbundling at certain exchanges, unbundling certain lines and considering a maximum loop length***		
(a) Impact on incumbent	**(b) Impact on OAOs**	**(c) Impact on consumer**
(i) Closely aligns the costs associated with LLU services with the charges levied on OAOs.	(i) Reduction in LLU charge given that OAOs are not required to fully contribute to those exchanges that are not economically feasible to unbundle.	(i) Expected to benefit from price reductions and increased levels of choice. Reduced prices also allow a wider group of consumers (particularly those on lower incomes) access to broadband and telephony services.
(ii) Provides Eircom with appropriate incentives to invest in LLU infrastructure.	(ii) Facilitates OAOs to increase their LLU footprint to additional exchanges. Economies of scale of unbundling allow OAO's to increase footprint further.	(ii) Consumers will be encouraged to purchase additional services (particularly broadband).
(iii) Increases the incentive for Eircom to offer competitive and innovative products/services.	(iii) Wholesale charges provide OAO's (including platform competitors) with correct make/buy decisions and facilitate efficient entry.	(iii) Combination of national pricing structure and additional wholesale broadband access ("WBA") entry by LLU operators should benefit consumers across the whole of Ireland.

(iv) In the medium to long term successful competition from LLU OAOs may allow for reduced regulation at a retail and wholesale level	(iv) Increase in LLU could lead to an increase in employment by OAO's through the unbundling of exchanges and the provision of support staff.	(iv) Ireland may become more competitive from an overall cost perspective and this is likely to benefit those who utilise LLU services as well as the wider economy.
	(v) As inter platform competition increases and is effective there may be a possibility of reduced regulation.	

ComReg's Final Conclusions

8.37 As noted above the RIA and the conclusions discussed below should be read in conjunction with the other sections of this document. The detailed analysis and reasoning of ComReg's decision in deriving the revised maximum LLU and SLU monthly rental charges are discussed in previous sections. In addition, the majority of points raised by the OAOs in relation to the RIA have already been addressed in previous sections of this document.

8.38 Eircom in its response raised a number of points largely in relation to its view that the RIA carried out by ComReg was partial and narrow and that it neglected consideration of important impacts on stakeholders and competition more generally. In addition, Eircom believed that the RIA was flawed as it overlooked the centrality of the LLU price to date as a pricing input into other wholesale and retail products in the access network such as WLR, line share, retail line rental and bundling prices. As noted in ComReg Document No. 09/39, since ComReg is not imposing a new regulatory obligation on an undertaking, it is not mandatory for it to provide a RIA. However, ComReg decided to undertake an impact assessment in recognition of the magnitude of some of the changes to the costing methodologies applied to the revised maximum LLU and SLU monthly rental charges. ComReg is of the view that the RIA currently discusses all the appropriate and relevant regulatory options in relation to the determination of the maximum LLU and SLU monthly rental charges. The options available to ComReg have been clearly discussed as well as ComReg's reasoning for adopting option 3, as opposed to options 1 or 2. ComReg has also assessed the likely impact on the relevant stakeholders.

8.39 With regard to Eircom's concerns regarding the LLU charge as an input into other wholesale and retail products, ComReg is of the view that the impact of the change to the LLU charge on other wholesale and retail charges should be addressed separately and is outside the scope of this review. The retail price cap was set for three years in 2007 and a further review of the retail price is due shortly. As part of that review, all relevant inputs will be reviewed to determine the appropriate costs, including the cost of the access network, in relation to any amendments to the retail line rental price cap. ComReg has also issued a consultation on bundles in ComReg Document 10/01[53].

8.40 For the reasons discussed earlier in this section, ComReg considers that developing a more robust approach to setting the maximum LLU and SLU monthly rental charges (options 2 and 3) outweighs any benefits there may be from retaining the current model. However following further analysis of the exchanges that OAO's may unbundle, ComReg remains of the view that option 2 does not closely align the LLU and SLU monthly rental charges with the costs that OAOs would incur at these exchanges. Option 1 does not allow such an issue to be addressed. While option 2 produces a LLU monthly rental charge based on the efficient costs incurred by Eircom it will not lead to efficient investment in infrastructure or the facilitation of effective competition in the marketplace. Therefore ComReg is of the view that option 2 is not appropriate for the determination of a monthly LLU monthly rental charge.

8.41 The principle advantage of Option 3 is that is closely aligns the maximum LLU and SLU monthly rental charges with the costs that OAOs would incur when unbundling given the likely exchanges which they will unbundle during the price control period. In ComReg's view the change from the existing approach represents an important opportunity to facilitate efficient entry by OAOs including other platforms such as cable and sets the correct "make" or "buy" decisions, reducing the possibility of inefficient entry or duplication of networks in more densely populated areas. Further take-up of LLU services by OAOs should benefit consumers through lower charges and increased choice in both rural and urban areas. While Eircom is concerned that this Option may lead to a net under-recovery on some of its local loop costs, ComReg believes that Eircom is fully compensated for the provision of LLU through this Option. However, ComReg considers that there is an important distinction between the appropriate cost-oriented LLU and SLU monthly charge and any secondary implications that this may have for over-all cost recovery. As such, ComReg considers that these issues would need to be addressed by a separate process, rather than as part of the LLU price setting process. This issue is currently under review by ComReg and Eircom as part of a separate process.

8.42 On balance, ComReg considers Option 3 is the most appropriate means for determining the monthly LLU charge. ComReg considers therefore that it is appropriate for it to direct a maximum monthly rental charge of €12.41, as devised under Option 3, during the price control period. ComReg is of the view that option 3 will ensure that :

- Based on the most up-to-date information available, the revised charge is more consistent with the cost orientation obligation while OAOs are not charged for the cost of lines in non-economic exchanges.
- Eircom is able to fully recover its efficiently incurred costs for the provision of LLU services for those exchanges likely to be unbundled by OAOs during the price control period. The issue of universal service funding is outside the scope of this LLU price review, but is currently being addressed by ComReg as part of a separate work-stream.

[53] Consultation and Draft Direction – Further specification of the obligation not to unreasonably bundle pursuant to D07/61; published on 6 January 2010.

- OAOs are provided with appropriate incentives to increase their LLU footprint. This will result in OAOs investing efficiently in their networks.
- There will be an increased level of competition amongst all operators, offering to consumers a greater choice and differentiation of services, and a higher level of broadband penetration.

8.43 ComReg also wishes to emphasise that the approach is consistent with practice in some other EU member states and that the review has been conducted under an effective and transparent regulatory environment.

8.44 As stated above, ComReg has considered the six principles of Better Regulation as follows:

8.45 ComReg considers it **necessary** to undertake the review at this time. The previous price control required annual adjustments in line with CPI for three consecutive years. The final adjustment for CPI took place on 1 December 2007. During the previous price control period the take up of LLU has been exceptionally low with the cost of monthly line rental being cited as one of the main contributing factors.

8.46 As part of this review ComReg has assessed the levels of actual unbundling of OAOs to date as well as confidential information on OAO plans for future unbundling. This information has clearly shown that OAOs are more likely to unbundle exchanges above a certain threshold and that some exchanges are not economically feasible to unbundle, at least during this price control period. However, the current LLU and SLU monthly rental charges therefore do not reflect the efficient cost of those exchanges/cabinets feasible for unbundling during the price control period and, by implication, has restricted OAOs incentives to invest efficiently in their networks, resulting in a lack of differentiation of services, reduced levels of offerings to consumers and an overall lack of competitiveness.

8.47 Furthermore, it has been more than 6 years since the previous model, upon which the previous price was based, was constructed. In the intervening period there have been improvements in modelling techniques which have resulted in a more robust model. There have also been significant changes in underlying cost data, trends and assumptions, used to determine the maximum LLU and SLU monthly rental charges.

8.48 ComReg is of the view that it has been **effective** in its review of the maximum LLU and SLU monthly rental charges. LLU is a principle regulated services that Eircom can offer to OAO's and one which could have a significant impact upon their business case models. The successful implementation of LLU could have significant positive benefits for consumers and indeed Ireland's competitiveness.

8.49 ComReg considers that its approach will ensure Eircom's compliance with its cost orientation obligations. Extensive interaction has taken place with Eircom in the construction of the access model with detailed discussions on, *inter alia*, cost inputs, modelling assumptions, and the application of engineering rules. An important element of this approach is ComReg's decision to set the maximum LLU and SLU monthly rental charges so that OAO's are only required to contribute to the cost of the provision of LLU/SLU services in areas where unbundling is feasible during the price control period.

8.50 ComReg is of the view that it has been **proportionate** in its review. No new obligation has been imposed upon Eircom. While a different pricing approach has been taken in relation to the pricing methodology, this has been considered in the overall context of promoting competition and infrastructure investment, as well as ensuring efficient recovery of relevant costs by Eircom. Variations of the methodology imposed by ComReg has also been considered and implemented by other NRAs.

8.51 ComReg is of the view that the process of this review has been **transparent.** Since 2008 ComReg has issued three consultation documents and has had extensive interaction with Eircom particularly in relation to the modelling exercise. ComReg has also consulted with OAOs at various stages of the process. While it has been unable, (due to the confidentiality and commercial sensitivity of the information contained in the model), to share the access model with OAOs, it has provided as much detail as possible on the model inputs and the methodologies applied to the model during the consultation process.

8.52 On 1 September 2009, ComReg pre-notified its decision to the European Commission. A "No Comments" letter was received from the EC on 1 October 2009. On 2 October 2009, the EC published a press release endorsing ComReg's proposal to lower the price charged by Eircom for granting access to its network. A statement from the EU Telecoms Commissioner Viviane Reding[54] stated as follows:

"*I am right behind ComReg's cost oriented prices. In the short term, they will result in better prices for consumers, and boost competition in the long term so that consumers also benefit from a wider range of services. ComReg is doing good service to competition in Ireland's high speed broadband internet by promoting direct investment in infrastructure: investment that is crucial not only for Irish people to enjoy affordable and state-of-the-art access to the latest internet applications and services, but also for the Irish economy to remain competitive*".

A statement from EU Competition Commissioner Neelie Kroes also stated as follows:

"ComReg's proposal is good news for competitors and consumers. Due to the proposed regulatory measure, alternative operators will pay less for access to Eircom's network, so they will be able to provide more attractive retail offers. As a result, competition will increase and consumers will have greater choice and better prices".

8.53 ComReg considers that it has been **accountable** in its review. Throughout the process it has outlined its approach, it has provided the necessary and relevant information in relation to the review and has clearly described its findings. Eircom and the OAOs have been given every opportunity to critique and contribute to the model and its underlying inputs and assumptions. ComReg has considered the responses and the data provided by Eircom and the OAOs. The model reflects (without disclosing it), the confidential data provided by Eircom in relation to long lines. In addition, ComReg has also considered data provided by Eircom in relation to the current levels of unbundling, to date, and data provided regarding OAO unbundling plans for the future.

54 http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1404&format=HTML&aged=0&language=EN&guiLanguage=en

8.54 ComReg considers that it has been consistent in its approach. The review has focused on the cost orientation obligation imposed on Eircom since 2004. The inputs and assumptions used in the revised BU-LRAIC model are based data available from the telecoms industry in Ireland. All data received, submissions received, and responses to consultations have been fully considered and where relevant, are reflected in the model used to determine the revised maximum LLU and SLU monthly rental charges.

Appendix A: Legislative and policy background

1. Overview

It is important that this decision is understood in light of Eircom's current legal obligations, ComReg's statutory functions and its overall policy objective of creating the necessary conditions for competition in the LLU market to develop rapidly. The achievement of this statutory and policy objective is of critical importance to the Irish economy.

2. Eircom's position of SMP and obligation to provide access to cost oriented LLU

This decision concerns Eircom's SMP obligation of cost orientation and the maximum monthly rental charges that it will be permitted to charge for LLU (and SLU).

Eircom has SMP in the market for LLU by virtue of Section 3 of ComReg Decision No. D8/04. Eircom was designated with SMP pursuant to the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 ("the Framework Regulations").[55] Eircom has SMP until such time as ComReg determines that this is no longer the case, following a market analysis, or until ComReg Decision No. D8/04 is replaced or revoked.

Section 9 of ComReg Decision No. D8/04 provides that Eircom has a legal obligation of cost orientation in relation to the price of LLU. This obligation was imposed on Eircom pursuant to the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2003 ("the Access Regulations").[56]

In the Recommendation on Relevant Markets,[57] the EU Commission lists 11 different telecommunications markets which are susceptible to *ex ante* regulation. ComReg is required to conduct market analysis in relation to those 11 markets. The WPNIA market (which includes LLU) is one such market and ComReg has conducted a market analysis on it.

On 23 December 2008, ComReg published ComReg Document No. 08/104 entitled *"Response to Consultation Paper - Market review: Wholesale physical network infrastructure access (Market 4). Response to ComReg Document 08/41 and Draft Decision"* ("ComReg Document No. 08/104"). ComReg Document No. 08/104 thoroughly analysed the conditions of competition on the market for WPNIA. The WPNIA market includes LLU. ComReg Document No. 08/104 found that Eircom has a position of SMP in

[55] Those Regulations 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 ("the Framework Directive").

[56] Those Regulations transpose 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 ("the Access Directive").

[57] EU 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. This updated an earlier EU Commission Recommendation of 11 February, 2003 that had listed 18 different markets susceptible to *ex ante* regulation.

the WPNIA market. ComReg Document No. 08/104 was notified to the EU Commission in accordance with all legislative requirements. The EU Commission did not exercise its right of veto in respect of ComReg's findings and has in all material respects agreed with them. Irrespective of that market analysis process, Eircom currently has SMP in the market for LLU by virtue of section 3 of ComReg Decision No. D8/04 and has a legal obligation of cost orientation with respect to LLU. However, this decision is just as relevant and applicable to the WPNIA market on which the market analysis has been conducted.

If ComReg decides that Eircom does not have SMP in the WPNIA market, it would not be legally permissible to impose an obligation of cost orientation on Eircom.[58] In those circumstances, the matter of an appropriate methodology and a model underlying a cost orientation obligation may cease to be relevant, at least for the purpose of SMP obligations.[59]

Notwithstanding the new market analysis that has been conducted by ComReg, Eircom has, by virtue of ComReg Decision No. D8/04, an existing and continuing position of SMP and an obligation of cost orientation with respect to the price of LLU

3. ComReg's statutory functions and objectives

ComReg has made this decision having had careful regard to its statutory functions under section 10 (1) (a) of the Communications Regulation Act, 2002 and its overall regulatory objectives under section 12 thereof.

Under section 10 (1) (a) of the Communications Regulation Act, 2002 one of ComReg's statutory functions is as follows:

> *"...**to ensure compliance by undertakings with obligations** in relation to the supply of and access to electronic communications services, electronic communications networks and associated facilities and the transmission of such services on such networks."*(Emphasis added).

Eircom has an obligation of cost orientation in the LLU market and ComReg must therefore, ensure compliance by Eircom with that obligation. This decision is intended to amongst other things; ensure compliance by Eircom with its legal obligations.

Section 12 (1) (a) of the Communications Regulation Act, 2002 provides that the objectives of ComReg in exercising its functions in relation to the provision of electronic communications networks, electronic communications services and associated facilities are:

(i) To promote competition;

(ii) To contribute to the development of the internal market; and

[58] Except under Article 5 of the Access Directive.

[59] But not necessarily for the purposes of *ex post* application of competition law, for example.

(iii) To promote the interests of users within the Community.

The above statutory objectives are clearly related to the exercise by ComReg of its function of ensuring compliance by Eircom with its legal obligation of cost orientation.

Pursuant to its objective of the promotion of competition, ComReg is required "***to take all reasonable measures***" (emphasis added) aimed at achieving this objective, including:

(i) Ensuring that there is no distortion or restriction of competition in the electronic communications sector; and

(ii) Encouraging efficient investment in infrastructure and promoting innovation.

Pursuant to its objective of contributing to the development of the internal market, ComReg is required "***to take all reasonable measures***" (emphasis added) aimed at achieving this objective, including:

(i) Removing remaining obstacles to the provision of electronic communications networks, electronic communications services and associated facilities at Community level; and

(ii) Ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications networks and services and associated facilities.

Pursuant to its objective of the promotion of the interests of users within the Community, ComReg is required "***to take all reasonable measures***" (emphasis added) aimed at achieving this objective, including:

(i) Encouraging access to the internet at reasonable cost to users.

Regulation 6 (1) of the Access Regulations provides that ComReg shall, acting in pursuit of the objectives set out in section 12 of the Communications Regulation Act, 2002, encourage and, where appropriate, ensure, in accordance with the Access Regulations, adequate access, interconnection and interoperability of services in such a way as to:

(a) Promote efficiency;

(b) Promote sustainable competition; and

(c) Give the maximum benefit to end-users.

4. ComReg's powers under the Access Regulations

In addition to its functions, powers and objectives under primary legislation, such as the Communications Regulation Act 2002, ComReg has all necessary statutory powers to make this decision under secondary legislation. The majority of ComReg's powers are contained in four statutory instruments (made by way of Ministerial Regulations) which give effect to the requirements of EU directives in Ireland. One of these sets of Regulations is the Access Regulations.

Under Regulation 10 (5) of the Access Regulations, ComReg has the power to issue directions requiring Eircom to make changes to a reference offer, including an access reference offer, to give effect to obligations imposed under the Access Regulations and to publish the reference offer with such changes. LLU prices are required to be set out in an access reference offer.

Under Regulation 17 of the Access Regulations, ComReg may, for the purpose of further specifying requirements to be complied with "***relating to an obligation"*** imposed by or under the Access Regulations, issue directions to an undertaking to do or refrain from doing anything which ComReg specifies in the direction. Again, it should be noted that Eircom has an *obligation* of cost orientation imposed on it, pursuant to the Access Regulations, under ComReg Decision No. D8/04.

Under Regulation 14 (4) of the Access Regulations, where an operator has obligations regarding the cost orientation of its prices (which Eircom has) ComReg may, where appropriate, require that prices be adjusted.

Under Regulation 15 (2) of the Access Regulations, ComReg may *"…amend or revoke any obligations imposed by it…"*

Accordingly, ComReg has all the necessary statutory functions, powers and objectives to determine a new LLU price as a requirement for Eircom to comply with, in furtherance of its legal obligation to provide cost oriented access to LLU.

5. Other legislative provisions

ComReg is required under Regulation 14 (3) of the Access Regulations to ensure that any cost recovery mechanism, or pricing methodology that it imposes, serves to promote efficiency and sustainable competition and to maximise consumer benefits.[60] In making this decision, this requirement has at all times been carefully taken in to account by ComReg.

Regulation 14 (3) of the Access Regulations also provides that ComReg may take account of prices available in comparable competitive markets. It should be noted that these provisions mirror those provided for by EU law, as set out under Article 13 (2) of the Access Directive.

Recital 19 of the Access Directive provides that:

> *"…the imposition by national regulatory authorities of mandated access that increases competition in the short-term should not reduce incentives for competitors to invest in alternative facilities that will secure more competition in the long-term"*.[61]

Article 8 of the Framework Directive requires ComReg to promote competition by amongst other things:

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[60] This is also provided for by Article 13 (2) of the Access Directive.

[61] Recital 19.

- Ensuring that users, including disabled users, derive maximum benefit in terms of choice, price, and quality.

- Ensuring that there is no distortion or restriction of competition in the electronic communications sector.

- Encouraging efficient investment in infrastructure, and promoting innovation.

These objectives are also reflected in national legislation by section 12 of the Communications Regulation Act, 2002.

6. Policy Directions

It is also important that this decision is understood in light of the policy directions issued to ComReg by the Minister for Communications, Marine and Natural Resources on 21 February, 2003 and 26 March 2004. ComReg is legally obliged to comply with these policy directions. In that regard section 13 (1) of the Communications Regulation Act, 2002 provides that:

> *"In the interests of the proper and effective regulation of the electronic communications and postal markets, the management of the radio frequency spectrum in the State and the formulation of policy applicable to such proper and effective regulation and management, the Minister may give such policy directions to the Commission as he or she considers appropriate* ***to be followed by the Commission in the exercise of its functions.*** ***The Commission shall comply with any such direction.****"* (Emphasis added).

The policy directions are very significant in the context of the policies that ComReg is pursuing.

For example, policy direction No. 3 of 2003 in relation to broadband provides that:

> *"The Commission shall, in the exercise of its functions, take into account the national objective regarding broadband rollout, viz, the Government wishes to ensure the widespread availability of open-access, affordable, always on broadband infrastructure and services for businesses and citizens on a balanced regional basis within three years, on the basis of utilisation of a range of existing and emerging technologies and broadband speeds appropriate to specific categories of service and customers."*

Policy direction No. 4 of 2003 in relation to industry sustainability provides that:

> *"The Commission shall ensure that in making regulatory decisions in relation to the electronic communications market, it takes account of the state of the industry and in*

> *particular the industry's position in the business cycle and the impact of such decisions on the sustainability of the business of undertakings affected."*

Policy direction No. 9 of 2003 in relation to consistency across technological platforms provides that:

> *"The Commission shall ensure that regulatory obligations imposed upon undertakings engaged in the provision of similar electronic communications services but using different technologies are consistent, taking into account any different conditions that may exist, including the existence of market power."*

A general policy direction in 2004 requires ComReg to focus on competition. It provides as follows:

> *"**ComReg shall focus on the promotion of competition as a key objective.** Where necessary, ComReg shall implement remedies which counteract or remove barriers to market entry and shall support, in all ways possible, entry by new players to the market and entry into new sectors by existing players. ComReg shall have a particular focus on:*
>
> - *Market share of new entrants.*
> - *Price margins on offer to operators at the wholesale level with the goal to ensure that such price margins will incentivise and advance competition.*
> - *Price level to the end user.*
> - *Competition in the fixed and mobile markets.*
> - *Possibilities for incentivising alternative technology delivery platforms to support competition."*(Emphasis added).

The reasons for that policy direction are stated as follows:

> *"The creation of sustainable competition between other authorised operators (OAO) and incumbents across different technical platforms and markets will benefit the economic and social development of Ireland by increasing the choice and decreasing the price to consumers and businesses. There is a need to continue to increase competition in the Communications Sector."*

A further policy direction provides that:

> *"ComReg shall use regulatory and enforcement tools, where necessary, to support Government initiatives and* ***remove regulatory barriers****, if any exist, to such_initiatives* ***to develop broadband.*** *In encouraging the further rollout of broadband ComReg shall have a particular focus on:*
>
> - *The residential and SME sectors.*
> - *Balanced regional development and.*
> - *Incentivising broadband provision on alternative platforms."* (Emphasis added).

The reasons for that policy direction are as follows:

> ***"The development of broadband is a key enabler to enhance and maintain Ireland's economic and social development. It is important that the regulatory environment underpins the development of available, affordable and competitive broadband services."*** (Emphasis added).

7. ComReg strategy statement

ComReg's strategy statement for 2008 - 2010 (ComReg Document No. 07/104 published 17 December, 2007) sets out ComReg's goals for the period. One of those goals is the creation of conditions suitable for competition and the promotion innovation.

Appendix B: Updated Competition Assessment in the Market for Wholesale Unbundled Access

The existing SMP designation and decision on obligations

1. A Decision Notice on Wholesale Unbundled Access (including shared access) to metallic loops and sub-loops was published on 15 June 2004.[62] ("the WUA Decision") The notified Wholesale Unbundled Access ("WUA") market included the following products:

    - Fully unbundled local metallic path.
    - Shared loops (line sharing).
    - Fully unbundled sub-loops.
    - Shared sub-loops.
    - Co-location.
    - Associated facilities.

2. WUA and WBA were considered to fall within distinct product markets, due to differences in functionality and pricing. ComReg considered that access via alternative technologies such as cable and FWA were excluded from the WUA market on the grounds that they would be unlikely to pose a competitive constraint in the WUA market within the period of the review. Accordingly, ComReg formed the view that there was a distinct relevant market in Ireland for WUA (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services.

3. Having regard to the market definition and the associated SMP analysis carried out at that time, ComReg considered that Eircom had 100% share of the WUA market, and that this was unlikely to change over the lifetime of the review. The threat of competitive constraint posed by potential competition and countervailing power over the review period was considered to be low, due to high barriers to entry and expansion in the WUA market.

4. On that basis, Eircom was designated with SMP. ComReg imposed a number of obligations upon Eircom in relation to the provision of WUA. One such obligation imposed on Eircom was that of price control and cost orientation. Since the publication of the WUA Decision in June 2004, ComReg has been involved in the implementation of those obligations.[63]

Proposed amendment to the LLU pricing methodology

5. The WUA Decision set out the principles to guide the implementation by ComReg of a detailed price control methodology. ComReg notes that the proposal to amend the LLU pricing methodology does not constitute a material change to the price control and cost orientation obligation in the WUA Decision. Rather, the proposed change relates only

[62] Designation of SMP and Decision on Obligations- Market Analysis: Wholesale Unbundled Access (including shared access) to metallic loops and sub-loops. ComReg Decision D8/04, dated 15 June 2004.

[63] For example, on line share ComReg Document No. 04/111 and ComReg Document No. 05/22; and Consultation on the Rental price for Shared Access to the Unbundled Local Loop (ComReg Document No. 08/23).

to the methodology and implementation of the existing price control and cost orientation obligation established by ComReg in the WUA Decision. The proposed change therefore does not require amendment of the actual price control and cost orientation obligation established in the WUA Decision.

6. The proposed change to the pricing methodology is intended to better effect ComReg's regulatory objectives, which include the promotion of competition, by ensuring that there is no distortion or restriction of competition in the market and by encouraging efficient investment in infrastructure. The proposal is consistent with, and falls within, the scope of the existing obligation of price control and cost orientation.

Analysis of Wholesale Physical Network Infrastructure Access Market

7. ComReg is in the process of conducting a full analysis of the WPNIA market. This market was introduced by the European Commission in December 2007[64] as an updated and technology-neutral version of the WUA market. The updated WPNIA market is technology neutral, and is not limited to metallic loops and sub loops (as was the case in the previous WUA market). Therefore, the WUA market, defined in the WUA Decision, is contained within the broader WPNIA market. Accordingly, the final WPNIA market analysis decision will ultimately supersede the WUA decision which remains in force.

8. On 23 December 2008 ComReg published its Response to Consultation and Draft Decision for the WPNIA market analysis[65] (the "Response and Draft Decision document 08/104").

9. ComReg was of the preliminary view that Eircom still has SMP on the expanded WPNIA market, with a market share at or approaching 100%. Metallic loops still account for all but a very small number of access paths that fall within the WPNIA market. It is therefore reasonable to assume that, in the context of the existing WUA Decision that is solely based on metallic loops, Eircom continues to have a market share at or close to 100%.

10. ComReg's preliminary view as set out in the Response and Draft Decision document 08/104 is that the barriers to entry and expansion within the WPNIA market remain high, due to the high cost and lengthy timeframe associated with building a fixed broadband network. As a result, the competitive threat posed by potential competition remains limited. ComReg's preliminary view is that countervailing power in the WPNIA market also remains limited for the reasons set out in the Response and Draft Decision document 08/104.

11. ComReg's preliminary conclusion is that Eircom has SMP in the WPNIA market.

12. ComReg notified the European Commission of the proposed SMP designation in accordance with Regulation 20 of the Framework Regulations. In its response letter to ComReg, the European Commission approved ComReg's proposal in the Response

[64] EU 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.

[65] Market Review: Wholesale physical network infrastructure access (Market 4). Response to ComReg Document No. 08/41 and Draft Decision.

and Draft Decision document 08/104 to designate Eircom with SMP in the WPNIA market (foregoing the right to veto ComReg's draft decision). The European Commission invited ComReg to reconsider its treatment of fibre in defining the product market, but noted specifically that its invitation did not affect the regulatory outcome with respect to the SMP designation.

13. In view of its analysis of the WPNIA market, ComReg considers that:

- Countervailing power in the existing WUA market remains limited;
- Barriers to entry and expansion within the WUA market remain high;
- The threat posed by actual and potential competition remains limited;
- Eircom has a market share at or close to 100% in the existing WUA market; and
- Competition problems would be likely to occur in the WUA market in the absence of effective remedial obligations.

14. Based on the up-to-date analysis conducted by ComReg on the WPNIA market and, having regard to the subsequent approval of that preliminary view by the European Commission, ComReg is of the view that Eircom's existing SMP designation in the WUA market as set out in the WUA Decision is an appropriate instrument on which to amend the LLU pricing model.

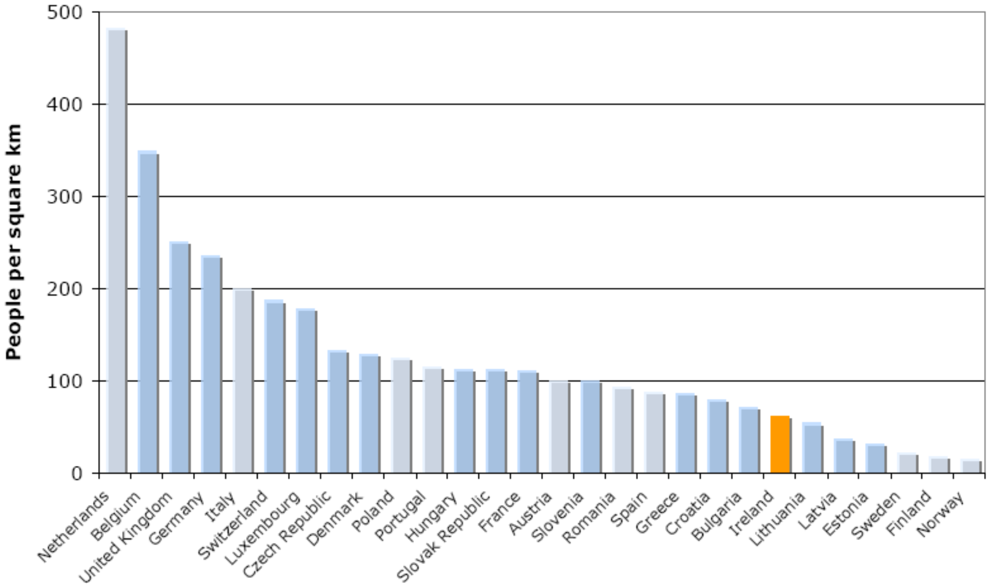
Conclusion

15. This appendix note assesses whether the competitive conditions that are present within the WUA market justify the continued imposition of a price control obligation on Eircom.

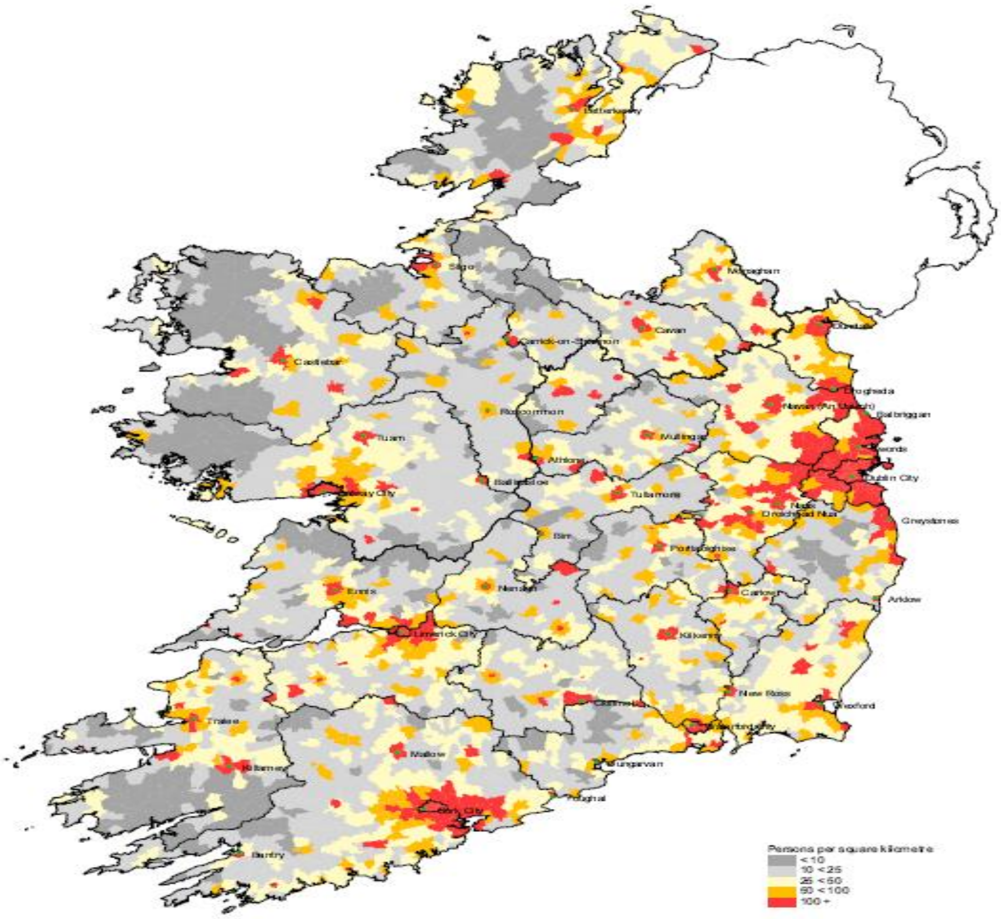
16. ComReg considers that the competitive conditions in the WUA market, as observed by ComReg and described in the WUA Decision, remain present at this time. As such, the decision to amend the pricing methodology remains equally valid. ComReg therefore considers that the continued imposition of the price control and cost orientation obligation is consistent with ComReg's objectives as set out in the Access Regulations and that the price control and cost orientation obligation should remain in place.

Appendix C: Population Density

Population density in Europe, 2007



Source: World Development Indicators, 2007



Appendix D: Background to the Modelling Exercise

1. Interaction with Eircom

TERA Consultants ("TERA") were engaged, by ComReg, in October 2007, to develop an independent efficient operator BU-LRAIC model of the copper access network in Ireland and to assist in determining a maximum LLU and SLU monthly rental charges. ComReg Document No. 09/39 also highlighted that a number of data requests were submitted to the various fixed line operators. Based on the granularity of the data and the direct relevance of the data provided by Eircom the cost data and engineering rules provided by them were used as a starting point for the BU-LRAIC cost model exercise. However, a number of adjustments were also made to reflect current market costs and the engineering rules of an efficient operator. A significant number of workshops were also held between Eircom and ComReg during 2008 and 2009.

As stated in ComReg Document No. 09/39, a significant amount of the information obtained in relation to this BU-LRAIC cost modelling exercise is commercially sensitive data. ComReg is not in a position to disclose confidential data. All issues raised by Eircom as part of its model review were further considered by ComReg and, where necessary, the model was amended. ComReg is of the view that the model is now fit for purpose and is sufficiently robust to allow ComReg to set a revised monthly LLU and SLU cost per line.

2. Site Visits

ComReg and Eircom carried out a number of initial site visits in order for ComReg to gain an understanding of how the current copper access network is deployed in Ireland. The selected sites were chosen by Eircom as being representative of the following characteristics:

- A rural/small urban community
- A large urban community containing both housing and commercial/industrial buildings
- A new housing estate.

In parallel with the site visits, ComReg and Eircom reviewed maps of the local access infrastructure, walked parts of the local network and discussed such features as deployment of chambers, rules governing underground and overhead infrastructure and final drops within the different sites.

Given the high level of one-off housing in Ireland, ComReg undertook a number of short site visits to more rural areas of the network in order to gain an understanding of how access infrastructure is deployed in these areas. These visits allowed ComReg to form a view that where there were less than 50 buildings in a housing area, the deployment of infrastructure overhead was the normal practice.

3. Reality Check Exercise

In order to ensure the robustness of the BU-LRAIC cost model, it was agreed between ComReg and Eircom to compare the copper access network infrastructure as it is currently deployed by Eircom with the BU-LRAIC cost model to ensure that the model was relatively consistent with the infrastructure in place on the ground. This exercise was carried out at a national level and also at a local level for a number of selected sites. Due to issues of commercial sensitivity it is not possible to elaborate on the detail of this exercise. However, ComReg is satisfied that the reconciliation performed at both a national and local level is reasonable. Where differences have been noted between what would actually have been built against what a desk top model would build, these differences have been discussed between Eircom and ComReg and ComReg is of the view that these differences have been explained and are understood.

4. Geo-marketing

Geocible was engaged to map the roads/streets and buildings of Ireland for the purposes of building a BU-LRAIC model. Geo-marketing uses digital maps to determine the various roads and buildings throughout the country. The digital mapping exercise was based on Navteq[66] maps. In addition, Geocible also used An Post's GeoDirectory[67], which includes the geo-coded database of the position of all of the buildings in Ireland.

The aim of the mapping exercise was to simulate urban and rural areas which reflected the main population centres in Ireland and also to simulate isolated rural communities. ComReg is of the view that this exercise should ensure the deployment of an optimised network, as the engineering rules are different in urban and rural areas.

Geocible used a combination of Navteq data and an extract from An Post's geo-directory in mapping the roads/streets and buildings of Ireland. The following points were noted:

- Navteq data provides a highly detailed representation of a country's road/street network. The Navteq data was used to map each of the roads in Ireland.
- The geo-directory contains a list of all of the postal addresses (residential and commercial) in Ireland. An extract of the geo-directory was considered sufficient for the BU-LRAIC cost model exercise.
- By combining the two sources, Geocible linked the housing data with the road/street infrastructure. In essence, the telecoms infrastructure for each building is deployed along the road/street network.

Subsequently, Geocible created the "housing areas" and "isolated houses" for the BU-LRAIC cost model. Housing areas represent concentrations of residential and commercial buildings (as extracted from the geo-directory). Some of the housing areas can be quite small and centred around a small village. Others, are quite large, and can include a number of different towns and villages. Housing areas may contain multiple Main Distribution Frames ("MDFs"). The access model is constructed to

[66] www.navteq.com

[67] www.geodirectory.ie

deploy the network within a housing area to its nearest MDF or MDFs. It deploys infrastructure to an MDF in the most efficient manner, with trenches (and overhead or underground final drops). Isolated houses are primarily "one off" houses or very small clusters of houses. Most of these have been located by Geocible in the rural parts of Ireland. Isolated houses have to be connected to their nearest MDFs and the access model is constructed to deploy these connections in the most efficient manner possible, mainly with overhead infrastructure.

Having identified the developed housing areas and the isolated houses, Geocible assessed the length of roads and types of roads associated with each housing area or isolated house. The definition of road types was produced by Navteq[68]. The lengths of road were used within the access model to deploy an optimised network.

ComReg is of the view that the creation of housing areas and the calculation of length of roads and numbers of buildings is a suitable method to be used in assessing the deployment of infrastructure. A number of bilateral discussions were held between ComReg and Eircom in this regard. ComReg is satisfied that the basis used provides a reasonable estimation of the length of roads and the number of buildings throughout the country.

5. Specification Document

In the modelling exercise a detailed "specification document" was prepared by ComReg and TERA discussing how the BU-LRAIC model was constructed. The main sections in the specification document are as follows:

- Geomarketing
- Modelling of an optimised network
- Engineering Rules
- Unit prices
- Costing data.

The specification document was shared with Eircom, in confidence, prior to the programming of the model. A coding document, setting out the code used for the programming of the model, was also shared with Eircom (in confidence). Both, the specification document and coding document have been the subject of detailed discussion with Eircom since 2008. ComReg has considered all comments made by Eircom in relation to these documents and where appropriate, ComReg has amended the documents to take account of Eircom's views.

[68] http://developer.navteq.com/site/global/dev_resources/155_technical_library/core_map/10_coremap.jsp