Assessment of Eir's USO funding application – Direct net cost 2010-2011 – Redacted version

ComReg

FINAL

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1. Abbreviations and Glossary

1.1. Abbreviations

BIP	Business IP
CAM	Copper Access Model
CAPEX	Capital Expenditure
CPE	Customer Premises Equipment
CPS	Carrier Pre-Selection
CVR	Cost-Volume Relationship
DSLAM	Digital Subscriber Line Access Multiplexer
DSL-B	Digital Subscriber Line-Bitstream
DSL-R	Digital Subscriber Line-Retail
FRA	Fractional Rate Access
FTTC	Fibre To The Cabinet
IP	Internet Protocol
IPC	Provisioning Control
ISDN	Integrated Services Digital Network
LFI	Line Fault Index
LLU	Local Loop Unbundling
MDF	Main Distribution Frame
NGN	Next Generation Network
OAO	Other Authorised Operators
OH	Overhead
OPEX	Operating Expenditure
POTS	Plain Old Telephone Service

PPC	Partial Private Circuits
PRA	Primary Rate Access
PSTN	Public Switched Telephone Network
RAT	Reasonable Access Threshold
SABB	Stand-Alone Broadband
SANS	Storage Area Network
SB-WLR	Single Billing - Wholesale Line Rental
STD	Subscriber Trunk Dialling
TD-LRIC	Top Down Long Run Incremental Cost
UAN	Universal Account Numbers
UG	Underground
ULMP	Unbundled Local Metallic Path
USO	Universal Service Obligations
USP	Universal Service Provider
WLR	Wholesale Line Rental
WSEA	Wholesale Symmetrical Ethernet Access

1.2. Glossary of key terms (A to Z)[1]

"***calculated direct net cost***" means the final direct net cost figure that, in TERA's view and following TERA's assessment, should be allowed for the purposes of this application. The term may be used to describe either the calculated direct net cost for an individual USO model, or the total calculated direct net cost, as the context requires.

"***direct net cost"*** of USO is the difference between the avoidable costs attributable to the provision of the USO (both direct and indirect), minus revenues (both direct and indirect) attributable to the provision of the USO, before the deduction of intangible benefits which accrue to the USP by virtue of being the USP.

[1] Save where specified above, terms and abbreviations used by TERA in this report have the same meaning as those listed in the Glossary of D04/11.

"***final 2010/11 USO funding application***" is eir's revised USO funding application for the financial year 2010/11 submitted to ComReg in July 2016.

"***Frontier Report"*** is the final report prepared by Frontier outlining eir's calculations and methodology for the direct net cost for the financial year 2010/11, together with the Frontier report outlining additional changes to the USO Model, as submitted to ComReg in July 2016.

"***Frontier Supplemental Report***" is the report prepared by Frontier Economics, "Response to ComReg questions on Eir's 2010/11 USO funding applications, 'A report prepared for Eir', February 2015".

"***initial 2010/11 USO funding application***" is eir's initial USO funding application for the financial year 2010/11, submitted to ComReg in September 2014.

"**MDF area**" means a geographic area as described by the Market Distribution Frame map.

"***net cost"*** is calculated as the difference between the 'direct net cost' and the intangible benefits which accrue to the USP, by virtue of being the USP.

"***USO Model***" refers to the USO direct net cost model underpinning eir's USO funding applications to ComReg as a whole, including all calculations, data, spreadsheets, the model summary and the individual net cost models (Area, Customer, Payphone, Directories, and Disabled Users). These individual direct net cost models may be referred to cumulatively as "USO Models".

2. Executive summary

TERA Consultants ("TERA") were engaged by ComReg to undertake an assessment of the direct net cost element of Eircom Limited's ("eir's") USO funding application for the financial year 2010/11 and to assess its adherence with the direct net cost calculation principles and methodology set out in ComReg Decision D04/11[2].

TERA's assessment of eir's final 2010/11 USO funding application, including any required adjustments to the USO model is that the calculated direct net cost is €9.07M. This is based on the figures within eir's USO Model submitted in July 2016, adjusted by TERA where necessary (see further below).

2.1. Background

- eir's application for USO funding for the financial year 2010/11 was initially submitted in September 2014, including the USO Model and a report prepared by Frontier Economics ("Frontier") outlining eir's methodology and calculations for the direct net cost. This entire application is referred to as eir's ***"initial 2010/11 USO funding application"***.
- During 2015 and 2016, there was a process of engagement between eir and ComReg in relation to the USO Model and TERA advised ComReg on certain clarifications required from eir. Frontier assisted eir to respond to the clarifications and following a workshop with eir, Frontier, TERA and ComReg in February 2015, eir submitted a supplemental report prepared by Frontier containing responses to ComReg's questions (the "***Frontier Supplemental Report***").
- As a result of this clarifications process, eir made certain adjustments to its USO model and ultimately submitted a revised USO funding application to ComReg in July 2016, with a direct net cost claim reduced by approximately €1.9M, to €9.50M. This revised application is referred to as eir's ***"final 2010/11 USO funding application***."
- eir's final 2010/11 USO funding application includes the USO Model and two Frontier Reports submitted in July 2016; a general Frontier report outlining eir's methodology and calculations for the direct net cost and a separate Frontier report describing all USO Model changes since eir's initial 2010/11 USO funding application (these Frontier reports are referred to jointly as the "***Frontier Report July 2016***").

[2] Decision D04/11, 'Decision on the costing of universal service obligations: Principles and Methodologies', 31 May 2011 (hereinafter "D04/11")

2.2. TERA's assessment

TERA has reviewed PwC's Agreed Upon Procedures ("AUP") Report[3], and all aspects of eir's initial 2010/11 USO funding application and its final 2010/11 USO funding application. This involved a detailed review by TERA of the data sources, methodology and calculations in eir's USO model. The details of TERA's assessment process are set out in chapter 3, Methodological Overview.

The direct net cost figures claimed by eir under each of the individual USO models are summarised in Table 1 below. eir has also claimed an amount for consultancy fees.

Table 1 2010/2011 - USO Direct Net Cost

Net cost component, €	2010/2011 Initial eir application	2010/2011 Final eir application	2010/2011 Final assessment as validated by TERA
Area Model	539 817	183 793	183 793
Customer Model	10 180 791	8 643 518	8 643 518
Payphone Model	209 554	191 831	185 310
Directories Model	-	-	-
Disabled Services Model	58 935	58 935	58 935
Consultancy fees	419 797	419 797	-
Total direct net cost	11 408 894	9 497 874	9 071 556

Source: USO Model Summary, July 2016

As a result of the process of engagement between eir and ComReg in relation to eir's applications, eir implemented two main methodological changes to its final 2010/11 USO funding application as follows:

- eir has applied the percentage allocations of each asset type (overhead or underground) from the 2009 bottom-up Copper Access Model[4] (the "2009 CAM") to more accurately reflect the actual allocation of Overhead CAPEX cost, depending on the type of line.
- eir has made a methodological change to the allocation of repair access costs based on a two-step approach, using both (i) the number of staff; and (ii) LFI, as allocation keys, which TERA considers to be more in line with the 2009 CAM.

Table 1 illustrates that in eir's initial 2010/11 USO funding application it claimed a direct net cost of €11.41M. Following the above adjustments and a series of other

[3] PwC – "Report of factual findings in connection with eircom's application for funding in respect of the universal service obligation for the year ended 30 June 2011 ("the USO Funding Application") in compliance with D04/11 Decision 22".

[4] A bottom-up model developed by TERA for ComReg in 2009 – used to determine wholesale access prices. A revised version of the CAM was developed in 2016, it is used only as a cross-check as part of TERA's assessment of net cost but is not used in USO models for historical consistency

adjustments to the USO Models, eir's final 2010/11 USO funding application claimed a reduced direct net cost of €9.50M.

2.3. Calculated direct net cost

TERA's assessment concludes that the calculated direct net cost is approximately €0.4M lower than the final direct net cost figure claimed by eir, at **€9.07M**.TERA's assessment can be broken down as follows:

1. **The calculated direct net cost of the Area Model is €183,793.** The Area Model demonstrates that only ✂ of MDF areas[5] appear to be entirely uneconomic while ✂ of MDF's appear to be entirely economic (on a revenue less costs basis). ✂ of MDFs contain *some level* of uneconomic customers[6] but TERA notes that the number of uneconomic customers as a percentage of total customers in each economic MDF is low.
2. **The calculated direct net cost of the Customer Model (Uneconomic customers in economic areas) is €8,643,518.** This constitutes 95% of the total direct net cost, which highlights the need for particular focus on the Customer Model and its methodological approach.
3. **The calculated direct net cost of the Payphone Model is €185,310.** TERA made an adjustment to the Payphone Model in eir's final 2010-11 USO funding application to include advertisement revenues in the direct net cost estimate.
4. **The calculated direct net cost of the Directories Model is ✂, and as this is profitable it is reflected as zero.**
5. **The calculated direct net cost of the Disabled Users' Services Model is €58,935.**

The calculated direct net cost does not include the cost of consultancy fees claimed by eir (€0.42M). This is based on the reasoning and principles set out in ComReg's Decision D04/11.

TERA's assessment is that:

- **the calculated direct net cost is €9.07M;**
- **the calculation of the calculated direct net cost is accurate; and**
- **the calculations and methodology for the calculated direct net cost are in accordance with D04/11.**

[5] From a base of 1,064 MDFs

[6] MDF is either entirely uneconomic or some of the customers in the MDF are uneconomic.

2.4. Outline structure of TERA's report

The remainder of this report is structured as follows:

- **Section 3** - Methodological overview
- **Section 4** - Assessment of the treatment of revenue data, including:
  - Assessing which categories of revenues are relevant and how revenues are allocated.
- **Section 5** - Assessment of the treatment of costs, including:
  - Assessing which categories of costs are relevant, how they are allocated, which costs are avoidable and which are distance sensitive.
- **Sections 6 – 10** - Assessment of the methodology and review of the calculation of the direct net cost in each part of the USO Model as follows:
  - Area Model – uneconomic MDF areas
  - Customer Model – uneconomic customers in economic MDF areas
  - Payphone Model – uneconomic payphones
  - Directories Model – directory services
  - Disabled Users' Services Model – services to disabled users
- **Section 11:** Assessment of any overlaps between estimates of the direct net costs in the USO Model and the intangible benefits model (Enhanced brand recognition, Ubiquity, Life cycle benefits, Marketing benefits).

3. Methodological overview

This report summarises TERA's assessment of eir's final 2010/11 USO funding application. It includes a description of all tasks performed by TERA for the assessment of eir's methodology and subsequent calculation of the direct net cost of each individual USO model, and a summary of TERA's analysis of potential overlaps with the intangible benefits model.

As part of TERA's assessment, TERA reviewed eir's initial 2010/11 USO funding application and its final 2010/11 USO funding application for consistency with the principles, methodologies and calculations for the direct net cost as set out in D04/11, in particular with Decisions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 25, 27, 29 and 36 of D04/11 (see Appendix 1, Section 12 of this report for all Decisions 1 to 36).[7] TERA's assessment followed the below general approach:

- **Step 1** - Review of the Agreed Upon Procedures ("AUP") Report[8] provided by PwC as per Decision 22 of D04/11. The AUP report summarises the procedures and checks performed by PwC on eir's cost and revenue input figures, including a comparison of the values in the USO Model input sheets back to eir's source workbooks and a reconciliation of the USO Model to the HCA regulatory accounts. TERA confirmed that the scope of the AUP report covers the correct USO Model inputs and contains the appropriate level of revenue and cost detail. This also involved a detailed review by TERA of the data sources, methodology and calculations in eir's USO model.

- **Step 2** - Gained an understanding of eir's approach to, and calculation of, the foregone revenue and avoidable operational expenditure ("OPEX") and capital expenditure ("CAPEX") costs data. In doing so, TERA had regard to the origination, interpretation, and use of call volume data, and also taking account of geographic allocation and efficiency and in particular, Decisions 1 to 9 of D04/11.

- **Step 3** - Assessment of eir's methodology and subsequent calculation of the direct net cost of each part of the USO model, in terms of ensuring that data is classified correctly, processing revenue and cost data, estimating the calculated direct net costs in uneconomic areas and of uneconomic customers in economic areas, as well as the calculated direct net cost of other USO services (Payphones, Directories etc.). TERA considered whether previous 2009/10 TERA recommendations, following TERA's assessment of eir's 2009/10 USO funding

[7] As a number of the individual Decisions within D04/11 are either matters for ComReg or are of a general nature (such as those relating to the format, timing or supporting documentation required for the USO funding application), while TERA was cognisant of such decisions, they are not directly analysed in this report.

[8] PwC – "Report of factual findings in connection with eircom's application for funding in respect of the universal service obligation for the year ended 30 June 2011 ("the USO Funding Application") in compliance with D04/11 Decision 22".

application, are taken into account and, where feasible, implemented. The Decisions relevant to the particular USO models are:

- Area Model: Decision 11, Decision 12.
- Customer Model: Decision 10, Decision 12, Decision 13, Decision 14 and Decision 25.
- Payphone Model: Decision 16 and Decision 27.
- Directories Model: Decision 17.
- Services for Disabled Users Model: Decision 18.

Two versions of ComReg's copper access network cost model ("CAM") have been used during the assessment to compare changes in eir's final USO model (as outlined in section 7.2.3) against eir's initial application:

- The 2009 CAM: This is the recommended version to be used in all calculations of the 2010-11 direct net cost within the USO Model, for historical consistency (the 2009 CAM was in in place at the time eir incurred the costs and revenues that are the subject of this application.

- The revised version of the CAM developed in 2016 (the "2016 CAM")[9]: This version is used for all TERA's cross checks of geographical cost allocations as it better reflects the real costs incurred, and is based on the most current information provided by eir.

- As part of the Step 3 assessment, the 2016 CAM is used by TERA as a cross check to ensure that there is consistency in the application of network design rules. (i.e. that the same design rules are consistently applied, to avoid cherry picking or modelling of less favourable approaches).

- **Step 4** - TERA analysed and identified any potential overlaps with and double-counting between the USO direct net cost model and the intangible benefits model as per Decision 36. TERA considered whether eir's final 2010/11 USO funding application is acceptable overall from a technical standpoint (e.g. Technological choices, dimensioning and planning, etc.) and economic perspective (e.g. cost allocation choices, cost standards, etc.).

Furthermore, once all methodological changes were reviewed, in order to assess any input based changes and to quantify their impact on the final calculated direct net cost, TERA compared the final 2010/2011 direct net cost results with the 2009/2010 direct net cost results by comparing both the main inputs (revenues and costs incurred) and the total net cost calculated by the two models. It should be noted that any references to 2009/10 direct net cost results are used for comparison purposes only.

[9] The Revised CAM published in 2016 - a bottom up model developed by TERA for ComReg - used to determine wholesale access prices

TERA's key conclusions are summarised within text boxes throughout of this report.

4. Revenue data

4.1. Section Overview

Revenue data consists of both direct and indirect revenues as outlined in D04/11, Decision 2, Decision 3, Decision 4, Decision 5, Decision 6 and Decision 7. In summary:

- Decision 2 sets out the basis for calculating avoidable costs relevant to the calculation of the direct net cost
- Decision 3 sets out the basis for calculating USO revenuesrelated to these costs
- Decisions 4 and 5 set out the scope of direct revenues to be included in the USO models
- Decision 6 sets out the scope of indirect revenues to be included in the USO models
- Decision 7 sets out the basis upon which the USP may use an alternative approach for the calculation of indirect revenues.

The full text of these decisions is listed below (and in Appendix 1, Section 11 of this report):

> ***Decision 2:*** *USO net costs shall be calculated on the basis of "all" capital costs and "all" operating costs that could be avoided on a HCA basis, as if the provision of services to uneconomic customers by a commercial operator was not required under a USO. It is only the portion of costs, both capital and operational expenditure for the given financial year, that can be directly attributed to the USO service (i.e. the service activity creates the cost) and which could have been avoided without the USO, which are included in the net cost calculation.*

> ***Decision 3:*** *USO revenues shall be calculated on the basis of both the direct and indirect revenues that an operator would forego as a result of ceasing to provide services to uneconomic customers.*

> ***Decision 4:*** *Direct revenues shall include those revenues which are directly invoiced to a customer for the services provided directly by the USP. They include:*
>
> *• One-off connection charges: where the revenue should be allocated over the expected life of the customer. In circumstances where a line is permanently disconnected, the remaining unallocated one-off connection charges should be allocated to that year of disconnection;*
>
> *• Revenues associated with access (e.g. line rental);*
>
> *• Calls (e.g. local, national, mobile, international, directory enquiries ("DQ") and premium rate services); and*
>
> *• Complementary services, such as, broadband services.*

> ***Decision 5:*** *Direct revenues shall include those revenues from an OAO (who is indirectly providing the service to the customer) using the USP's wholesale services and include, amongst other things:*
>
> *• Wholesale access (single billing wholesale line rental ("SB-WLR");*
>
> *• Wholesale calls; and*
>
> *• Complementary wholesale services, such as Bitstream and Local Loop Unbundling ("LLU") etc.*

Decision 6: *Indirect revenues shall include those revenues which are not directly invoiced to a customer for the services provided directly by the USP. They include:*

• Wholesale interconnection revenues: fixed termination and transit services as a result of inbound calls from another fixed / mobile networks, where an OAO is invoiced for terminating and transiting a call on the USP network;

• Non-geographic numbers (e.g. 1800, 1850, 11811 and 1890 numbers);

• Economic USO customer calls to an uneconomic customer: firstly, the revenue of the economic customers' calls to uneconomic customers shall be allocated to the uneconomic customer. If the uneconomic customer is now economic, as result of the allocation, then a second stage is required to ensure that this treatment does not make the previously economic customer into an uneconomic customer as a result. If as a result of this second stage the economic customer becomes uneconomic, then it is only that portion of revenue which the economic customer can spare without making themselves uneconomic that should be allocated;

• Leased Lines: where initially all revenues associated with the leased line are allocated to the uneconomic line. If the uneconomic point is now economic, as a result of the allocation, then a second stage is required to ensure that this treatment does not make the previously economic point into an uneconomic point as a result. If as a result of this second stage the economic point becomes uneconomic, then it is only that portion of revenue which the economic point can spare without making themselves uneconomic should be allocated; and

• Replacement calls: where a net cost exists, replacement calls shall be estimated and added to the net cost calculation (but only in circumstances where "uneconomic" areas or customers have been firstly identified as commercially uneconomic).

Decision 7: *Where it is clearly demonstrated that due to a lack of information beyond the control of the USP, that it is not practicable for indirect revenues to be calculated in accordance with Decision No. 6, the USP may use an alternative approach, provided that it is properly supported with reasonable assumptions.*

The revenue data is sourced from eir's corporate data warehouse and includes revenues from connections, rentals, calls and other revenues.

This section assesses the treatment of the revenue data in terms of which categories of revenues are relevant for inclusion in /exclusion from the direct net cost calculation and how they are allocated (what share of total revenues is to be attributed to a specific MDF or customer, and in what time perspective) .It is structured as follows:

- Revenue scope
  - Excluded revenue data
  - Included revenue data
- Revenue data allocation
  - Allocation of revenues to MDFs
  - Allocation of one-off revenues

- Methodological change - Working line definition
- Conclusion

4.2. Revenue Scope

4.2.1. Excluded Revenue Data

eir's initial 2010/11 USO funding application excluded certain revenues from the scope of the direct net cost estimation for a number of different reasons (e.g. the corresponding services are not based on the copper network; the revenues are not intrinsic to any specific MDF; unavailable data; immaterial value; or revenue that is not generated from eir lines).

TERA notes that eir has made several changes to the revenue data treatment aimed at improving the net cost model since its 2009/10 USO funding application. These changes partially explain the changes in the model results.

TERA has also checked the reasonableness of eir's exclusion of each of the revenue categories.

TERA, in eir's 2009/10 USO funding application, considered the exclusion criteria for 3 of 28 excluded revenue elements (National Freefone, International Freefone and Interconnect Links) were unclear. TERA considered that it was acceptable for the 2009/10 USO funding application as these revenue elements constituted only ✂of the total revenue and possible impact is small on the net cost would have been marginal, but sought further clarification from eir regarding its reasoning for future submissions. This further rationale was provided in eir's initial 2010/11 USO funding application.

In relation to the first two, National Freefone and International Freefone services, the services are first described below and then eir's rationale for their exclusion is set out:

1. National Freefone

National Freefone is a short number service (1800, 1850 or 1890 numbers) that allows special pricing, whereby the receiving party fully or partially pays for the cost of the call. This National Freefone service operates with calls from eir's network, from a fixed-line OAO[10] or from a mobile operator.

2. International Freefone

International Freefone service allows calls from abroad. International Freefone revenues correspond to charges paid by hosted retail operators of freefone numbers, including one-off connection charges, fixed access charges and traffic based charges.

eir's rationale for excluding part of the national and International Freefone revenues is as follows:

- Part of the Freefone (National and International) revenues may be lost if the MDF where a Freefone call is terminated is disconnected. National Freefone

[10] Other Authorised Operator

revenues may also decrease, if the MDF supporting the associated call origination is disconnected.

- To take account of this eir has checked whether the MDFs where freefone calls (National and International) are terminated, are generally MDF's classed as large economic exchanges, or whether they are uneconomic MDF's (which absent the USO, eir could choose to disconnect). To test this, a sample of 750 freefone calls (terminating on eir's fixed network) were checked. eir concluded that ✂ of the corresponding MDFs belonged to the top quartile[11] of MDFs, in terms of the number of lines[12].

eir did not exclude all of the Freefone revenues – it only excluded the connection and fixed access revenues (because they are located in large MDFs that were proven to be less likely unprofitable).

- eir did not exclude other traffic-based revenues associated with calls originating/terminating on eir's network.

TERA's view is that eir has justified its exclusion of parts of the National and International freephone revenues from the USO models. Based on eir's sampling, freefone revenues appear unlikely to be significantly impacted if eir was to disconnect an uneconomic MDF as the bulk of freephone revenues are more closely linked to large economic MDF's, which absent the USO, eir would not choose to remove from its network.

TERA concludes that the revenues categories (not including traffic revenues):

- **International Freefone;**
- **National Freefone and**

were excluded on reasonable grounds for the purpose of the USO direct net cost calculation, as only revenues related to large MDFs (that are less likely to be uneconomic) were excluded.

3. Interconnect Links

Interconnect Links are high capacity transport links, interconnecting eir with carrier pre-select operators, largest of whom is BT. eir explain that all the OAOs, except BT, are

[11] The top quartile refers to MDFs ranked by size (based on the number of lines). In this instance, ✂ of Freephone calls are terminating within the to 25% MDFs within eir's network.

[12] Frontier supplemental report.

interconnected at a high level in the network while a significant proportion of BT's interconnection points are at tertiary exchange level.

eir considers that much of this traffic originates or terminates with mobile operators, and therefore it is not relevant to the USO revenue data. eir considers it is unlikely that Interconnect MDFs (supporting primary, tandem and double tandem interconnection) are located within uneconomic areas.

The demand for high-capacity links is unlikely to be impacted by the disconnection of some areas and/or end users disconnections. As a result only a significant change in the volume of traffic will result in a reduction in the number of interconnect voice circuits.

TERA concludes that the revenues category Interconnect links was excluded on reasonable grounds for the purpose of the USO direct net cost calculation, as they are only linked to large MDFs that are less likely to be uneconomic.

TERA also considered the exclusion criteria for the remaining 25 excluded revenue elements. These excluded revenue elements may be summarised into the following four categories; non-USO services; large MDF based services; non MDF specific services; competitive services. As the rationale for the exclusion of these four revenues categories was unclear in eir's initial 2010/11 USO funding application, TERA sought further clarification from eir regarding its reasoning, which was provided in eir's final 2010/11 USO funding application.

eir's rationale is set out in more detail below:

1. Non USO services

eir consider it is possible to exclude the services that are not a part of USO on the condition that both the associated eir costs and eir revenues are excluded.

Fibre leased lines are not a part of the USO, therefore eir revenues and corresponding fibre costs and civil works are excluded.

'All ISS[13] revenue' are associated to access to Internet and are therefore excluded.

2. Large MDF based services

eir considers that large MDFs are likely to be economic and the exclusion of revenue and costs linked to these MDFs does not change the resulting net cost. Therefore, the following services linked to large MDFs are excluded from the net cost calculation:

- International leased lines: as they are linked to large urban MDFs and therefore unlikely to be uneconomic. TERA notes that this equals ✂ in excluded revenues.

[13] ISS: Internet Supply Services: Value added internet dependent – not intrinsic at a customer/exchange level- revenues not dependent on the customer base. As opposed to conveyance of dial-up internet traffic.

- Ancillary products: this category includes mainly wholesale revenues from access to Eir 1850/90, access to OAO (Other Authorised Operators) 1800 numbers and access to Universal Access numbers. These calls do not originate in any particular MDF, and called numbers are likely to be located in larger MDFs. TERA notes that this equals ✂ in excluded revenues.
- 'Co-location' services: as their revenues could not be easily allocated to MDFs and in practice are located in larger, economic MDFs. TERA notes that this equals ✂ in excluded revenues.
- Property services: their revenues are only associated with office buildings and some large Dublin MDFs. TERA notes that this equals ✂ in excluded revenues.

3. Non MDF specific services

eir considers that some categories of eir's services are not associated with any particular MDF. The corresponding revenues would not therefore change if an uneconomic MDF is removed.

Repayable works orders and wholesale managed services (relating to white label services) are not associated with any specific MDF and have therefore been excluded.

4. Competitive services

eir considers that revenue from apparatus supply is the revenue associated with corporate equipment, which is provided in competitive conditions, it is not a part of USO and therefore is excluded.

In relation to the above four revenue categories TERA concludes that it is reasonable to exclude these revenues based on the following rationale:

(1) As the service is not within the scope of USO (and is provided by eir on a commercial basis); or

(2) As the service is highly likely to be profitable (and as a consequence would not lead to any change in the net cost calculation).

For the above reasons TERA considers that eir's rationale for exclusion of these 4 revenue categories is reasonable and that they can be excluded from the USO model.

4.2.2. Included Revenue Data

Eir's initial 2010/2011 USO funding application omitted CPE[14] revenues. This was corrected in eir's final 2010/2011 USO funding application, and the relevant CPE revenue has now been incorporated into the USO model.

TERA agrees with this correction. It is appropriate to include revenues associated with CPE as the corresponding cost is already included, in accordance with Decision 5 of D04/11.

4.3. Revenue data allocation

4.3.1. Allocation of revenues to MDFs

In order to allocate revenues to MDFs eir, in its initial and final 2010/11 USO funding application, used a sample. Data for July and August 2010 was unavailable, having been deleted by eir in accordance with its 3 month data retention policy. This missing data corresponded to ✂ of annual revenues and costs for the USO services.

Of relevance to this are Decision 7 of D04/11, as set out above, and Decision 29 of D04/11, which states:

Decision 29: *Sampling may be used for certain aspects of the modelling of net cost, for example the assumptions driving the size of replacement calls. Where sampling is used, samples must be sufficiently representative of the population being sampled. Where applicable, any application of a sampling methodology by the USP must accord with ComReg Decision D07/10.*

eir has studied the possible seasonal effect of its data being unavailable by using the available data for July and August for the two subsequent years (2011/2012 and 2012/2013) and to establish whether the exclusion of July and August data would lead to any distortion. The results showed no distortion in 2011/12 and 2012/13 and eir therefore concluded that it is unlikely there would be any distortion in 2010/2011.

TERA considers, in accordance with Decision 7 and Decision 29, that:

(1) since the full year data for the financial period 2010/2011 was not available; and,

(2) since the unavailable data concerns only a small portion of overall relevant revenues;

(3) the impact is likely to be minimal, and the sampling allocation method is therefore deemed a reasonable approach.

[14] Customer Premises Equipment

4.3.2. Allocation of one-off revenues

Decision 4 sets out the scope of direct revenues to be included in the USO models:

> ***Decision 4:*** *Direct revenues shall include those revenues which are directly invoiced to a customer for the services provided directly by the USP. They include:*
>
> *• One-off connection charges: where the revenue should be allocated over the expected life of the customer. In circumstances where a line is permanently disconnected, the remaining unallocated one-off connection charges should be allocated to that year of disconnection;*
>
> *• Revenues associated with access (e.g. line rental);*
>
> *• Calls (e.g. local, national, mobile, international, directory enquiries ("DQ") and premium rate services); and*
>
> *• Complementary services, such as, broadband services.*

In accordance with Decision 4, eir, in its final 2010/11 USO funding application allocated all the one-off revenue categories to the year in which they were incurred[15], except PSTN connections which were recognised in the same period as the initial connection, without amortization (see Table 2). The PSTN connection charges are offset by the corresponding costs, which are treated in a similar manner. eir explain that the margin of the PSTN connection service is close to zero.

Table 2. Time allocation of one-off revenues

One-off revenue category	TERA's 2010/2011 assessment
RAT connection revenues	Amortised over customer lifetime[16] in the Area Model
PSTN connections	Not amortised
Other one-off revenues	Amortised over customer lifetime

Source: TERA analysis

eir states that all the connection revenues (excluding RAT and PSTN) are already amortised within the regulatory accounts, over expected customer lifetime[17]. Thus regulatory amortisation is already incorporated within the USO model input data.

RAT connection revenues are not amortised within the regulatory accounts. The RAT connection revenues are however amortised within the Area Model, over a ✂ lifetime of a customer. The PSTN connection cost was not included in the amortisation. As the treatment for costs is similar to the treatment of revenues, this approach is acceptable.

[15] Frontier economics. Frontier report - 2010/11. A Report Prepared for Eir. July 2016, page 17

[16] Not amortised in regulatory accounts but is amortised in Area Model over a ✂ customer lifetime.

[17] Frontier supplemental report., Page 8

TERA considers that this treatment of one off revenues is acceptable and in line with Decision 4 of D04/11.

4.3.3. Methodological Change - working line definition

eir has made several changes to the definition of working lines in its final 2010/11 USO funding application compared to the initial application. eir provided the following rationale for these changes:

- SABB[18] and supplementary service lines categories were added in the physical line count. This change does not impact the final direct net cost for 2010/2011, as no SABB lines were deployed in 2010/11 but TERA accepts the model change may be relevant to future net cost assessments.
- Particular categories of lines were either included or excluded from the USO model to ensure that the model only includes lines for which the associated revenues and costs are included. These changes are summarized in the table below:

Table 3. Working Line Definition

Service	Inclusion	Exclusion
PSTN	• ISDN PRA/FRA lines (over fibre) • POTS-based retail FTTC lines	WiFiHub lines
WLR	WLR ISDN PRA/FRA lines (over fibre)	-
Leased Lines	PPC End User Links (>155mb)	International Private Circuits NGN WSEA and NGN (multi-service access) retail lines Fibre-based National Private Circuits (2Mb)
Supplementary	National Ethernet Lines	Mobile Backhaul lines Fibre-based Business IP lines

Source: eir "Additional model changes for eir's re-submitted USO funding applications for 2010/11 to 2014/15, dated July 2016"

The line length distribution has been updated accordingly: the length of lines that are no longer included in the working lines definition were excluded from the distribution, while the lengths of new categories of lines were included. The changes to working

[18] Stand-Alone Broadband (This provides a standalone DSL broadband service over the local loop, without a 'PSTN' service).

lines also led to changes in the allocation of costs between MDFs (i.e. for cost categories which were allocated on the basis of the number of working lines).

TERA is of the view that it was appropriate to update the working lines definition to reflect the actual costs and revenues included in the USO model as outlined in Decisions 2, 3 and 6 of D04/11.

4.4. Conclusion

TERA concludes that the approach to the treatment of the revenue data in eir's final 2010/11 USO funding application is reasonable and that it is consistent with Decisions 2 to 7 of ComReg Decision D04/11. A summary of eir's rationale for revenue exclusions, further changes in line definition and TERA's assessment is also set out in Table 4 below.

Table 4 – Summary - Revenue Data Changes

Change	eir's rationale for the change	TERA's assessment
Revenue data exclusions	Non USO services Large MDF based Services (this includes Freefone (national and international) and Interconnect links) Non MDF specific services Competitive services	May be excluded for the purpose of USO direct net cost calculation.
Inclusion of CPE Revenue	Correction after omission in eir's initial application.	TERA agrees it is necessary to include revenues associated with CPE as the corresponding cost is already included in eir's USO model
Allocation of revenues to MDFs	eir had a 3 month data retention policy - first two months of 2010/11 data had been deleted before eir prepared its application eir studied the possible seasonal distortion effect using similar data from 2011/2012 and 2012/2013. No distortion was identified. Therefore eir concluded it is unlikely there would be any distortion in 2010/2011 data.	(1) Since the full year data for the financial period 2010/2011 was not available; and, (2) Since it concerns only a small portion of overall relevant revenues; the impact of the unavailable data is likely to be minimal, and it is therefore deemed a reasonable approach.
Allocation of one-	One-off revenue categories are	The PSTN connection cost was not

off revenues	allocated to the year in which they were incurred[19] except PSTN connections which are recognised in the same period as the initial connection, without amortization. The PSTN connections are offset by the corresponding costs, which are treated in a similar manner. All the connection revenues (excluding RAT and PSTN) are already amortised within the regulatory accounts, over expected customer lifetime[20]. Thus regulatory amortisation is already incorporated within the model input data. RAT connections are amortised in the Area model	included in the amortisation. As eir's treatment for costs is similar to the treatment of revenues, this approach is acceptable
Changes in working line definitions	Inclusion of new services in line count (as SABB).	The change is not necessary for 2010/11, but it provides that for future net cost submissions following the deployment of SABB, eir will take into account "all" capital costs and "all" operating costs as per Decision 2 of D04/11., TERA agrees with this change.

Source: USO Model Documentation 2010/11, July 2016; and TERA analysis

[19] Frontier report - 2010/11. A report prepared for Eir. July 2016, page 17 Frontier report

[20] Frontier supplemental report., Page 8

5. Cost Data

5.1. Section Overview

Decisions 1, 2, 8 and 9 of D04/11 apply to the cost data used by eir in its calculation of avoidable costs. Cost data includes OPEX and CAPEX of access networks and of core networks. In summary:

- Decision 1 states that the HCA methodology, with certain adjustments, is the cost methodology that must be used to calculate the net cost.
- Decision 2 sets out the basis for calculating avoidable costs relevant to the calculation of the direct net cost.
- Decision 8 and Decision 9 set out the basis for determining avoidable costs for inclusion in the net cost calculation, and the methodologies to determine the appropriate level of costs that would have been incurred by an efficient operator.

The full text of these decisions is as follows:

> ***Decision 1:*** *The HCA methodology, properly adjusted for efficiencies and taking account of the costs that could have been avoided by the USP without having the USO, is the cost methodology that must be used to calculate the net cost of the USO.*

> ***Decision 2:*** *USO net costs shall be calculated on the basis of "all" capital costs and "all" operating costs that could be avoided on a HCA basis, as if the provision of services to uneconomic customers by a commercial operator was not required under a USO. It is only the portion of costs, both capital and operational expenditure for the given financial year, that can be directly attributed to the USO service (i.e. the service activity creates the cost) and which could have been avoided without the USO, which are included in the net cost calculation.*

> ***Decision 8:*** *The avoidable costs included in the net cost calculation, shall be those costs reflecting the provision of the USO which a commercial operator would not ordinarily have provided, and which were incurred in the most efficient way. These costs shall relate to: (a) the avoidable capital costs associated with CAPEX i.e. depreciation; (b) OPEX; and (c) overheads for the appropriate financial year.*

Decision 9: *ComReg may use a number of methodologies to determine the appropriate level of costs that would have been incurred by an efficient operator, in order to determine the quantum of adjustments necessary to the USP's net cost calculation. These methodologies may include, but are not limited to, the use of:*

• The review of supporting documentation available, such as: cost-benefit analysis reports; engineering reports; fault reports of geographical areas, and other documents in relation to the business case / investment decisions associated with the network roll-out and upgrade;

• A line fault efficiency rate: applying the national LFI target rate (corresponding to the financial year in question) at a regional level (and allowing for appropriately reasoned variances) ;

• Independent survey report regarding the USP's efficiency;

• Regulatory decisions from other jurisdictions that provide relevant precedents and benchmarks; and

• The development of a model to assess the appropriateness of the efficiency adjustment proposed by the USP.

This section reviews eir's final 2010/11 USO funding application cost data for adherence with Decision 1, 2, 8 and 9 of D04/11 under the following headings:

- Cost methodology
  - Included Cost Categories
  - Cost avoidability
    - access network OPEX; and
    - Avoidable Costs Analysis.
    - OPEX efficiency
  - Cost Allocation
  - Efficiency adjustments
  - "Distance-sensitive" categorisation
  - Cost curves for Core Network
- Conclusion

TERA assessed the treatment of costs in terms of which categories of costs are relevant to the different decisions stated above, how they are allocated between MDFs and lines, which costs are avoidable, and which costs are distance sensitive.

5.2. Cost Methodology

As required by Decision 1 of D04/11, the cost data is taken from eir's historical cost accounts (HCA) and is adjusted for efficiencies and to take account of avoidable costs, calculated in accordance with Decision 2 and Decision 8.

When analysing costs, TERA paid particular attention to the following main issues:

- Which cost categories are included in the USO model and whether they correspond to revenue services

- Which cost categories are defined as avoidable or partially avoidable
- How costs are allocated to MDFs
- How efficiency adjustments are made.

5.2.1. Included Costs Categories

In accordance with Decision 8, the cost data includes OPEX and CAPEX of access networks and of core networks.

TERA first considered the costs categories identified by eir to ensure they were treated correctly. TERA noted that eir included in the final 2010-11 USO funding application the following additional costs, which had not been included in eir's 2009/10 USO funding application:

- BIP and Ethernet SANS (over copper) revenues and OPEX.
- CAPEX associated with the building pool [21]
- The cost of PRA/FRA CPE for ISDN lines

TERA considers that the above costs are correctly included in the USO Model. The accuracy of the input data amounts for BIP, Ethernet SANS and OPEX and the building pool CAPEX within eir's final 2010/11 USO funding application have been verified by PWC via the AUP process (by comparing the values on the input sheets back to the source workbooks).

TERA is of the view that the above costs are appropriate for inclusion in the USO model.

5.2.2. Cost Avoidability

Having considered the cost data, TERA then reviewed the USO Model to assess the proportion of these costs which could be avoided if certain MDF areas were no longer served by eir.

5.2.2.1. Access Network OPEX

If an activity code is 'Indirect'[22], the avoidability percentage is estimated by considering the avoidability of the SRT codes that underlie that activity code.

[21] The net book value (NBV) of the building pool asset class is ✂, which increases the total avoidable costs by approximately ✂.

eir made some minor changes to the categorization of SRT codes (see Table 5) in the initial 2010/11 USO funding application as against its 2009-2010 USO funding application.

Table 5 - Minor Changes in SRT code categorisation 2010/11)

(Based on a sample list of SRT codes provided)

Activity Code	Description	Total OPEX (Essbase)	Category	% avoidable 2010/11	% avoidable 2009/10	Shortfall in avoidable opex
GB113	Network Mgmt. Systems	✂	Indirect	✂	✂	✂
GB140	DC Power	✂	Indirect	✂	✂	✂
GB149	Switching network – edge	✂	Indirect	✂	✂	✂
GF113	Network Mgmt. Systems	✂	Indirect	✂	✂	✂
GF122	Network Rates	✂	Indirect	✂	✂	✂
GF140	DC Power	✂	Indirect	✂	✂	✂
GF149	Switching network – edge	✂	Indirect	✂	✂	✂
Total						✂

Source, USO Model documentation 2010/11 and 2009/10 TERA Analysis

TERA does not have full information on each individual SRT code however TERA used sampling to check the SRT code categorisation: see section 5.2.2.2 (reviewed as part of the AUP).

Based on this sampling, TERA estimates that the impact of these changes made by eir to SRT code categorisation is minor, and these changes are acceptable.

5.2.2.2. Avoidable Costs Analysis

The USO Model[23] (section 3.1.2) submitted as part of eir's initial 2010/11 USO funding application, details the costs that are avoidable at the MDF level.

TERA has used the access network OPEX cost models (based on the 2016 CAM) to provide a comparable cross check, by identifying those cost categories that vary in accordance with the number of faults.

This cross-check shows that while certain cost avoidability assumptions are not the same as the 2016 CAM, the differences, in TERA's view, are non-material and are therefore acceptable.

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[22] Activity codes classified as 'Indirect' are those capturing costs that are not directly related to operations in a given MDF area, but which may change in response to changes in the level of direct costs.

[23] Frontier report - 2010/11. A Report Prepared for Eir. July 2016

Table 6 below shows the consistency between the avoidability calculation in the 2010/11 USO model and the implementation rules of the 2016 CAM (colour coded “green” within the OPEX Model column of Table 6).

Some cost categories (see Table 6 - colour coded “violet” within the OPEX Model), are considered unavoidable in the USO model, while they are partially or fully avoidable in the 2016 CAM. This “unavoidable” assumption is conservative (as most of the time the assumption considers that no cost would be avoided absent USO, and therefore tends to under-estimate the net cost). TERA therefore considers that this approach cannot lead to eir over-estimating the net cost. eir has also provided further explanations for the classification of other cost categories, based upon which TERA concluded that those cost classifications are acceptable (see Table 6 - colour coded grey within the OPEX Model column).

For the reasons stated in this section and Table 5 and Table 6, TERA considers the cost avoidability assumptions applied by eir to be reasonable.

Table 6. Example: Subscriber Unit' network element - Avoidability Analysis & 2016 CAM cross-check

Colour Coding Legend for OPEX Model Column:

	Corresponds with the 2016 CAM
	Does not correspond with the 2016 CAM, but shows a conservative assumption
	Acceptable based on additional information provided by eir

Activity Code	Description	Total OPEX (Essbase)	Category	% avoidable	Avoidable OPEX	OPEX Model
GB113	Network Mgmt. Systems	✂	Indirect	✂	✂	Additional information provided by eir: Design for operations in the various network management centres. These are classified as "Indirect" as they related to non-field staff (as opposed to field staff 'directly' involved in repair or maintenance activities).
GB140	DC Power	✂	Indirect	✂	✂	Additional information provided by eir: DC Power Design. These are classified as Indirect as they related to non-field staff (as opposed to field staff 'directly' involved in repair or maintenance activities)
GB148	Switching network – Core	✂	Common	✂	✂	Zero

GB149	Switching network – edge	✂	Indirect	✂	✂	Zero
GF112	Operator Equipment	✂	Common	✂	✂	N/A
GF113	Network Mgmt. Systems	✂	Indirect	✂	✂	Additional information provided by eir: Pay relating to operations in the various network management centres. These are classified as Indirect as they related to non-field staff (as opposed to field staff 'directly' involved in repair or maintenance activities of the access network.
GF122	Network Rates	✂	Indirect	✂	✂	Additional information provided by eir: Includes network rates that are paid to local authorities. It is partially avoidable because, in addition to fixed rates, it includes network rates that depend on the extent of network deployed.
GF140	DC Power	✂	Indirect	✂	✂	Additional information provided by eir: Non-field Staff costs for Maintenance and support agreements for MDF power equipment (rectifiers, batteries, etc.). Classified as indirect as not directly related to OH or UG network.
GF149	Switching network – edge	✂	Indirect	✂	✂	Zero
HA103	Network/Wholesale	✂	Common	✂	✂	→ Rescaled based on staff cost (avoidable)
HA105	General Company (See HA105-A & HA105-B)	✂	Common	✂	✂	→ Rescaled based on staff cost (avoidable)

HA107	GTO	✂	Common	✂	✂	→ Rescaled based on staff cost (avoidable)
HA110	TEM	✂	Common	✂	✂	Zero
IA103	Finance - general activities	✂	Common	✂	✂	"Finance" → NOT Avoidable
JB199	Other Local Systems	✂	Common	✂	✂	N/A
KA101	Corporate Communications	✂	Common	✂	✂	→ Rescaled based on staff cost (avoidable)
KA104	Branding	✂	Common	✂	✂	→ Rescaled based on staff cost (avoidable)
LA101	Corporate Services (Other)	✂	Common	✂	✂	"Corporate Services - Non Pay" → NOT Avoidable
LA107	GTO	✂	Common	✂	✂	Corporate Services - Non Pay" → NOT Avoidable
MA101	Purchasing	✂	Common	✂	✂	"Purchasing" → Rescaled based on staff cost (avoidable)
MB102	Warehousing and Distribution	✂	Common	✂	✂	"Warehousing and Distribution" → Rescaled based on staff cost (avoidable)
ME101	Pay Supplier	✂	Common	✂	✂	"Pay supplier" → Rescaled based on staff cost (avoidable)
MER	All Work & specific equipment on Applied & Pure Technical Research	✂	Common	✂	✂	"Research & Development" → NOT Avoidable

MF101	Accommodation Management	✂	Common	✂	✂	“Accommodation - management” → Rescaled based on accommodation costs (avoidable)
MF102	Appropriation coded Building maintenance costs	✂	Common	✂	✂	“Accommodation” → Rescaled based on non-pay costs (avoidable)
MG101	Management Transport	✂	Common	✂	✂	“Transport management” → Rescaled based on staff cost (avoidable)
MLB	LOCAL DIGITAL E10B.EXCH	✂	Direct	✂	✂	Zero
MLE	LOCAL DIGITAL AXE EXCH	✂	Direct	✂	✂	Zero
MMB	MAINTENANCE AND CLEANING OF BUILDINGS OWNED OR LEASED BY T.E.	✂	Common	✂	✂	“Accommodation” → Rescaled based on non-pay costs (avoidable)
MME	ELECTRICAL INSTALLATIONS	✂	Common	✂	✂	“Accommodation” → Rescaled based on non-pay costs (avoidable)
MNE	EDGE SWITCHING MANAGEMENT O&M	✂	Indirect	✂	✂	Zero
MNN	DATA MANAGEMENT O & M	✂	Direct	✂	✂	Appropriated cost → Rescaled based on staff cost (avoidable)

MNT	NETWORK LEVEL AND SERVICE LEVEL MANAGEMENT SYSTEMS	✂	Direct	✂	✂	Appropriated cost → Rescaled based on staff cost (avoidable)
MNW	WORK MANAGEMENT SYSTEMS	✂	Direct	✂	✂	Appropriated cost → Rescaled based on staff cost (avoidable)
MNZ	NETWORK MANAGEMENT CENTRE FACILITIES	✂	Direct	✂	✂	Appropriated cost → Rescaled based on staff cost (avoidable)
MPC	MICRO COMPUTERS	✂	Common	✂	✂	"IT-OTHER" → Rescaled based on a number of cost categories (incl. staff costs)
MPM	MAINFRAME	✂	Common	✂	✂	"IT-OTHER" → Rescaled based on a number of cost categories (incl. staff costs)
MPR	PLANT RECOVERY, REARRANGEMENT REDEPLOYMENT EXC CHANGEOVERS	✂	Common	✂	✂	Appropriated cost→ Rescaled based on staff cost (avoidable)
MPW	MAINTENANCE OF SOFTWARE	✂	Common	✂	✂	"IT-OTHER" → Rescaled based on a number of cost categories (incl. staff costs)
MPX	IT FACILITIES & S/W DEPLOYMENT	✂	Common	✂	✂	"IT-OTHER" → Rescaled based on a number of cost categories (incl. staff costs)

MTD	MAINTENANCE OF DIGITAL SWITCHING TRUNK NETWORK	✂	Common	✂	✂	Zero
MXP	CUSTOM HOUSE DOCKS EXCH	✂	Common	✂	✂	N/A
MXY	DC Power Maintenance	✂	Indirect	✂	✂	Appropriated cost→ Rescaled based on staff cost (avoidable)
NA101	Manage the Business	✂	Common	✂	✂	"Manage the business - Other" → NOT Avoidable
NA106	Wholesale	✂	Common	✂	✂	"Manage the business - Other" → NOT Avoidable
NA108	GTO	✂	Common	✂	✂	N/A
UWF	FLEXIBLE EXTENDED WORKING HOURS	✂	Direct	✂	✂	Zero
Non-Exceptional	-	✂	Common	✂	✂	N/A

Source: USO Model Documentation 2010/11, July 2016, Table 9 p.41; TERA analysis

5.2.3. Cost Allocation

The costs from eir's HCA accounts are, in the main, not identified separately for different MDF areas. Costs therefore need to be allocated to areas using appropriate cost drivers. TERA has reviewed the USO models and sets out its views below.

eir made two changes to the allocation of costs across MDFs between eir's initial 2010/11 USO funding application and eir's final 2010/11 USO funding application:

- Costs of CPE are now allocated across all PRA/FRA working lines. This new allocation is aligned with the cost causality principle.
- Correction of the allocation coefficients for GF122 (network rates that are paid to local authorities) to ensure that they total to 100%. This corrected a previously identified calculation error.

TERA agrees with these corrections as they lead to a more robust calculation of USO direct net cost.

5.2.3.1. Cost Drivers – Access OPEX Allocation Across MDFs

In eir's 2010/11 USO Model documentation (section 3.1.3), eir details the cost drivers used to allocate avoidable OPEX to MDFs.

TERA has reviewed the above cost drivers and compared them, as a cross-check, with the cost drivers in the 2016 CAM (see Table 7 - OPEX Model column). Some cost drivers are the same as in the 2016 CAM (see Table 7 - highlighted in "green" within the OPEX Model column). Some cost drivers are not exactly the same, however TERA considers that the approach is reasonable and can be explained by the differences in the available data (see Table 7 - highlighted in "grey" within the OPEX Model column).

In eir's initial 2010/11 USO funding application the "Repair – access" cost category was allocated exclusively based on the number of faults. However, TERA notes that repair activities are performed by "service assurance teams" which are organised by service assurance areas.

As a consequence, TERA informed ComReg that it considered that these costs should be first allocated to the service assurance areas based on the number of staff. Repair activities should then be allocated to the MDFs within the area based on the number of lines of number of faults. TERA's view is that such an approach is more in line with the cost causality principle as it reflects that faults may be more expensive to address in some areas (e.g. due to longer transport times for maintenance team). This also reflects that repair team sizes are assembled based on these factors and, furthermore, this approach is more in line with the 2016 CAM cross-check.

TERA made a number of recommendations to ComReg in relation to eir's "Repair – access" cost category during the assessment period. This led to eir changing its approach to the "Repair – access" cost category in line with TERA's recommendation in its final 2010/11 USO funding application.

TERA considers that eir's cost driver assumptions in the final 2010-2011 USO funding application are reasonable.

Table 7. Cost allocation drivers - Avoidable OPEX to MDFs

Colour Coding Legend for OPEX Model Column:

	Same as OPEX model of the 2016 CAM or zero cost
	Different from OPEX model of the 2016 CAM but differences are reasonable and non-material

Network Element	Cost Driver	CAM - OPEX Model
Copper Access Network	Varies depending on appropriation code (see below) Includes expenditure on preventative and restorative maintenance, number of working lines, and number of faults	-
Provisioning – Access	Physical Provides (ULMP[24], PSTN/ISDN, DSL-R[25], DSL-B[26], SB-WLR[27])	Allocation to the service assurance teams number of staff and then to the MDF within the service area based on the active lines
Provisioning – Retail	Physical Provides (DSL-R, DSL-B, SB-WLR)	Allocation to the service assurance teams number of staff and then to the MDF within the service area based on the

[24] Unbundled Local Metallic Path

[25] Digital Subscriber Line-Retail

[26] Digital Subscriber Line-Bitstream

[27] Stand-Alone Broadband Wholesale Line Rental

		active lines
Provisioning – Leased Lines	Number of working lines (leased lines)	Allocation to the service assurance teams number of staff and then to the MDF within the service area based on the active lines
Repair – Leased Lines	Number of working lines (leased lines)	Allocation to the service assurance teams number of staff and then to the MDF within the service area based on the active lines
Repair – Access	Number of faults -> changed to Number of repair staff combined with number of faults (MSO, MSN, MCY, Total faults)	Allocation to the service assurance teams number of staff and then to the MDF within the service area based on the active lines
Legacy leased line equipment (Dassnet)	Gross Book Value relating to leased lines (asset classes 2814, 2818, and 2821)	Zero
DSLAMs	Number of working lines (DSL)	Zero
Building Pool	Number of working lines (All copper lines; DSL lines) Gross Book Value relating to leased lines (asset classes 2814, 2818, and 2821)	Allocated based on number of telephony pairs
Retail DSL	Number of physical provides (DSL)	Zero
Retail PSTN / ISDN	Number of physical provides (PSTN/ISDN)	Zero
BIP	Number of working lines (Supplementary services)	Zero

Source: USO Model Documentation 2010/11, Table 10 p44

5.2.4. Efficiency adjustments

Decision 9 of D04/11 (set out above) refers to the possibility of using a number of methodologies to determine *"the appropriate **level of costs** that would have been incurred by an efficient operator..."* and lists five types of methodologies that may be used to determine the quantum of adjustments necessary.

eir has made a number of efficiency adjustments in line with Decision 9. First eir made efficiency adjustments based on the second of the methodologies in Decision 9, *"line fault efficiency rate*". eir's efficiency adjustment to the LFI led to a downward adjustment to the direct net cost as eir's average national LFI is higher than that set by ComReg.

Second, eir incorporated other efficiency adjustments into its 2010/11 USO Models based on the fifth Decision 9 methodology, in respect of the following maintenance activities:

- MLC: Reactive maintenance costs associated with customer carriers.
- MLO: Reactive maintenance costs associated with copper overhead network.
- MLU: Reactive maintenance costs associated with copper underground network.

Furthermore, two steps of efficiency adjustment of the LFI rate have been used in the USO model:

- An efficiency adjustment at the national level if the actual national fault of eir is higher than the PIP target rate set by ComReg.

- As eir's actual fault rate (14.3%) is lower than the PIP target rate set by ComReg (14.7%), no efficiency adjustment has been made at the national level.

- As the same level of efficiency may not be achieved for all areas of Ireland, a 2nd efficiency adjustment is envisaged. For each MDF, eir's number of faults is compared to the results of a modelling of a target number of faults based on the characteristics of the area (percentage of carriers, percentage of cables on poles, number of working lines, percentage of DSL lines, working line density(working lines per sq. km)). The number of faults for MDFs significantly above the target are adjusted (the actual number of faults is considered as an outlier if it is higher than the one predicted by the regression plus the standard deviation).

Compared to the 09/10 USO funding application model two methodological changes have been made to the fault rate regression analysis:

- Wholesale lines are out of the scope of the target fault rate, and therefore have been excluded from the regression. As the 'Efficient target' fault rate is now defined based on faults on eir's retail lines only, the number of working lines was

changed from “all lines” (excluding fibre) to only “PSTN and Retail SABB lines”. The percentage of DSL lines (calculated by taking the number of DSL lines and dividing this by the number of working lines), was updated accordingly. Similarly the line density, calculated as the number of working lines per square kilometre, was updated.

- The analysis has been performed on the number of faults rather than on the LFI. According to eir, this led to more accurate regression results and, in particular, allowed negative results to be avoided.

TERA agrees with the approach to adjust operating expenditure related to line faults and considers the two changes in methodology (change in working lines definition and the approach based on the “number of actual faults that occurred”) to be reasonable as this may lead to a more accurate calculation of predicted fault rates.

5.2.5. “Distance-sensitive” categorisation

Distance sensitive costs are those that vary depending on the length of a line. Data from the 2009 CAM is used to allocate these costs to housing and isolated areas. eir’s 2010/11 Frontier Report (section 3.1.4) maps the network service elements to 3 categories:

- Distance-sensitive
- Non distance-sensitive
- Provisioning

This classification is an input to the calculation of avoidable costs at the customer level.

TERA has reviewed this mapping and concluded, based on available classification information, that this is a reasonable approach for each cost element.

The details of this cost allocation or mapping are provided in Table 8 (Details from the OPEX Model and Analysis column).

Based on the further details and explanations provided by eir (as stated in table 8 below), TERA has sufficient information to determine that eir’s approach to “distance- sensitive” cost categorisation is reasonable.

Table 8. Mapping of distance sensitive, and non-distance sensitive Network Service Elements to services and provisioning

Legend:

	Acceptable to TERA

Network Element	Specific Network Element (or appropriation code for Copper Access Network)	Associated service	Provisioning, Distance sensitive or Non-distance sensitive	TERA's Assessment
Copper Access Network	MLC	Based on split in regulatory accounts	Distance sensitive	MLC - Customer Carriers → OK as the number of faults increases with the distance
Copper Access Network	MLG	Based on split in regulatory accounts	Distance sensitive	MLG - Lightning Damage → OK as the number of faults increases with the distance
Copper Access Network	MLI	Based on split in regulatory accounts	Distance sensitive	MLI – Pressurisation → OK as the number of faults increases with the distance
Copper Access Network	MLO	Based on split in regulatory accounts	Distance sensitive	MLO - Overhead Network → OK as the number of faults increases with the distance
Copper Access Network	MLR	Based on split in regulatory accounts	Non-distance sensitive	MLR - Mtce Local Radio → OK as local radio costs are not distance-driven
Copper	MLU	Based on split in	Distance sensitive	MLU - Underground Network

Access Network		regulatory accounts		→ OK as the number of faults increases with the distance
Copper Access Network	MRO	Based on split in regulatory accounts	Distance sensitive	MRO - Unbillable damage – overhead → OK as the number of faults increases with the distance
Copper Access Network	MRU	Based on split in regulatory accounts	Distance sensitive	MRU - Unbillable damage – underground → OK as the number of faults increases with the distance
Copper Access Network	MVO	Based on split in regulatory accounts	Distance sensitive	MVO - Overhead Network → OK as the number of faults increases with the distance
Copper Access Network	MVU	Based on split in regulatory accounts	Distance sensitive	MVU - Underground Network → OK as the number of faults increases with the distance
Copper Access Network	MTT	Based on split in regulatory accounts	Non-distance sensitive	MTT – Records As explained by Eir, they consider it is more appropriate to treat MTT costs as non-distance sensitive given that the information recorded in ANMR primarily involves the recording of cable characteristics at discrete (non distance) originating or termination nodal points (MDF, Drop point, Cabinets) and the location of these points. → OK
Copper Access	MXY	Based on split in regulatory	Non-distance sensitive	MXY - DC Power Maintenance

Network		accounts		→ OK as related to Eir sites
Copper Access Network	GF122	Based on split in regulatory accounts	Non-distance sensitive	GF122 - Network Rates As explained by Eir, GF122 relates to the network rates that are paid by Eir to local authorities. → OK
Copper Access Network	GB101	Based on split in regulatory accounts	Non-distance sensitive	GB101 - Access Nwk. Overhead As explained by Eir, it relates to primarily non-field staff costs for Network planning and Design of the Access Network. These are both treated as non-distance sensitive since they are central costs that do not vary with the size of the network in terms of line length. →OK
Copper Access Network	GB102	Based on split in regulatory accounts	Non-distance sensitive	GB102 - Access Nwk. Underground As explained by Eir, it relates to primarily non-field staff costs for Network planning and Design of the Access Network. These are both treated as non-distance sensitive since they are central costs that do not vary with the size of the network in terms of line length.
Dassnet	Dassnet Equipment	Supplementary Services	Non-distance sensitive	Data network → equipment with a cost that is not distance-sensitive
Retail - DSL	Retail - DSL	DSL-Retail	Non-distance sensitive	Retail cost → not distance-sensitive
Retail - PSTN/ISDN	Retail - PSTN/ISDN	PSTN/ISDN	Non-distance sensitive	Retail cost → not distance-sensitive

DSL-DSLAM	DSL-DSLAM	DSL-Retail/DSL-Bitstream	Non-distance sensitive	Retail cost → not distance-sensitive
Leased Line - Provisioning	Leased Line - Provisioning	Leased Line	Provisioning	Provisioning activity
Leased Line - Repair	Leased Line - Repair	Leased Line	Non-distance sensitive	As explained by Eir, the costs of "leased lines repair" relates to the repair of customer equipment not length of line. → OK
Repair - Access	Repair - LLU (CMA)-4	UMLP	Distance sensitive	→ OK as the number of faults increases with the distance
Repair - Access	Repair - LLU (Approp)-4	UMLP	Distance sensitive	→ OK as the number of faults increases with the distance
Repair - Access	Repair - LLU (Other)-4	UMLP	Distance sensitive	→ OK as the number of faults increases with the distance
Repair - Access	Repair - Wholesale Other (Other)-4	DSL-Bitstream	Distance sensitive	→ OK as the number of faults increases with the distance
Repair - Access	Repair - PSTN - (Approp)-4	PSTN/ISDN	Distance sensitive	→ OK as the number of faults increases with the distance
Repair - Access	Repair - PSTN Dispatch & Clear (CMA)-4	PSTN/ISDN	Distance sensitive	→ OK as the number of faults increases with the distance
Repair - Access	Repair - ISDN Dispatch & Clear (CMA)-4	PSTN/ISDN	Distance sensitive	→ OK as the number of faults increases with the distance

Subscriber Unit	Subscriber Unit	PSTN/ISDN	Non-distance sensitive	→ Ok as “SU” costs are not distance sensitive
Provisioning - Access	Provisioning - LLU (CMA) Other-4	UMLP	Provisioning	Provisioning activity
Provisioning - Access	CB125-4	UMLP	Provisioning	CB125 - LLU (Co Location) → Provisioning activity
Provisioning - Access	Provisioning - LLU (Approp)-4	UMLP	Provisioning	Provisioning activity
Provisioning - Access	Provisioning - PSTN Access-4	PSTN/ISDN	Provisioning	Provisioning activity
Provisioning - Access	IPC-4	PSTN/ISDN	Provisioning	IPC - Provisioning Control → Provisioning activity
Provisioning - Access	CD101-4	PSTN/WLR	Provisioning	Provisioning activity
Provisioning - Access	Provisioning - ISDN Access-4	PSTN/ISDN	Provisioning	Provisioning activity
Provisioning - Access	Provisioning - DSL-4	DSL-Retail	Provisioning	Provisioning activity
Provisioning - Access	Provisioning - Access Bitstream-4	DSL-Bitstream	Provisioning	Provisioning activity
Provisioning -	Provisioning - CPS WLR-4	WLR	Provisioning	Provisioning activity

Retail				
Provisioning - Retail	Apparatus Supply	Supplementary Services	Provisioning	Provisioning activity
Provisioning - Retail	DSL (Retail)	DSL-Retail	Provisioning	Provisioning activity
Provisioning - Retail	PSTN CPE Equipment Rental (GL 10658 split) - WLR CPE	PSTN/WLR	Provisioning	Provisioning activity
Data Services	Data - BIP-4	Supplementary Services	Non-distance sensitive	As explained by Eir, this is equipment (routers) that support BIP services. The cost is not dependent on length but on capacity, software, configuration required, etc. Therefore, they are treated as non-distance sensitive. →OK
Data Services	Data - Ethernet-4	Supplementary Services	Non-distance sensitive	This is equipment (routers) that support BIP services. The cost is not dependent on length but on capacity, software, configuration required, etc. Therefore, they are treated as non-distance sensitive. →OK
Building Pool	PSTN	PSTN/ISDN	Non-distance sensitive	Related to buildings → non distance sensitive
Building Pool	DSL/BS	DSL-Retail/DSL-Bitstream	Non-distance sensitive	Related to buildings → non distance sensitive
Building Pool	LL	Leased Line	Non-distance sensitive	Related to buildings → non distance sensitive

Building Pool	SUP	Supplementary Services	Non-distance sensitive	Related to buildings → non distance sensitive

Source: Frontier Report 2010/11, Table 14 p52

5.2.6. Cost Curves for Core Network

CVR is the curve that describes how the cost of the core network changes in relation to call volumes. The CVRs used in the USO Model have been extracted in the main from the latest TD-LRIC[28] model that has been previously used to set regulated interconnection rates and also from BT UK Group model[29].

TERA analysed the examples of CVRs used in the USO Model in eir's initial 2010/11 USO funding application. TERA raised certain queries, which led to ComReg requesting clarifications from eir on the use of CVR's. eir's additional clarifications and TERA's assessment of these is set out below:

- SEC-SWITCH-E10-1312,1314,1316, TERTIARY-SWITCH-1312, 1314, 1316. eir confirmed that it is now assumed that the cost increases linearly between 76% and 100%.
- TERA notes that this CVR is therefore very close to the one used by BT.

  According to the BT model[30], in order to deliver 0% of traffic volume, it is necessary to invest 40% of costs (fixed costs), and in order to deliver 1% of traffic volume, it is necessary to invest 76% of costs. Between 76% and 100% the cost increases rather linearly with the traffic Billing-CDCS-CMA.
- TERA considers that the assumption used in eir's 2010/11 USO Model is correct. Based on this assumption, the cost is equal to zero in 2010/11 and therefore no CVR is needed.
- TERA notes that the CVRs used in eir's final 2010/11 USO funding application USO Models are the same as those used in the final 2009/10 USO funding application, which TERA considered reasonable.

Based on the above clarifications, TERA considers it reasonable for eir's final 2010-2011 USO funding application to continue to use CVRs based on the TD-LRIC model and on the BT UK Group model.

[29] BT Group plc Long Run Incremental Cost Model Relationships and Parameters 2011: http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2011/LongRunIncrementalCostModel2011.pdf

[30] BT Group plc Long Run Incremental Cost Model Relationships and Parameters 2011: http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2011/LongRunIncrementalCostModel2011.pdf

5.3. Conclusion

TERA has reviewed the additional cost data information provided by eir and concludes that it is consistent with Decisions 1, 2, 8 and 9 of D04/11 as:

- **HCA costs are adjusted for efficiency (Decision 1)**
- **Relevant CAPEX and OPEX are included (Decision 8)**
- **Only relevant avoidable costs are included (Decisions 1 and 2)**
- **Costs correspond to the services that a commercial operator would not provide (Decision 2)**
- **Required efficiency adjustments have been made (Decision 9)**

6. Area model

6.1. Section Overview

This section reviews eir's final 2010/11 USO funding application against the principles and methodologies set out in Decisions 11 and 12 of D04/11, the full text of which is set out below.

> ***Decision 11:*** *Uneconomic areas shall be identified at an MDF level.*

> ***Decision 12:*** *An average depreciation charge for each class of network element (based on an average cost and asset age) shall be developed by geo-types (e.g. urban, sub-urban, rural etc.). The USP may allocate the relevant depreciation charge (as reconcilable to the HCA accounts and taking account of the principle of avoidable costs) for each exchange area based on the asset requirements as determined by the Copper Access Model (as updated or similar modelling tool). The calculation must be sufficiently granular to allocate costs only to those network elements actually used by users who are potentially uneconomic. In making this allocation, the USP should draw on, and be prepared to substantiate its investment profile / decision making, works-orders etc., so as to ensure that the allocation is appropriate (i.e. the USP should satisfy itself that in making an allocation to an MDF area, it has not allocated costs which are not reflective of the USP's investment profile in that MDF area).*

The Area Model calculates the direct net cost of uneconomic areas (i.e. where an area corresponds to one MDF, based on the network structure) and where the avoidable costs are greater than the total revenues foregone. This is consistent with the principle of avoidable costs: where the ability to avoid costs is largely determined by the capability to remove parts of the network that the USP, as a commercial operator, would not have chosen to serve in the absence of the USO.

TERA's assessment is that the calculated direct net cost of uneconomic areas in the Area Model is €0.18M. This figure reflects the amount eir claimed in its final 2010/11 USO funding application. This figure constitutes around 1% of the total direct net cost.

This reduction in direct net cost is caused by methodology changes outlined in previous sections:

- Changes to the avoidability of operating costs at the area level (section 5.2.2).
- Efficiency adjustments for line fault costs (section 5.2.4).
- Allocation of costs to MDFs (section 5.2.3)

6.2. Area Model Assessment

Chapters 4 and 5 have identified a number of adjustments to the treatment of the revenue and cost input data. For example:

- bigger sample size used in the allocation of revenues to MDFs to give more precision;
- inclusion of OPEX for BIP and Ethernet SANS[31] (over copper) which may potentially lead to some increase in the direct net cost of uneconomic areas;
- Inclusion of building pool CAPEX which may potentially lead to some increase in the direct net cost of uneconomic areas.

6.2.1. Methodology

Uneconomic areas are defined at the MDF level by comparing costs with revenue, the cost of these areas is determined as follows:

1. Estimate costs and revenue for each MDF and determine the preliminary list of uneconomic MDFs.
2. Deduct double counted revenue generated by traffic between two uneconomic areas. Reduce traffic towards economic areas from uneconomic areas, repeat until result is stable.
3. Distribute leased line revenues: if they connect economic and uneconomic areas, revenue should be attributed to the uneconomic one.
4. Add replacement revenues (coming from calls made by disconnected subscribers using connections in other areas or of other subscribers).

The difference between eir's initial 2010/11 USO funding application and eir's final 2010/11 USO funding application is a result of:

- the minor changes in the data treatment as described in previous sections; and
- the correction of an inconsistency in the calculation[32] (e.g. one correction has a small impact on the Area Model; reducing the direct net cost by €1600[33]).

TERA has not identified any methodological changes in the Area Model from the 2009/10 USO model. In summary, the changes in direct net costs from the 2009/10 USO model to the 2010/11 USO model appear to be as a result of the evolution or changes in input data: specifically, revenue data and cost data.

6.2.2. TERA's Assessment of the direct net cost claimed

TERA's assessment is that the calculated direct net cost of uneconomic areas is €0.18M. This constitutes around 2% of the total direct net cost.

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[31] Storage Area Network

[32] A calculation error has been identified that has only a small impact.

[33] Frontier Supplemental Report, Page 23.

The number of uneconomic MDFs in 2010/2011 is ✂ (out of a total of 1,064 MDFs). Table 9 outlines the direct net cost for each uneconomic MDF in 2010/2011. One additional MDF area ✂ became uneconomic when compared with 2009/2010[34]. However, the profit from this MDF area was already low in the previous year ✂), which was an indication that this this MDF area could become uneconomic in 2010/11.

Table 9 below summarizes the main evolution between 2009/10 and 2010/11 of direct net cost per non economic MDF to assess the impact the treatment of input data (reviewed in previous section) on the area level.

Table 9. Direct net cost assessment for Uneconomic MDFs – difference between assessment in 2009/2010 and assessment in 2010/2011 for uneconomic MDFs (€)

✂

Source: 2010/11 USO Model- Area Model

An increase in the direct net cost is observed in four areas in Table 9: The direct net cost for ✂increases from ✂ to ✂, for ✂ from ✂ to ✂, from for ✂) ✂ to ✂), and from ✂ to ✂ for ✂.

Table 10 shows that the main reason for the direct net cost increase in these four MDFs is a rise in the access costs. There has also been a decrease, to a lesser extent, in the access and core revenues in some MDFs.

Table 10. Change in costs and revenues between assessment in 2009/10 and assessment in 2010/11 for selected MDFs (€)

✂

Source: 2009/10 and 2010/11 USO Models, TERA analysis

The increase in access costs is explained by the change in the NBV and depreciation. Indeed, significant investments lead to significant increases in the NBV and depreciation values as shown in table 11: cost of ✂ has increased significantly for three MDFs out of four. For ✂ it is the increase in the Cable_OH and Cable_UG NBV that led to an increase in the direct net cost.

Table 11. Change in NBV between assessment in 2009/2010 and assessment in 2010/2011, %

✂

Source: 2009/10 and 2010/11 USO Models, TERA analysis

In summary, the variations in the direct net cost of uneconomic areas are mainly explained by the investments made by eir in particular MDFs, and by a higher level of

[34] Of the ✂ uneconomic areas in 2009/2010 (out of 1,064), only ✂ are still uneconomic in 2010/2011

NBV, cost of capital and depreciation. Furthermore, as explained by eir, in some cases such changes may be a result of changes in the amortisation policy (e.g. changes in accounting treatment of maintenance programmes[35]). Other factors that may lead to an increase in the direct net cost between 2009/2010 and 2010/2011 include a decline in the number of lines and corresponding revenues, as well as inclusion of BIP and Ethernet SANS CAPEX and CAPEX associated with the building pool.

TERA has also studied changes in core costs. Table 12 demonstrates that unit cost for some services ✂) have significantly increased in 2010/11 when compared to 2009/10.

Table 12. Change in the unit core costs between 2009/10 and 2010/11

✂

Source: 2009/2010 and 2010/11 USO Models, TERA analysis

The core unit costs are calculated from the historic costs of the network elements used in the conveyance of calls across the PSTN network, by applying avoidability rates based on CVRs, using a routing matrix which defines usage of network elements, by each service, and volumes of call services. Changes in any of these components can imply a change in the unit core costs.

eir provided further explanations for the increase[36]. eir noted that the volumes of voice calls are decreasing. A new routing factors study for international calls led to an increase in the cost estimation for this service, as a result of an increase in the usage coefficients of different network elements. ✂The structure of regulatory accounts has changed between 2009/10 and 2010/11 with the move to market-based reporting. In this context network studies and cost pools had to be re-configured to meet the new requirements. Finally, eir pointed to several changes that have been made to the mapping of services.

Accordingly, the changes in the direct net cost of studied MDFs come mainly from the changes to the input data, as a result of the changes in consumption, routing factors and regulatory accounts, and not from the changes in the Area Model itself. TERA has identified no changes in the area model itself and confirms that the calculations are performed correctly.

[35] Frontier Supplemental Report, page 24

[36] USO Funding. Additional responses to document "Workshop follow up_Net Cost.pdf" (25/02/2015)

6.3. Conclusion

TERA has reviewed the Area Model and concludes that the calculations are performed correctly and are consistent with the methodological approach set out in D04/11, in particular Decisions 11 and 12.

The only changes in direct net calculation as compared to 2009/10 were to the treatment of input data which are external to the model and due to changes in:

- **structure of regulatory accounts**
- **routing factors**
- **mapping of services**

7. Customer Model

7.1. Section Overview

This section reviews the Customer Model element of eir's 2010/11 USO funding application to check that it is in accordance with Decisions 10, 12, 13, 14 and 25 of D04/11.

TERA's assessment is that the calculated direct net cost of uneconomic customers in the Customer Model is €8.64M. This constitutes 95% of the total direct net cost claimed by eir.

The full text of the relevant decisions is set out below:

> ***Decision 10:*** *The net cost calculation shall not include those customers who were originally considered "uneconomic" but who have now become profitable. The net cost calculation also does not include those customers attained as a direct result of a competitive tendering process (who are deemed "uneconomic").*

> ***Decision 12:*** *An average depreciation charge for each class of network element (based on an average cost and asset age) shall be developed by geo-types (e.g. urban, sub-urban, rural etc.).*
>
> *The USP may allocate the relevant depreciation charge (as reconcilable to the HCA accounts and taking account of the principle of avoidable costs) for each exchange area based on the asset requirements as determined by the Copper Access Model (as updated or similar modelling tool).*
>
> *The calculation must be sufficiently granular to allocate costs only to those network elements actually used by users who are potentially uneconomic. In making this allocation, the USP should draw on, and be prepared to substantiate its investment profile / decision making, works-orders etc., so as to ensure that the allocation is appropriate (i.e. the USP should satisfy itself that in making an allocation to an MDF area, it has not allocated costs which are not reflective of the USP's investment profile in that MDF area).*

> ***Decision 13:*** *Uneconomic customers in economic areas shall be identified based on universal account numbers ("UANs"). However, if ComReg is satisfied, because of a lack of information beyond the control of the USP, that it is not practicable to identify uneconomic customers by UAN, the USP must demonstrate that the use of an alternative approach has the equivalent effect of identifying those customers.*

> ***Decision 14:*** *The USP may calculate uneconomic customers in economic areas using a probability analysis. However, the identification and allocation of these costs must be consistent with ComReg's decision outlined in Decision No. 12.*
>
> *The parameters and assumptions used in the probability analysis must be clearly documented and duly reasoned as to the circumstances why the USP considers the customer uneconomic.*

Decision 25: *Applications shall, with reference to the supporting model clearly identify (by MDF or by geographic location as appropriate), with adequate reasoning and cogent evidence to justify that, those customers or groups of customers (i.e. area), that in the absence of the USO, the provision of the service would either not continue to be provided or would never have been provided, to that customer or groups of customers (i.e. area) by a commercial operator, or by the USP acting as a commercial operator. The USP must provide its commercial reasoning, including the respective parameters used in justifying its decision, including, but not limited to:*

- *The current loss-making status of those customers or areas;*
- *The local density of those customers or areas;*
- *The respective distances from exchange for uneconomic customers;*
- *The network infrastructure / technology used to serve those customers or areas; and*
- *Any other pertinent information the USP has used to influence its decision making process.*

Furthermore, applications must not include those customers attained through a competitive tendering process, or those customers which have now become economic, but who were previously considered uneconomic.

7.2. Customer Model Assessment

As stated above, Decision 13 of D04/11 requires the calculation of the direct net cost for each individual uneconomic customer in economic areas "*to be identified based on universal account numbers ("UANs").*

However, Decision 13 also states that where, due to *"a lack of information beyond the control of the USP*", it is "*not practicable to identify uneconomic customers by UAN, the USP must demonstrate that the use of an alternative approach has the equivalent effect of identifying those customers."* In other words, an objectively justified alternative approach to this calculation is acceptable, such as a "probabilistic approach" (as outlined in Decision 14 of D04/11).

7.2.1. Methodology

In eir's final 2010/11 USO funding application, a probabilistic approach rather than an approach based on UAN is used to determine which customers are uneconomic. This probabilistic approach is consistent with the approach used in eir's 2009/10 USO funding application.

eir is of the view that an approach based on UAN cannot be implemented because uneconomic customers in economic areas cannot be identified based on UANs or by using any other identification number. The UAN identifies only customers' accounts, but one account may have several lines, lines may move between accounts for example as a result of switching between eir retail and eir wholesale. It is more relevant to identify uneconomic customers by the uneconomic lines than to use the customer

account. In order to populate the model with the data on the revenue distribution, eir has therefore used the combination of STD[37] code and telephone number.

eir has indicated that changing from the probabilistic approach is impossible for its final 2010/11 USO funding application due to a lack of required data. According to eir there is no available data on line length measurements for each individual customer. eir states that it is therefore impossible to identify each individual customer's associated revenue and line length cost, and that it is therefore impossible to match revenue and cost data for each customer.

This means that the net cost is not calculated for each individual customer, rather it is based on the probability of a customer being uneconomic, and the corresponding expected net cost.

The main assumption of this approach is that the expected revenue of a customer does not depend on the customer's line length (and hence does not affect the customer cost). Indeed, the telecoms service that a customer decides to choose and the services he or she uses generally do not depend on the length of their lines.

The approach is implemented by eir in several steps:

- For each MDF, the distribution of customers is calculated over the access cost intervals (for example number of customers whose line costs between €5 and €6) and the net revenue intervals (for example number of customers who pay between €5 and €6);
- For a customer in each net revenue interval, the probability of the customer being uneconomic is calculated: it is calculated by comparing the revenue with the cost distribution. It decreases as the revenue increases: for example, if the revenue of this revenue interval is below cost for all the lines in this MDF, then the probability a line in this revenue interval is uneconomic is equal to 100%.
- Multiplying the probability calculated by the number of customers gives the number of uneconomic customers.
- The expected direct net cost per uneconomic customer for a given revenue interval is estimated as the difference between revenue and the average expected cost for uneconomic customers.

In TERA's view the probabilistic approach adopted by eir is reasonable, absent the availability of more granular line length data that would enable eir to establish individual customer line revenues.

TERA is of the view that the probabilistic approach is consistent with the requirements of Decision 13 as the alternative proposed by eir has the equivalent effect of identifying uneconomic customers in economic areas. It is also in line with Decision 12 as a customer's anticipated revenue isn't correlated to geotype. Moreover, TERA is of the view that the parameters and assumptions used by eir in the probability approach are clearly documented and reasoned, as required by Decision 14.

[37] Subscriber Trunk Dialling

Besides, TERA is also of the view that following this approach, eir didn't include customers who were considered uneconomic and that turned economic. Thus, this approach is in line with the decision 10.

TERA's view is based on the following considerations

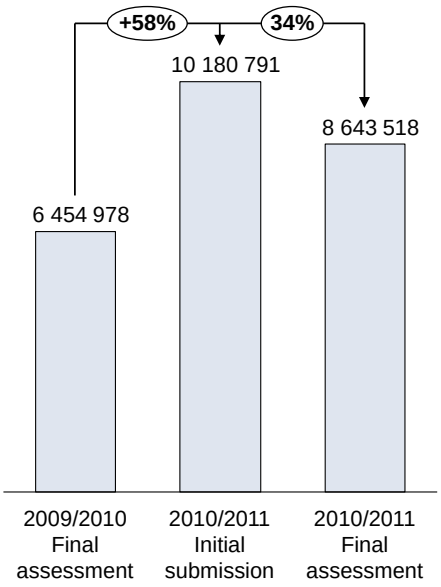
- UAN relates to a customer's account and not the number of lines on the account and would not reflect line movement at the customer account level.
- The difficulty in matching revenue and line length information (e.g. where the customer physically moves location and their account changes).
- eir has shown that expected customer revenues and line length costs are not correlated, in other words, there is insufficient data to match individual customer revenue to line length costs.

TERA concludes that the probabilistic approach adopted by eir is reasonable, absent the availability of more granular line length data that would enable eir to establish individual customer line revenues.TERA is of the view that eir's identification of uneconomic customers and its probabilistic approach is in accordance with Decisions 10, 12,13, 14 and 25.

7.2.2. TERA's Assessment of the direct net cost claimed

The direct net cost of uneconomic customers increased by 34% in 2010/11 versus 2009/10, Figure 1.

Figure 1. Direct Net Cost - Uneconomic Customers, €



Source: Customer Models

Table 13 gives the total number of uneconomic customers and their average direct net cost. Both the average direct net cost per uneconomic customer and the number of uneconomic customers is higher in 2010/2011 when compared to 2009/2010.

Table 13. Number of uneconomic customers and the average direct net cost per uneconomic customer

✂

Source: 2009/10 & 2010/11 Customer Models

Most MDFs contain uneconomic customers: ✂ of the total number of MDFs. However, for the majority of MDFs the proportion of uneconomic customers is low: ✂ (see Figure 2).

Figure 2. Proportion of uneconomic customers in economic areas: number of MDF

✂

Source: 2009/10 and 2010/11 Customer Models

7.2.3. Methodological Changes

Long or isolated lines may require higher CAPEX and OPEX. This should be taken into account when calculating direct net cost of uneconomic customers. However, eir's HCA accounts cannot provide information on the distribution of costs, at an individual line level.

Accordingly additional assumptions need be made to estimate this distribution. These assumptions enable the distribution of costs to be calculated from additional information (in particular, information on the line lengths), and on the cost allocation between "distance sensitive" and "non-distance sensitive" costs, avoidable and unavoidable costs, etc.

eir, in their initial 2010/11 USO funding application, proposed changes to the cost allocation methodology that had been used in its 2009/10 funding application. TERA reviewed eir's proposed changes and advised ComReg that it was necessary to request eir to amend their initial 2010/11 USO funding application further to:

- align with the 2009 CAM model
- take into account the reality of deployment, and in particular, recognize that the access line final drop may have a combination of both OPEX and CAPEX, whether overhead or underground.

eir's final 2010/11 USO funding application now reflects the changes recommended by TERA. To provide further detail, this section:

- describes the changes between the assumptions eir used in its 2009/10 USO funding application and its initial 2010/11 USO funding application;
- describes TERA's assessment of these changes (which includes cross checking the changes in assumptions with the 2016 CAM and explaining why some of eir's assumptions could not be accepted); and
- explaining TERA's alternative approach, which was implemented by eir in its final 2010/11 USO funding application.

7.2.3.1. Overhead CAPEX

Changes in the assumptions used

Overhead CAPEX ("OH CAPEX") includes overhead cables and poles.

In eir's 2010/11 initial USO funding application, it was assumed that OH CAPEX costs are fully distance sensitive and no portion of this cost is used for the final drop. This was a change in methodology from 2009/10.

eir's initial 2010/11 USO funding application assumed that the overhead network is used only outside housing areas, and all the corresponding costs are fully avoidable (100% of cost avoidable). The unit cost per meter was therefore calculated as the total OH CAPEX of a given MDF divided by the sum of lengths of all lines outside housing areas (only portions outside housing areas are taken). In order to calculate the avoidable cost of a line for a given length, its length outside the housing area was multiplied by the unit cost per meter.

TERA's assessment

As a result of these changes, more costs were allocated to longer lines. The OH CAPEX was allocated only over parts of lines outside housing areas and it was identified as fully avoidable. Consequently, TERA noted that the cost per meter significantly increased since 2009/10.

TERA undertook the following numerical analysis. *Figure 3* shows cost-line length relationship using an example of two MDFs that had the highest direct net cost in the Customer Model in eir's initial 2010/11 USO funding application. Compared to eir's 2009/10 cost distribution which depended on line lengths, the methodology used by eir in the initial 2010/11 USO funding application allocates more costs to longer lines.

Figure 3. Access cost – 2009/10 line length relationship Vs eir's 2010/11 initial USO funding application: ✂

Source: Customer Models, TERA analysis

Figure 4 shows the proportion of OH CAPEX and overhead OPEX ("OH OPEX") in the access cost per line for ✂. This analysis confirmed that the costs are much higher for long lines in eir's initial 2010/11 USO funding application than in TERA's assessment of eir's 2009/10 USO funding application as a direct result of the change in the allocation of distance sensitive OH OPEX and distance sensitive OH CAPEX to isolated houses.

Figure 4. ✂ access cost structure depending on the number of lines in the 2010/2011 initial submission

Source: Customer Models initial 2010/11 application TERA analysis

TERA also used the 2016 CAM model as a further cross check on the aforementioned analysis.

Using the 2016 CAM, TERA has calculated the average cost of customers using 10% intervals for MDF ✂[38].

While the absolute cost value of the USO model cannot be directly cross checked with the 2016 CAM, the cost distribution between the lines within an MDF can be cross checked. Figure 5 shows the results of this analysis. All the phone lines are divided in 10 groups, from the less expensive to the most expensive. For each group, the average avoidable cost is calculated. The left graph draws the absolute value of cost per line for each lines group by the interval: from the 10% least expensive to the 10% most expensive. The graph on the left is normalized: the average cost per line of the MDF is taken to be 1.

This clearly demonstrated that the 10% most expensive lines in eir's 2010/11 initial USO funding application are ✂ more expensive than the MDF average. This result appears inconsistent with the 2016 CAM. This problem does not appear within the 2009/2010 USO model. Indeed, in the 2016 CAM the most expensive lines are only about ✂ more expensive than the MDF average which is similar to the 2009/2010 USO model.

Furthermore the number of lines connecting isolated housing corresponds to about ✂ of the total number of lines in MDF ✂[39]. The most expensive ✂ of lines contain these

[38] ✂

lines. It is therefore clear that lines attributable to isolated housing probably makes a line expensive: under eir's initial 2010/11 USO funding application, all the OH CAPEX was allocated to isolated houses.

Figure 5. Cost per line for each interval of 10% lines intervals for ✂ (with 2010/11 assumptions proposed initially by Eir)

✂

Source: Customer Model, TERA analysis

TERA reviewed eir's initial 2010/11 USO funding application and noted that it allocated OH CAPEX only to the portion of line lengths outside housing areas as the model considered that the overhead cables are more likely to be used for isolated hamlets.

TERA notes that it depends on each particular MDF: depending on the network configuration, some MDFs may use overhead assets mainly for isolated hamlets, while others may use them extensively also in housing areas. This is defined by the geographic configuration of a specific area and in particular by its density.

eir's initial 2010/11 USO funding application assumed that the final drop never uses overhead assets. However, in reality, eir network uses both overhead and underground assets for the final drop. TERA therefore considers that a portion of OH CAPEX should be used for the access line final drop.

TERA notes that the 2009 CAM takes into account these different aspects to determine the avoidability of costs in isolated areas. The 2009 CAM distinguishes between three types of costs:

- Costs to connect MDF;
- Costs to connect street cabinet; and
- Other costs.

In order to estimate avoidability of cost from the 2009 CAM, TERA has assumed that both 'Costs to connect MDF' and 'Costs to connect street cabinets' are unavoidable. Avoidability of OH CAPEX can be calculated for each MDF from the 2009 CAM and applied to the Customer Model.

TERA recommended that eir use the 2009 CAM to define the extent to which OH CAPEX is used inside and outside housing area, and which are used for the final drop. TERA's approach to achieve this may be summarised in four steps:

- For each MDF, calculate the percentage distribution of overhead (OH) assets in the 2009 CAM model between 4 categories: final drop in housing areas, final drop outside housing areas, non-final drop (distance sensitive) assets in housing areas, non-final drop (distance sensitive) assets outside housing areas.

[39] ✂

- Using these percentages, calculate OH CAPEX (Cable_OH and Poles) corresponding to each of the 4 categories: final drop in housing areas, final drop outside housing areas, non-final drop (distance sensitive) assets in housing areas, non-final drop (distance sensitive) assets outside housing areas.
- For the final drop, a distinction is therefore made between final drop in housing areas and final drop in isolated houses. Final drop cost in housing areas is then divided by the number of lines in housing areas, and similarly for isolated houses.
- Distance sensitive OH CAPEX inside housing area is divided by the total line length inside housing areas (portions of lengths inside housing areas for isolated hamlets); distance sensitive OH CAPEX outside housing area is divided by the total line length from the boarder of the housing area (portions of lengths outside housing areas).

eir then calculated avoidability of OH CAPEX for each MDF from the 2009 CAM and applied in the 2010/11 Customer Model.

TERA considered that it was necessary for eir to amend its initial 2010/11 USO funding application to reflect the 2009 CAM. Having reviewed eir's final 2010/11 USO funding application, TERA is now satisfied that it:

- aligns with the 2009 CAM model;
- takes into account the reality of deployment, and in particular, recognises that the access line final drop may have a combination of both underground and overground CAPEX costs.

TERA is of the view that eir's final 2010/11 USO funding application reflects the OH CAPEX changes recommended by TERA and is therefore reasonable. TERA is of the view that this cost allocation methodology is in accordance with the requirements of Decision 25.

7.2.3.2. Non-overhead CAPEX

Changes in the assumptions used

Non-overhead CAPEX includes underground cables, ducts and trenches and radios assets.

In the eir's initial 2010/11 USO funding application, non-overhead CAPEX was divided between final drop and non-final drop assets. The percentage of the final drop asset is calculated from the 2009 CAM.

eir's initial 2010/11 USO funding application assumed that non-overhead network is used only inside housing areas[40] and it is partially avoidable: the share of avoidable

[40] If an MDF has no housing area, this CAPEX is allocated to isolated hamlets.

cost is ✂ for underground cables and ✂ for ducts and trenches. The unit cost per meter is therefore calculated as the total non-overhead CAPEX of a given MDF divided by the total length of lines inside housing areas (only portions of length inside housing area is taken). Then, in order to calculate the avoidable cost of a line for a given length inside housing area, its length is multiplied by the unit cost per meter.

eir's initial 2010/11 USO funding application allocated non-overhead OPEX only to the portion of line lengths inside housing areas as eir considered that the underground cables are more likely to be used in more densely populated areas, corresponding to housing areas.

TERA's assessment

The distribution of non-overhead CAPEX between housing areas and isolated hamlets depends on the configuration of each particular area. The level of avoidability in respect of isolated houses has been calculated for underground assets by using the 2009 CAM, in the same way as for the OH CAPEX.

Based on the same rationale outlined for OH CAPEX in the preceding section of this report, TERA recommended that eir change the cost avoidability assumptions used in its initial 2010/11 USO funding application to take account of the 2009 CAM. eir has made these changes in its final 2010/11 USO funding application.

As radio network assets are not used to terminate copper lines at buildings, it is considered that Radio CAPEX cannot be used for the final drop network but only for the distribution network. All the radio costs are allocated to isolated houses because radio is used only in low-density areas such as remote islands.

Having reviewed eir's final 2010/11 USO funding application, TERA is now satisfied that it:

- aligns with the 2009 CAM model; and
- takes into account the reality of deployment, and in particular, recognises that the access line final drop may have a combination of both underground and overhead CAPEX costs.

TERA is of the view that eir's final 2010/11 USO funding application reflects the non-OH CAPEX changes recommended by TERA and is therefore reasonable. TERA is of the view that this cost allocation methodology is in accordance with the requirements of Decision 25.

7.2.3.3. OPEX

Changes in the assumptions used

In eir's initial 2010/11 USO funding application, the categorization of OPEX is dependent on the underlying asset type: distance sensitive OPEX is divided between OH OPEX (including MLC, MLG, MLO, MRO and MVO, all ✂avoidable), other OPEX

(MLU, MRU and MVU, ✂avoidable) and repair. OH OPEX and other OPEX are then treated in the same manner as OH CAPEX and other CAPEX.

Repair is ✂avoidable. It is distributed over all the lines in proportion of their length.

TERA's assessment

Having reviewed the approach used in eir's initial 2010/11 USO funding application, TERA recommended that eir allocate OPEX between final drop and non-final drop, and between housing areas and isolated houses by using allocation keys based on the cost per line (determined by the number of lines that utilise a same path to the exchange, similar to the analysis performed by TERA in Figure 5) from the 2009 CAM.

TERA considers that OH-related OPEX (such as MLO, MRO, MVO) should be allocated based on the OH allocation keys. Other OPEX (such as MLU, MRU, and MVU) should be allocated based on the underground ("UG") allocation keys. Repair-access costs concern both OH and UG networks so the allocation of OPEX between final drop and non-final drop assets should be based on coefficients mixing OH and UG.

TERA is of the view that eir's final 2010/11 USO funding application reflects the OPEX changes recommended by TERA and is therefore reasonable. TERA is of the view that this cost allocation methodology is in accordance with the requirements of Decision 25.

7.3. Conclusion

TERA is satisfied that eir's final 2010/11 USO funding application reflects the changes to the Customer Model recommended by TERA following TERA's review of eir's initial 2010/11 USO funding application.

TERA is of the view that the Customer Model is now acceptable and in accordance with the requirements of D04/11, and in particular Decisions 10, 12, 13, 14 and 25.

8. Payphone Model

8.1. Section Overview

This section reviews the Payphone Model in eir's 2010/11 USO funding application to check that it is in accordance with Decision 16 and 27 of D04/11.

> ***Decision 16:*** *In respect of mandatory public payphone provision, the net cost calculation shall be based on the total avoidable cost, minus the total revenues foregone. Furthermore, for each public payphone that is connected to a single exchange site, the access cost for a payphone will be the same access cost as that of any line at the exchange site on which it is connected. The avoidable access costs shall be calculated as an estimate per line at the exchange site to which the public payphone is connected. If the number of uneconomic payphones is considered excessive and unreasonable, ComReg may adjust the net cost calculation to reflect appropriate payphone coverage (in areas where they are mandatory).*

> ***Decision 27:*** *With respect to the provision of public payphones which are "uneconomic", sufficient detail shall be provided on their geographic location and proximity of other public payphones operated by the USP (irrespective of their profitability).*

TERA's assessment is that the calculated direct net cost of the Payphone Model is €185,310.

8.2. Payphone Model Assessment

8.2.1. Methodology

The Payphone Model calculates the cost to eir of providing uneconomic payphones in economic areas. Only those payphones that are subject to USO obligations may be considered as part of the USO net cost. For each USO payphone, the corresponding cost and revenue is calculated.

The costs include: access costs of the phone line and of WIFI (when relevant, considered to be already captured in the BSA line costs), core cost, cost of printing and selling phone cards, and the cost of payphone maintenance.

The revenues include: all the revenues from the payphone calls, including national and international, WIFI revenue and advertisement revenue.

The Area Model and changes in the treatment of data, as outlined earlier in this report, impact the Payphone Model as it uses inputs from the Area Model (i.e. average costs per line in an MDF, and whether MDF is economic or uneconomic).

The Payphone Model has a total of ✂ payphones, 1,396 of which are USO payphones (i.e. payphones with unrestricted access, as opposed to payphones on private premises). eir in its final 2010/11 USO funding application has included the direct net cost of these USO 1,396 USO payphones.

ComReg has advised TERA that an uneconomic payphone should not be considered a part of USO where eir had permission to remove the uneconomic payphone, but has chosen to retain it. Prior to 2014, eir had to (1) pre-notify planned payphone removals on its website and (2) on the payphone itself. If eir received no objections, eir was then entitled to remove the relevant payphone.

In 2006 ComReg published guidelines on removal of payphones (ComReg Information Notice 06/14) which provided that single site location payphones may be removed in certain circumstances, including where there is no longer a 'reasonable need'. 'Reasonable need' was not defined but the guidelines stated that relevant to this was whether there were objections to the proposed removal of the specific payphone.

eir removed ✂ payphones in 2007/2008 and a further ✂ payphones in 2009.

TERA is of the view that eir has undertaken the necessary rationalisation measures prior to 2010/11, and that it is therefore correct to include all the uneconomic payphones active in 2010/11 in the direct net cost calculation.

Some changes have been made to the Payphone Model between eir's initial 2010/11 USO funding application and eir's final 2010/11 USO funding application. TERA noted that these are not methodological changes, rather changes to calculations and data entry as follows:

- As outlined in eir's USO Model Documentation, the maintenance costs of payphones are allocated over payphones by using "opex for access lines within MDFs" as an allocation key. However, TERA identified that the calculations did not use the correct allocation key and eir amended the calculations in eir's final 2010/11 USO funding application.[41]
- eir identified a mistake in the extraction of data on the commission and production costs of cards in May and June 2011[42] which resulted in an over-estimation of these costs. eir, in its final 2010/11 USO funding application set these costs to zero. This is a conservative cost assumption and is therefore accepted by TERA.

As a result of the above adjustments (and other changes in the input data to the Area Model as described in the previous sections), the payphones direct net cost for 2010/2011 decreased from €209,554 to €191,831 between eir's initial and final 2010/2011 USO funding applications. The number of uneconomic payphones has decreased accordingly.[43]

One additional adjustment has been made by TERA in TERA's assessment of the Payphone Model relating to advertising revenue. The Payphone Model calculates the net cost of uneconomic payphones both, excluding advertising revenue and, including

[41] 2010_11_Eir_PP_Model_v2_8 – FINAL, spreadsheet I_MDF_Mapping, column L: =VLOOKUP(J7;I_AM!$D$7:$J$1070;6;FALSE)*K7 replaced by =VLOOKUPV(J7;I_AM!$D$7:$J$1070;7;FALSE)*K7.

[42] 2010_11_Eir_PP_Model_v2_8 – FINAL, spreadsheets I_Com_Costs and I_Prod_Costs.

[43] From ✂ payphones to ✂ payphones

advertising revenue. The inclusion of advertising revenues leads to a slightly lower direct net cost and a slightly lower number of uneconomic payphones.

As advertisement revenue is a revenue that wouldn't be obtained by eir in the absence of its provision and service of uneconomic payphones, it is necessary to include this revenue in the direct net cost.

eir chose to exclude the advertising revenue in eir's final 2010/11 USO funding application. TERA is of a different view and included this revenue which amounts to €6,521 in TERA's assessment.[44]

This adjustment led to a decrease in the calculated direct net cost of the Payphone Model from €191,831 to €185,310.

8.2.2. TERA's assessment of the direct net cost claimed

TERA's assessment of the calculated direct net cost of uneconomic payphones resulted in a reduction to the direct net cost from €191,831 in eir's final 2010/11 USO funding application, to €185,310.

The number of uneconomic payphones has decreased accordingly (see Table 14 below).

TERA observes that the net cost of payphones increased significantly between 2009/10 and 2010/11, and that both the number of uneconomic payphones and the average net cost per payphone have increased.

Table 14. Net cost, number of uneconomic payphones and net cost per payphone (€)

✂

Source: Payphone Models 2010/11

The main factor influencing the increase in the net cost is the decrease in the revenue due to a call volume decrease from ✂. Indeed, between 2009/10 and 2010/11, the average revenue per uneconomic payphone has decreased from ✂

There has also been an increase in the maintenance costs. The maintenance is outsourced and a yearly fixed rate is paid by eir. The per-payphone rate has increased by ✂ in 2010/11 (✂).

Table 15. Payphone maintenance costs (€)

✂

[44] eir confirmed to ComReg by email that it would not disagree with ComReg's decision to include these advertising revenues in the Payphones Model for 2010/11.

Source: Payphone Models 2009/10 and 2010/11

TERA has checked for consistency between the results of the Payphone Model and the calculations of the intangible marketing benefit related to payphones, and the results are presented in section 11.4.3.

8.3. Conclusion

TERA has adjusted eir's final 2010/11 USO funding application Payphone Model calculations as appropriate, leading to a decrease in the calculated direct net cost of the Payphone Model to €185,310.

TERA is of the view that in respect to the provision of public payphones which are "uneconomic", sufficient detail was provided by eir on their geographic location and proximity of other public payphones operated by eir (irrespective of their profitability) in accordance with D04/11, and in particular Decision 27.

TERA is of the view that following TERA's adjustment of the Payphone Model in eir's final 2010/11 USO funding application, the calculations are in accordance with D04/11, and in particular Decision 16.

9. Directories Model

9.1. Section overview

This section reviews the Directories Model element of eir's 2010/11 USO funding application to check that it is in accordance with Decision 17 of D04/11.

> ***Decision 17:*** *For Directories, the net cost calculation shall use the total avoidable cost, minus total revenues of this service.*

TERA's assessment is that the calculated direct net cost of the Directories Model is zero.

In 2010/2011, eir as USP was required to:

- keep a record in the National Directory Database of all subscribers of publicly available telephone services in Ireland (including those who have not refused to be included in that record) and allowing access to any information contained in such a record to any such other undertaking, or any person; and
- provide end-users with a comprehensive printed directory of subscribers, free-of-charge, and updating it at least once a year.

eir's final 2010/11 USO funding application did not include any costs or revenues of the National Directory Database in the Directories Model as the Frontier Report stated that it was profitable. eir's rationale for this is that the direct net cost of national directory database would not increase the total direct net cost of the USO services overall and may therefore be set at zero.

With regard to printed telephone directories, as summarised in the Frontier Report, eir has sub-contracted its USO under a commercial agreement with Truvo (business name of FCR Media Limited) ("Truvo") since June 2002. The commercial relationship may be summarised as follows:

- The contract between Truvo and eir ran for 7 years from June 2006 to June 2013;
- Truvo is obliged to make the following payments to eir:
  - An annual Basic payment to eir of ✂,
  - ✂ of revenues earned from the eir Phone Directory or an annual minimum advertisement fee of ✂ from Truvo;
  - Accelerated payments, if relevant;
- Truvo has the sole and exclusive rights to publish the White Pages directories on behalf of eir;
- Printing and distribution costs are carried entirely by Truvo (estimated cost of between ✂ to ✂ pa);

- If material change in regulatory obligations arises, increased costs in excess of ✂ per annum will be shared equally between the parties; any costs below this figure are the sole responsibility of Truvo;
  Truvo has the sole and exclusive right to sell enhancements in the White Pages printed directory and is entitled to retain all such revenues; and
- eir is entitled to brand positioning on the covers and to a number of pages in the directories as described below in exchange for certain payments.

The costs and revenues flowing from this agreement for 2010/11 are the basis for the calculation of the net cost of the printed directory of subscribers.

Frontier's report states that the calculation of the National Directory Database direct net costs is based on data from eir's accounts. eir, as noted above, did not include any costs or revenues of the National Directory Database in the Directories model.

As the direct net cost of the National Directory Database was profitable, the direct net cost of national directory database would not increase the total direct net cost of the USO services overall and TERA agrees that the direct net cost of directories can be set at zero.

As the revenues in the Directories Model are significantly higher than the costs, eir concludes that "*Directories is an economic or profitable business and not counted towards the total direct net cost estimate*".[45] eir has therefore set the direct net cost of the directory service to zero.

Table 16. Directories Model

✂

Source: Directories Models 2009/10 and 2010/11

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9.2. Directories Model Assessment

9.2.1. Methodology

The Directories Model in eir's final 2010/11 USO funding application has shown a profit. eir has concluded that the direct net cost of this USO component is therefore equal to zero. eir states that to consider a net profit as a negative cost would be inconsistent with ComReg's methodological approach.

In TERA's view the calculated direct net cost of the Directories Model is ✂, and as it is profitable TERA agrees that the direct net cost of directories should be set at zero. This reflects that the annual payment from Truvo to eir in 2010/11 exceeds the annual payment from eir to Truvo, meaning that the direct net cost of directories would not

[45] Frontier Report, page 132 and 133.

increase the direct net cost of the USO services overall. Therefore it is reasonable to set the net cost at zero.

9.2.2. TERA's Assessment of the direct net cost claimed

✂, following TERA's review of eir's final 2010/11 USO funding application, TERA sought further details and a breakdown of the costs and revenues in the Directories Model. TERA in particular requested information on the type of brand positioning eir obtained and the value of any such payments.

eir confirmed that it pays Truvo an advertising charge for the feature of its logo on the covers, spines and within some of the pages in the White Pages printed directories phone book (✂in 2010/11). This advertising charge is significantly lower than what Truvo is paying to eir (see Table 16) .

The inclusion of the advertisement charge in the USO direct net cost can be viewed in two ways:

- On the one hand, similar to the treatment of marketing benefits from payphones, the benefit may be considered as approximately equal to the advertising charge. Therefore, the benefit from advertisement could be considered as offset by the advertising charge. As a result, the advertising charge would not be included in the calculation of the direct net cost.
- On the other hand, the advertising on the directories covers may be viewed as an intrinsic part of the outsourcing agreement. In this case, the advertising charge cannot be separated out and if the charge was not paid by eir, it would likely lead to the overall outsourced costs of the service increasing. Thus, the charge should be included as a cost and deducted from the revenues eir receives from Truvo.

The benefits from advertising in the printed directories are accounted for as advertising intrinsic to the commercial contract where the cost represents the benefit.

TERA notes that brand positioning of eir's logo and name in the directories book, could, if there was evidence, show that the cost did not adequately reflect the benefit and generates an intangible benefit for eir, similar to the one from displaying a logo on the payphones. If so, this benefit could in principle be included in the intangible benefits calculation however, for the purposes of this application it has been included in the direct net cost, it should not be included in the intangible benefits as Decision 36 provides that there must be no double counting. In any case, the inclusion or omission of the advertising charge does not change the total direct net cost in 2010/11.

✂[46]

[46] ✂

9.3. Conclusion

TERA is of the view that the advertising charge paid by eir to Truvo should be included in the Directories Model as it is an intrinsic part of the outsourcing agreement. This assessment is consistent with D04/11 and in particular with Decision 17. Directories in 2010-2011 were profitable irrespective of exclusion or inclusion of advertising charges, and the corresponding net cost remains at zero.

10. Disabled Users' Services Model

10.1. Section Overview

This section reviews the Disabled Users' services model

Services Model element of eir's 2010/11 USO funding application to check that it is in accordance with Decision 18 of D04/11.

> ***Decision 18:*** *The net cost for the provision of specific USO services for disabled users, shall be calculated using the total avoidable cost minus the associated total revenues foregone. The avoidable cost shall include the cost associated with the provision of USO special services over the standard minimum level of service (e.g. minicom relay services, free directory enquiries, etc) and specialised equipment (e.g. restricted vision phones, inductive couplers, etc) minus the total revenue which is incremental to the total revenue associated with the standard minimum level of service to disabled users (which is appropriate to all operators).*

In 2010/2011 eir, as USP, was required to:

- provide a dedicated section of the eir website with information on the services which are of particular interest to people with disabilities
- maintain a Code of Practice concerning the provision of services for people with disabilities
- provide the specific services for users who:
    - are hearing impaired,
    - are hearing and/or speech impaired;
    - have limited dexterity or mobility;
    - have restricted vision; and
    - are unable to use the phone book due to a disability.

TERA's assessment calculates the final calculated direct net cost of the Disabled Users' Services Model of eir's 2010/11 final USO funding application to be €58,935. This figure reflects the amount eir claimed in its final 2010/11 USO funding application.

10.2. Disabled Users' Services Model Assessment

The results of the direct net cost calculation for services for disabled users are presented in Table 17 (no changes were made between eir's initial 2010/11 USO funding application and eir's final 2010/11 USO funding application).

This obligation comprises the following services provided to disabled users by eir:

- Relay service : Translation of voice message to text and sending of that text to the phone of the customer of the operator and vice versa. In addition to a special rebate (the STEP[47] rebate).
- Special phones provision: Supply of special phones to disabled customers with dedicated features.
- Free DQ: eir provide free directory enquires for customers that cannot use the phonebook due to a sensory or physical disability or medical condition.
- Braille Provision: reading bills and provision of bills in Braille.

As shown in table 17, the main change in net cost between 09/10 and 10/11 is attributable to the change in the net cost of free DQ, which has increased due to a doubling in the underlying cost of the provision of directory enquiries which is not offset by a reduction in the number of printed bills.

Table 17. Direct net cost of services provided to disabled users

Source: 2009/10 & 2010/11Disabled Users' Services Models

10.3. Conclusion

TERA is of the view that the methodology in eir's final 2010/11 USO funding application Disabled Users' Services Model is in accordance with Decision 18 of D04/11 and that the calculations are correct for each of the following components:

- Text relay;
- Free directory inquiry; and
- Braille bills; and
- specialised equipment.

TERA is of the view that the above approach of calculating costs and revenues is in accordance with D04/11 and in particular with Decision 18.

[47] Scheme for Text Telephone Equality of Payment is provide to account for the additional time it takes to make a text telephone call compared to an ordinary call.

11. Direct Net Cost Overlap with Intangible Benefits Calculations

This section assesses any potential overlap between direct net cost estimates and intangible benefits estimates to ascertain whether there is any evidence of double counting, the avoidance of which is set out in Decision 36 as a key principle in the identification of benefits.

> ***Decision 36:*** *For the identification of the benefits, ComReg will observe the following key principles:*
>
> *• The benefits represent effects on a USP of providing the USO which have not been accounted for in the direct costing methodology (for example, any benefits that are directly identifiable to specific revenue streams, including indirect and replacement calls revenues are excluded having been covered by the direct net cost calculation).*
>
> *• Avoid the double counting of any benefits.*
>
> *• The benefits are those accruing to the USP, as a consequence of being the designated USP (any benefit arising from the fact that the USP is a large player in the market is to be excluded from the calculations).*

TERA examined each of the four sources of the intangible benefits model, as follows:

- enhanced brand recognition (section 11),
- ubiquity (section 11.2),
- life cycle benefits (section 11.3),
- and marketing benefit (section 11.4).

TERA checked that the correct input values for the intangible benefits model are sourced from the direct net cost USO model and correspond to the outputs of that model.

TERA also undertook two main exercises to check for overlaps between the direct net cost estimates and the intangible benefits calculations:

- check that the intangible benefits are not double counting items already accounted for in direct net cost model; and
- check that the relevant elements are taken into account, either in the direct net cost USO Model, or in the intangible benefits model, as required by the Decision D04/11 (Decision 36).

11.1. Enhanced Brand Recognition

11.1.1. Double counting

TERA assessed whether the methodology used to evaluate the enhanced brand recognition benefit could create any double counting issues.

11.1.2. Inputs used to estimate intangible benefits

The enhanced brand recognition model uses inputs from the Area Model.

The data on the number of lines in economic and uneconomic areas used in the enhanced brand recognition model corresponds to the number of lines extracted from the Area Model (table below).

Table 18. Number of lines used to estimate enhanced brand recognition benefit

Source: Area Model 2010/11

Other inputs – economic/uneconomic indicators of areas, number of services for the financial year, annual revenue from access services, one-off revenue from access services, revenue from core network services, avoidable costs from access services, and avoidable costs from core network services – have also been extracted correctly from the Area Model.

11.1.3. Conclusion

TERA considers that there is no double-counting between the direct net cost model and enhanced brand recognition model, and the inputs to the enhanced brand recognition model are extracted correctly.

11.2. Ubiquity

11.2.1. Double counting

TERA assessed whether the methodology used to evaluate the ubiquity benefit could create any double counting issues.

11.2.2. Inputs used to estimate intangible benefits

The ubiquity model uses inputs from the Area Model.

The data on the number of lines in economic and uneconomic areas used in the ubiquity model corresponds to the number of lines extracted from the Area Model (table below).

Table 19. Number of lines used to estimate ubiquity benefit

Source: Area Model 2010/11

Other inputs – economic/uneconomic indicators of areas, number of services for the financial year, annual revenue from access services, one-off revenue from access services, revenue from core network services, avoidable costs from access services, and avoidable costs from core network services – have also been extracted correctly from the Area Model.

11.2.3. Conclusion

TERA is of the view that there is no double-counting between the direct net cost model and ubiquity model, and the inputs to the ubiquity model are extracted correctly.

11.3. Life Cycle Benefits

11.3.1. Double counting

Life cycle benefits consist of two components:

1) benefit from uneconomic areas becoming economic,
2) benefit from uneconomic customers becoming economic.

TERA considers that there is no double counting between the direct net cost model and the life cycle benefits model.

11.3.2. Inputs used to estimate intangible benefits

eir explains that in order to estimate the benefit related to uneconomic areas the Area Model is run two times: with the life-cycle mark-up benefit parameter equal to 0% and to ✂%. The difference between two results corresponds to the life cycle benefit. TERA has checked how the results of the Area Model change with the change of the parameter (see table below).

Table 20. An extract from the parameters of the Area Model

Modelling / financial year	2010 / 2011
Currency unit	EUR
Cost of capital	10.21%
Days in a year	365.00
Days in a month	30.42
Life-cycle benefit factor	0.00%

Source: Area Model

TERA confirms that the direct net cost of uneconomic areas is equal to €183,793 when the parameter is set to zero and to €179,540 when the parameter is set to ✂% (see table below). The numbers of the life cycle benefits of uneconomic areas are therefore correct.

Table 21. Area Model results without and with life cycle mark-up

Estimated net cost from the Area Model (without mark-up)	€ 183,793
Estimated net cost from the Area Model (with mark-up)	€ 179,540

Source: Oxera Intangible benefits report 2010/11

11.3.3. Conclusion

TERA is of the view that there is no double-counting between the direct net cost model and life cycle model, and the inputs to the life cycle model are extracted correctly from the Area Model.

11.4. Marketing Benefits

11.4.1. Double counting

Marketing benefit is calculated as an advertising benefit from payphones, i.e. benefit due to corporate branding or logo display.

11.4.2. Inputs used to estimate intangible benefits

As explained in section 8, the number of uneconomic payphones is ✂ in 2010/2011. Out of these ✂ payphones, only ✂ are suitable for advertisement. The average advertisement revenue per payphone is ✂. As we assume that the value of corporate branding or displaying eir's logo on a payphone should be equal to the price of an advertisement that a third-party company would pay, the marketing benefit is equal to ✂* ✂= €6 351.

It is important to note that the advertisement revenue from payphones is already included in the direct net cost. Marketing benefits is an intangible (non-material) benefit from logo display that should be calculated separately.

11.4.3. Conclusion

TERA considers that there is no double-counting between the direct net cost USO model and the intangible marketing benefits model, and the inputs to the marketing benefits model (after calculating the net cost including advertising revenues) are extracted correctly from the Payphone Model.

11.5. Conclusion

The inputs of the intangible benefits models correspond to the outputs of the direct net cost models.

There is no double-counting between the direct net cost and the intangible benefits, therefore TERA is of the view that the calculated direct net cost in eir's final 2010/11 application is in accordance with the principles set out in Decision 36 of D04/11.

TERA is of the view that the inputs of the intangible benefits model correspond to the outputs of the direct net models.

TERA is also of the view that there is no double counting between the direct net cost and the intangible benefits, in accordance with Decision 36.

12. Appendix 1: Referenced Decisions in ComReg D04/11 "Costing of universal service obligations: Principles and Methodologies", 31 May 2011

Decision 1

Decision 1: *The HCA methodology, properly adjusted for efficiencies and taking account of the costs that could have been avoided by the USP without having the USO, is the cost methodology that must be used to calculate the net cost of the USO.*

Decision 2

Decision 2: *USO net costs shall be calculated on the basis of "all" capital costs and "all" operating costs that could be avoided on a HCA basis, as if the provision of services to uneconomic customers by a commercial operator was not required under a USO. It is only the portion of costs, both capital and operational expenditure for the given financial year, that can be directly attributed to the USO service (i.e. the service activity creates the cost) and which could have been avoided without the USO, which are included in the net cost calculation.*

Decision 3

Decision 3: *USO revenues shall be calculated on the basis of both the direct and indirect revenues that an operator would forego as a result of ceasing to provide services to uneconomic customers.*

Decision 4

Decision 4: *Direct revenues shall include those revenues which are directly invoiced to a customer for the services provided directly by the USP. They include:*

- *One-off connection charges: where the revenue should be allocated over the expected life of the customer. In circumstances where a line is permanently disconnected, the remaining unallocated one-off connection charges should be allocated to that year of disconnection;*
- *Revenues associated with access (e.g. line rental);*
- *Calls (e.g. local, national, mobile, international, directory enquiries ("DQ") and premium rate services); and*
- *Complementary services, such as, broadband services.*

Decision 5

Decision 5: *Direct revenues shall include those revenues from an OAO (who is indirectly providing the service to the customer) using the USP's wholesale services and include, amongst other things:*

- *Wholesale access (single billing wholesale line rental ("SB-WLR");*
- *Wholesale calls; and*
- *Complementary wholesale services, such as Bitstream and Local Loop Unbundling ("LLU") etc.*

Decision 6

Decision 6: *Indirect revenues shall include those revenues which are not directly invoiced to a customer for the services provided directly by the USP. They include:*

• Wholesale interconnection revenues: fixed termination and transit services as a result of inbound calls from another fixed / mobile networks, where an OAO is invoiced for terminating and transiting a call on the USP network;

• Non-geographic numbers (e.g. 1800, 1850, 11811 and 1890 numbers);

• Economic USO customer calls to an uneconomic customer: firstly, the revenue of the economic customers' calls to uneconomic customers shall be allocated to the uneconomic customer. If the uneconomic customer is now economic, as result of the allocation, then a second stage is required to ensure that this treatment does not make the previously economic customer into an uneconomic customer as a result. If as a result of this second stage the economic customer becomes uneconomic, then it is only that portion of revenue which the economic customer can spare without making themselves uneconomic that should be allocated;

• Leased Lines: where initially all revenues associated with the leased line are allocated to the uneconomic line. If the uneconomic point is now economic, as a result of the allocation, then a second stage is required to ensure that this treatment does not make the previously economic point into an uneconomic point as a result. If as a result of this second stage the economic point becomes uneconomic, then it is only that portion of revenue which the economic point can spare without making themselves uneconomic should be allocated; and

• Replacement calls: where a net cost exists, replacement calls shall be estimated and added to the net cost calculation (but only in circumstances where "uneconomic" areas or customers have been firstly identified as commercially uneconomic).

Decision 7

Decision 7: *Where it is clearly demonstrated that due to a lack of information beyond the control of the USP, that it is not practicable for indirect revenues to be calculated in accordance with Decision No. 6, the USP may use an alternative approach, provided that it is properly supported with reasonable assumptions.*

Decision 8

Decision 8: *The avoidable costs included in the net cost calculation, shall be those costs reflecting the provision of the USO which a commercial operator would not ordinarily have provided, and which were incurred in the most efficient way. These costs shall relate to: (a) the avoidable capital costs associated with CAPEX i.e. depreciation; (b) OPEX; and (c) overheads for the appropriate financial year.*

Decision 9

Decision 9: *ComReg may use a number of methodologies to determine the appropriate level of costs that would have been incurred by an efficient operator, in order to determine the quantum of adjustments necessary to the USP's net cost calculation. These methodologies may include, but are not limited to, the use of:*

- *The review of supporting documentation available, such as: cost-benefit analysis reports; engineering reports; fault reports of geographical areas, and other documents in relation to the business case / investment decisions associated with the network roll-out and upgrade;*
- *A line fault efficiency rate: applying the national LFI target rate (corresponding to the financial year in question) at a regional level (and allowing for appropriately reasoned variances) ;*
- *Independent survey report regarding the USP's efficiency;*
- *Regulatory decisions from other jurisdictions that provide relevant precedents and benchmarks; and*
- *The development of a model to assess the appropriateness of the efficiency adjustment proposed by the USP.*

Decision 10

Decision 10: *The net cost calculation shall not include those customers who were originally considered "uneconomic" but who have now become profitable. The net cost calculation also does not include those customers attained as a direct result of a competitive tendering process (who are deemed "uneconomic").*

Decision 11

Decision 11: *Uneconomic areas shall be identified at an MDF level.*

Decision 12

Decision 12: *An average depreciation charge for each class of network element (based on an average cost and asset age) shall be developed by geo-types (e.g. urban, sub-urban, rural etc.). The USP may allocate the relevant depreciation charge (as reconcilable to the HCA accounts and taking account of the principle of avoidable costs) for each exchange area based on the asset requirements as determined by the Copper Access Model (as updated or similar modelling tool). The calculation must be sufficiently granular to allocate costs only to those network elements actually used by users who are potentially uneconomic. In making this allocation, the USP should draw on, and be prepared to substantiate its investment profile / decision making, works-orders etc., so as to ensure that the allocation is appropriate (i.e. the USP should satisfy itself that in making an allocation to an MDF area, it has not allocated costs which are not reflective of the USP's investment profile in that MDF area).*

Decision 13

Decision 13: *Uneconomic customers in economic areas shall be identified based on universal account numbers ("UANs"). However, if ComReg is satisfied, because of a lack of information beyond the control of the USP, that it is not practicable to identify uneconomic customers by UAN, the USP must demonstrate that the use of an alternative approach has the equivalent effect of identifying those customers.*

Decision 14

Decision 14: *The USP may calculate uneconomic customers in economic areas using a probability analysis. However, the identification and allocation of these costs must be consistent with ComReg's decision outlined in Decision No. 12.*

The parameters and assumptions used in the probability analysis must be clearly documented and duly reasoned as to the circumstances why the USP considers the customer uneconomic.

Decision 15

Decision 15: *During the course of ComReg's assessment of a USO funding application, a number of sample "reality" checks will be undertaken. If material discrepancies are found, ComReg may: require a full assessment for those exchange areas claimed to be uneconomic or include uneconomic customers; apply a proportionate adjustment to the net cost calculation (pre-intangibles); or reject the entire USO funding application (on the basis that the discrepancy is of a magnitude which would render the application not fit for purpose).*

ComReg as part of its assessment process, will reserve the right to further interrogate any rationale provided by the USP in relation to uneconomic areas and uneconomic customers and to undertake its own assessment regarding the appropriateness of these net costs..

Decision 16

Decision 16: *In respect of mandatory public payphone provision, the net cost calculation shall be based on the total avoidable cost, minus the total revenues foregone. Furthermore, for each public payphone that is connected to a single exchange site, the access cost for a payphone will be the same access cost as that of any line at the exchange site on which it is connected. The avoidable access costs shall be calculated as an estimate per line at the exchange site to which the public payphone is connected. If the number of uneconomic payphones is considered excessive and unreasonable, ComReg may adjust the net cost calculation to reflect appropriate payphone coverage (in areas where they are mandatory).*

Decision 17

Decision 17: *For Directories, the net cost calculation shall use the total avoidable cost, minus total revenues of this service.*

Decision 18

Decision 18: *The net cost for the provision of specific USO services for disabled users, shall be calculated using the total avoidable cost minus the associated total revenues foregone. The avoidable cost shall include the cost associated with the provision of USO special services over the standard minimum level of service (e.g. minicom relay services, free directory enquiries, etc) and specialised equipment (e.g. restricted vision phones, inductive couplers, etc) minus the total revenue which is incremental to the total revenue associated with the standard minimum level of service to disabled users (which is appropriate to all operators).*

Decision 19

Decision 19: *USO funding applications shall be consistent and in accordance with this Decision and Decision Instrument.*

Decision 20

Decision 20: *USO funding applications shall be fit for purpose.*

Decision 21

Decision 21: *USO funding applications shall be based on annual information which coincides with the USP's financial year.*

Decision 22

Decision 22: *A declaration shall be signed off by the Board of Directors of the USP and it must accompany the application. (The required declaration is included in Schedule 1). Financial information shall be provided with an appropriate audit opinion or appropriate report, where the Auditor*[73] *(as approved by ComReg) has in no way assisted with the preparation of the USO funding application.*

Decision 23

Decision 23: *USO funding applications shall be supported by calculations in an MS Excel, or MS Access format, or alternative software which is reasonably capable of proper access and review.*

Decision 24

Decision 24: *Any models submitted in support of a USO funding application shall be transparent: there must be limited hard-coded cells (where cells are hard-coded a supporting reference document of such numbers must be provided and be capable of being reconciled and audited) and all numbers must be set out so that there is an audit trail present. The models submitted shall be set out in a clear and transparent manner, showing the separate calculations for each component (e.g. uneconomic areas, uneconomic customers, the provision of public pay telephones and specific services for disabled users). The calculations supplied must clearly set out the capital costs, operating costs, overheads, etc (including General and Administration — ("G&A") costs) and the methods adopted for the allocation of costs which are not directly related to the provision of the USO. Where uneconomic lines/areas are identified, the works orders associated with those areas for the year of assessment must be available upon request by the Auditor as supporting documentation for the USO application.*

Decision 25

Decision 25: *Applications shall, with reference to the supporting model clearly identify (by MDF or by geographic location as appropriate), with adequate reasoning and cogent evidence to justify that, those customers or groups of customers (i.e. area), that in the absence of the USO, the provision of the service would either not continue to be provided or would never have been provided, to that customer or groups of customers (i.e. area) by a commercial operator, or by the USP acting as a commercial operator. The USP must provide its commercial reasoning, including the respective parameters used in justifying its decision, including, but not limited to:*

- *The current loss-making status of those customers or areas;*
- *The local density of those customers or areas;*
- *The respective distances from exchange for uneconomic customers;*
- *The network infrastructure / technology used to serve those customers or areas; and*
- *Any other pertinent information the USP has used to influence its decision making process.*

Furthermore, applications must not include those customers attained through a competitive tendering process, or those customers which have now become economic, but who were previously considered uneconomic.

Decision 26

Decision 26: *There may be a requirement to make certain key data / workings publicly available and the USO funding application is deemed to be made by the USP on this understanding.*

Decision 27

Decision 27: *With respect to the provision of public payphones which are "uneconomic", sufficient detail shall be provided on their geographic location and proximity of other public payphones operated by the USP (irrespective of their profitability).*

Decision 28

Decision 28: *The model provided shall be supported by comprehensive documentation, clearly setting out and explaining all inputs (both financial and otherwise), efficiency adjustments applied, engineering rules applied, cost allocation methodologies employed, depreciation methodologies applied and assumptions made.*

Decision 29

Decision 29: *Sampling may be used for certain aspects of the modelling of net cost, for example the assumptions driving the size of replacement calls. Where sampling is used, samples must be sufficiently representative of the population being sampled. Where applicable, any application of a sampling methodology by the USP must accord with ComReg Decision D07/10.*

Decision 30

Decision 30: *USP funding applications shall, where applicable, accord with ComReg Decision No. D07/10 in relation to accounting separation.*

Decision 31

Decision 31: *The calculation of the benefits of the USO shall be completed by an external expert, independent of the USP. These calculations must clearly set out: the respective methodologies; assumptions and supporting documentation used at deriving the benefits of the USO.*

These calculations must provide: (a) the benefit (in monetary terms) that the USP derives as a commercial operator; (b) the benefit (in monetary terms) that the USP derives as a result of the USO; and (c) a reconciliation with reasoning to explain the incremental difference between (a) and (b).

Decision 32

Decision 32: *Eircom, the current USP, may submit a request for USO funding to ComReg in respect of its financial period 1 July 2009 to 30 June 2010. If Eircom intends to submit such a request to ComReg, it shall do so no earlier than 1 month, and no later than 6 months following the date of this Decision. ComReg may extend this deadline, but only where it considers that there are exceptional reasons for doing so.*

Decision 33

Decision 33: *Subsequent requests for USO funding by a USP(s) may be submitted to ComReg in respect of a relevant financial year. If a USP intends to submit such a request to ComReg, the USP(s) shall do so no later than 9 months following the end of the financial year in respect of which the request is intended to be made. ComReg may extend this deadline, but only where it considers that there are exceptional reasons for doing so.*

Decision 34

Decision 34: *ComReg Document No. 07/39 dated 2 July 2007 and entitled "The Provision of the Universal Service: Request for Funding by Eircom", is hereby revoked in its entirety.*

Decision 35

Decision 35: *The net cost calculation must assess the benefits, including intangible benefits, to the USP. ComReg will consider, at a minimum, the following benefits (as a result of the USO) for a USO net cost calculation:*

- *Brand Recognition.*
- *Ubiquity.*
- *Life-cycle.*
- *Marketing.*

Decision 36

Decision 36: *For the identification of the benefits, ComReg will observe the following key principles:*

• The benefits represent effects on a USP of providing the USO which have not been accounted for in the direct costing methodology (for example, any benefits that are directly identifiable to specific revenue streams, including indirect and replacement calls revenues are excluded having been covered by the direct net cost calculation).

• Avoid the double counting of any benefits.

• The benefits are those accruing to the USP, as a consequence of being the designated USP (any benefit arising from the fact that the USP is a large player in the market is to be excluded from the calculations).