An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Assessment of eir's 2015-2016 Universal Service Fund Application

Assessment of the net cost

Response to Consultation, Response to Further Consultation and Determination

Decision: D07/23
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Redacted Information

Please note that this Response to Consultation, Response to Further Consultation and Determination document and accompanying consultants' reports are non-confidential versions. Certain information has been redacted for reasons of confidentiality and commercial sensitivity, with such redactions indicated by the symbol "✂".

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

"2009 Copper Access Model (CAM)" refers to the previous iteration of the Copper Access Model, developed in 2009, which was used in eir's USO Funding Applications in respect of the financial years 2010/11, 2011/12, 2012/13, 2013/14 and 2014/15.

"**2015-2016 USO funding application**" is eir's USO funding application for the financial year 2015-2016 as submitted to ComReg in March 2017.

"2016 Copper Access Model (CAM)" means the model, as amended from time to time (subject to approval by ComReg), used by ComReg and eir. The model calculates costs based on both Top-Down HCA and BU-LRAIC+ costing methodologies. The operation and details of the Revised Copper Access Model are more particularly described in Chapter 5 of ComReg Decision D03/16.

"**calculated direct net cost**" means the final direct net cost figure allowable for an individual USO model, or the total calculated direct net cost, as the context requires.

"calculation errors" refers to the errors identified by TERA following a review of eir's Customer Model (as amended by TERA). These errors relate to the application of the 2016 CAM to eir's Customer Model (as amended by TERA) in the Proposed ComReg Methodology.

"Consultation 21/17" refers to ComReg's consultation and draft determination titled "Assessment of eir's 2015-2016 Universal Service Fund Application: Assessment of the net cost and unfair burden for the period 2015-2016, published 12 March 2021.

"Customer Model" refers to one of the five models within the USO model. It calculates the direct net cost of uneconomic customers in economic areas.

"**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.

"eir" means Eircom Limited.

"eir's Customer Model" means the Customer Model as submitted in the 2015-2016 USO funding application.

"eir's Customer Model (as amended by TERA)" means the Customer Model in eir's 2015-2016 USO funding application which has been amended by TERA, due to eir's

[1] Other terms and abbreviations used in this report have the same meaning as those listed in the Glossary of D04/11.

incorrect use of both the 2009 and the 2016 CAMs in this funding application. eir's Customer Model in its 2015-2016 USO funding application is amended through the use of the Proposed ComReg Methodology. The details of eir's incorrect use of both the 2009 CAM and the 2016 CAM in its 2015-016 USO funding application and of the Proposed ComReg Methodology (which amends eir's Customer Model) are more particularly described in Chapter 2 of Consultation 21/17.

"Further calculation adjustments" refers to the corrections/changes made by TERA to (i) the 2016 CAM inputs to eir's Customer Model (as amended by TERA), and (ii) Workbook A of eir's Customer Model (as amended by TERA).

"Further Consultation 23/11" refers to ComReg's further consultation titled "Assessment of eir's 2015-2016 Universal Service Fund Application: Further consultation on the assessment of the net cost for the period 2015-2016", published on 07 February 2023.

"Frontier" means Frontier Economics Ltd.

"**Frontier Direct Net Cost Report"** is the report prepared by Frontier (eir's consultants) outlining eir's calculations and methodology for the direct net cost for the financial year 2015-2016, March 2017.

"**Frontier Intangible Benefits Report"** is the report prepared by Frontier (eir's consultants) outlining eir's calculations and methodology for the intangible benefits for the financial year 2015-2016, as subm tted to ComReg in March 2017.

"L/N methodology" L means the line length of the access line (i.e. the length between the MDF and the section where the access line is starting beyond 3km); and N means the number of lines sharing the same assets (i.e. for each line it is the number of access lines going through the section where the line is starting).

"**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.

"Oxera" means Oxera Consulting Ltd.

"Oxera Intangible Benefits Report" refers to the report prepared by Oxera titled "Assessment of eir's calculation of intangible benefits for 2015-2016" which is included at Annex 4 of this document.

"Preliminary ComReg methodology" refers to the preliminary methodology developed by TERA in March 2017 setting out the manner in which the 2016 CAM could be applied to the Customer Model of eir's 2015-2016 USO funding application[2].

"Proposed ComReg Methodology" refers to the proposed methodology developed by TERA in December 2019 setting out the manner in which the 2016 CAM should be applied to the Customer Model of eir's 2015-2016 USO funding application[3].

"TERA Report" refers to the report prepared by TERA titled "Assessment of eir's USO funding application – direct net cost 2015-2016" which is included at Annex 2 of this document.

"TERA Report A" refers to the report prepared by TERA titled "Assessment of eir's 2015-2016 USO funding application – direct net cost 2015-2016: Further calculation adjustments to eir's Customer Model (as amended by TERA)" which is included at Annex 3 of this document.

"TERA Report B" refers to the report prepared by TERA titled "Assessment of eir's USO net cost calculation for the financial year 2015/2016, Report 2 - Response to eir's response to consultation", which is included at Annex 4 of this document.

"USO" means Universal Service Obligation(s) An undertaking that is designated as having a USO is obligated to provide a universal service.

"**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 End Users' Services). These individual direct net cost models may be referred to cumulatively as "USO models".

"USP" means Universal Service Provider. An undertaking(s) designated as having Universal Service Obligations

[2] Set out in ComReg's email to eir dated 21/3/17 file name "Tutorial: Using the bottom-up model for the USO net cost estimation" January 2017 Ref: 2016-62-ML-ComReg– USO 2014-2016.

[3] Set out in ComReg letters to eir dated (1) 24th December 2019 (Annex 1) and (2) 1st May 2020 (Annex 1).

1 Executive summary

1. The European Communities (Electronic Communications Networks and Services) (Universal Service and User's Rights) Regulations 2011 ("Universal Service Regulations") provide that where an undertaking is designated as having an obligation to provide a universal service (a "USO"), that undertaking ("the USP") may submit to the Commission for Communications Regulation ("ComReg") a written request to receive funding for the net costs of meeting the USO. ComReg is then required to determine, based on a net cost calculation, whether the cost of meeting the USO represents an unfair burden on the USP. In this document ComReg is only making a decision with regard to the net cost aspect of eir's 2015-2016 funding application.

2. For the year 2015/2016 eir was the designated USP[4], and as such may submit applications for USO funding for that year in accordance with ComReg's Decision D04/11[5] ("D04/11"). D04/11 sets out how the USP, should they so choose, is to make an application, including how the net cost (after intangible benefits) is to be calculated.

3. The funding application being assessed in this document is in respect of the 2015-2016 financial year[6]. This 2015-2016 USO funding application was submitted by eir on 31 March 2017 and in this application eir claimed a positive net cost of €12,861,430.

4. ComReg assessed eir's 2015-2016 USO funding application for completeness, relevance and accuracy of data submitted. ComReg's assessment also sought to ascertain whether the application adhered to the principles and methodologies set out in D04/11.

5. Upon receiving eir's 2015-2016 USO funding application, ComReg engaged external consultants, TERA Consultants ("TERA") to advise ComReg on the methodology and calculations used in the direct net cost element of eir's funding application, and to review these against the direct net cost principles, methodologies, and calculations in D04/11. The reports prepared and updated by TERA are included as Annex 2, Annex 3, and Annex 4 of this document.

[4] ComReg Decision D10/14 "The provision of telephony services under the Universal Service Obligation, Access at a fixed location" published 7 July 2014 ("ComReg D10/14") designated eir as the USP for the period 7 July 2014 to 31 December 2015 and the designation was extended to 30 June 2016 by ComReg Decision D10/15 "Universal Service Obligation, Provision of access at a fixed location" ("ComReg D10/15").
[5] "Decision on the Costing of universal service obligations: Principles and Methodologies", ComReg Document 11/42, D04/11, published 31 May 2011.
[6] eir's financial year runs from 1 July to 30 June.

6. ComReg also commissioned Oxera Consulting Ltd ("Oxera") to undertake a review and provide its view on eir's approach to and estimates of the intangible benefits generated through the provision of the USO. Oxera prepared a report on its assessment of the intangible benefits entitled "Assessment of eir's calculation of intangible benefits for 2015-2016" and this report is included as Annex 5 of this document.

7. ComReg interacted extensively with eir in relation to this application and engaged external consultants to advise it on issues arising. This engagement is summarised in Annex 1 of this document.

8. ComReg publicly consults on any application for funding received to ensure transparency and that ComReg has before it all relevant information before progressing its decision making. It is important to provide certainty to stakeholders about the scale of the net cost claimed by eir in its 2015-2016 USO funding application.

9. On 12 March 2021 ComReg published a consultation and draft determination in respect of eir's 2015-2016 funding application, titled "Assessment of eir's 2015-2016 Universal Service Fund Application: Assessment of the net cost and unfair burden for the period 2015-2016" ("Consultation 21/17").

10. In Consultation 21/17 ComReg formed the preliminary view that it was necessary to make a downward adjustment to eir's calculation of the total net cost of eir's Customer Model (i.e., uneconomic customers in economic areas). The total net cost of eir's Customer Model was adjusted downward from €11,970,982 to €6,289,628 (a downward adjustment of €5,681,354). This was reflected in eir's Customer Model (as amended by TERA).

11. In response to Consultation 21/17 ComReg received four submissions[7]. In light of certain aspects of eir's submission to Consultation 21/17 ComReg asked its consultant TERA to review eir's Customer Model (as amended by TERA) and to carry out a detailed review of all the calculations in eir's Customer Model (as amended by TERA).

12. As part of its review TERA produced TERA Report A, in which it proposed several further calculation adjustments be made to eir's Customer Model (as amended by TERA) and a downward adjustment of €852,422 to the direct net cost of eir's Customer Model.

13. On 07 February 2023 ComReg published a further consultation titled

[7] Association of Licensed Telecommunications Operators ("ALTO"), BT Communications (Ireland) Limited ("BT"), eir, and Vodafone Ireland Limited ("Vodafone").

"Assessment of eir's 2015-2016 Universal Service Fund Application: Further consultation on the assessment of the net cost for the period 2015-2016" ("Further Consultation 23/11"). The scope of this further consultation was solely in relation to the net cost calculation aspect of eir's 2015-2016 USO funding application.

14. In Further Consultation 23/11 ComReg set out its preliminary view that TERA's proposal in TERA Report A was appropriate and that further calculation adjustments were required to eir's Customer Model (as amended by TERA), to address certain calculation errors identified by TERA in its review of eir's Customer Model (as amended by TERA). In response to Further Consultation 23/11 ComReg received two submissions[8].

15. ComReg has considered all submissions received and in this document, responds to (i) those submissions to Consultation 21/17 which were not addressed in Further Consultation 23/11; and (ii) submissions to Further Consultation 23/11.

16. ComReg is now making a determination solely in relation to the net cost calculation aspect of eir's 2015-2016 USO funding application. This approach is in light of recent developments in the litigation between ComReg and Eircom[9], in particular the order of the court setting aside the unfair burden assessment aspects of the previous funding applications[10] and remitting same to ComReg for review in accordance with the decision of the Court of Justice of the European Union delivered on 10 November 2022[11]. ComReg has commenced its review in accordance with the aforementioned order and has published an Information Notice[12].

ComReg is of the view that, subject to ComReg's adjustments to eir's direct net cost calculation including a downward adjustment to eir's calculation of the direct net cost in both the Customer Model and the Payphone Model, and ComReg's Further calculation adjustments, eir's application is fit for purpose[13]. Figure 1 below summarises eir's net cost estimates, the adjustments made by ComReg to eir's 2015-2016 USO funding application and ComReg's decision on the positive net cost.

[8] ALTO and eir.
[9] Eircom v. The Commission for Communications Regulation 2019/167MCA.
[10] ComReg Decision D05/19, ComReg Decision D06/19, ComReg Decision D07/19, ComReg Decision D08/19, and ComReg Decision D09/19
[11] Eircom Limited v. Commission for Communications Regulation. Case C-494/21,
[12] Universal Service Funding Applications 2010-2015 Update | Commission for Communications Regulation (comreg.ie)

[13] Decision 20 of D04/11 requires that the USO funding application is fit for purpose.

Figure 1: Summary of eir's net cost estimates, ComReg's adjustments, and ComReg's decision on the positive net cost

USO Net Cost 2015-2016		*2015-2016* *eir's USO funding application*	*ComReg Adjustment* €	*2015-2016 ComReg's Final View* €
Direct net cost (a)	Uneconomic Areas	€444,959	0	€444,959
	Uneconomic Customers	**€11,970,982**	**(€852,422)**	**€11,118,560**
	Directories	€680,000	0	€680,000
	Public Payphones	€383,260	(€360,331)	€22,929
	Services for disabled end users	€16,336	0	€16,336
	Consultancy fees*	€239,380	(€239,380)	€0
	Direct net cost	**€13,734,917**	**(€1,452,133)**	**€12,282,784**
Intangible benefits (b)	Enhanced brand recognition	€739,171	0	€739,171
	Life-cycle	€15,885	(€15,885)	€0
	Ubiquity	€11,716	(€116)	€11,600
	Marketing	€106,715	(€105,023)	€1,692
	Total intangible benefits	**€873,487**	**-€121,024**	**€752,463**
Net cost (after intangible benefits)		**€12,861,430**	**(€1,573,157)**	**€11,530,321**

* ComReg has decided that consultancy fees are not a part of he net cost having regard to D04/11 and the provisions of he Universal Service Directive and he Universal Service Regulations (as more fully set out in Section 6 of consulta ion 21/17).

2 The application under assessment

17. On 31 March 2017, ComReg received eir's 2015-2016 USO funding application seeking funding for the provision of the USO during eir's financial year 2015-2016. eir claimed a net cost of €12.86m for this period, after taking account of intangible benefits of €0.87m.

18. That application included a USO Model, and two reports prepared by Frontier,

whom eir engaged to assist in the preparation of its funding application. One Frontier report outlined eir's methodology and calculations for the direct net cost (the "Frontier Direct Net Cost Report") and the other report outlined an estimate of the intangible benefits to eir arising from its provision of the USO during 2015/2016 (the "Frontier Intangible Benefits Report").

19. For the purpose of supporting its application, and in accordance with Decision 22 of D04/11 which requires that "financial information shall be provided with an appropriate audit opinion or appropriate report", eir also engaged PricewaterhouseCoopers ("PwC"). ComReg entered into a tripartite engagement with eir and PwC to formulate a set of specific verification procedures to be performed on eir's application, known as the Agreed upon Procedures ("AUPs").[14] These procedures are for the purposes of verifying the accuracy of information and include checks on calculations used in eir's USO model, reconciliations of eir's cost and revenue inputs back to its source workbooks and a reconciliation of the USO model against eir's historical cost accounting ("HCA") regulatory accounts.

20. On 18 May 2020 PwC provided a report to eir and ComReg setting out their specific findings arising from the AUPs carried out in respect of eir's application (referred to as the "AUP Report"). ComReg and TERA have reviewed the AUP Report as part of the assessment p ocess.

21. ComReg engaged external consultants, TERA, to advise ComReg on the methodology and calculations used in the direct net cost element of eir's funding application, and to review these against the direct net cost principles, methodologies, and calculations in D04/11. The reports prepared and updated by TERA are included as annexes to this document.

22. ComReg also commissioned Oxera to undertake a review and provide its view on eir's approach to and estimates of the intangible benefits generated through the provision of the USO benefits i.e., the Oxera Intangible Benefits Report, which is included at Annex 3 of Consultation 21/17 [15].

23. Between 2017 and 2021 ComReg engaged with eir in respect of its 2015-2016 USO funding application and the net cost calculation set out therein. As part of that process ComReg and its consultants, TERA and Oxera, reviewed and

[14] PwC's AUP engagement letter notes that the AUP services are "performed in accordance with the International Standard on Related Services 4400 "*Engagements to perform Agreed Upon Procedures Regarding Financial Information*"" and that "the services will not constitute an audit, or a review carried out in accordance with generally accepted auditing standards."

[15] Oxera also prepared a report on its assessment of the unfair burden entitled "Oxera unfair burden report 2015/16", which is included as Annex 4 of Consultation 21/17. In this document ComReg is only making a decision with regard to the net cost aspect of eir's 2015-2016 funding application.

sought clarifications from eir on the USO model and supporting information submitted by eir. eir engaged Frontier to assist it with responding to these requests. A summary of this engagement is set out below.

2.1 Consultation 21/17

24. On 12 March 2021 ComReg published a consultation and draft determination titled "Assessment of eir's 2015-2016 Universal Service Fund Application: Assessment of the net cost and unfair burden for the period 2015-2016" ("Consultation 21/17") in which ComReg set out its preliminary views in relation to eir's application for funding 2015-2016, having regard to the Universal Service Regulations, D04/11, and the consultants' reports outlined above.

25. In Consultation 21/17 ComReg consulted on its the preliminary view that it was necessary to make a downward adjustment to eir's calculation of the total net cost of eir's Customer Model (i.e., uneconomic customers in economic areas). The total net cost of eir's Customer Model was adjusted downward from €11,970,982 to €6,289,628 (a downward adjustment of €5,681,354). This was reflected in eir's Customer Model (as amended by TERA).

26. In response to Consultation 21/17 ComReg received several submissions[16]. A copy of all non-confidential responses is available as ComReg Document No. 21/17s.

27. In this document ComReg responds to those elements of the submissions that were not addressed in Further Consultation 23/11.

2.2 Further Consultation 23/11

28. Having reviewed the submissions to Consultation 21/17, ComReg asked its consultant TERA to review eir's Customer Model (as amended by TERA) in light of certain aspects of eir's submission, and to carry out a detailed review of all of the calculations in eir's Customer Model (as amended by TERA).

29. As part of its review TERA produced TERA Report A. TERA Report A does not address all submissions to Consultation 21/17 received which related to the direct net cost. It deals only with submissions that are relevant to the further calculation adjustments to eir's Customer Model (as amended by TERA).

30. In TERA Report A, TERA proposed further calculation adjustments to eir's Customer Model (as amended by TERA) ("the Adjusted Customer Model"), and a downward adjustment of €852,422 to the direct net cost of eir's Customer

[16] ALTO, BT, eir, and Vodafone.

Model, resulting in a calculated direct net cost of €11,118,560 (as compared to the figure of €11,970,982 claimed by eir in its 2015-2016 USO funding application, and the figure of €6,289,628 in eir's Customer Model (as amended by TERA) proposed in Consultation 21/17).

31. ComReg was of the preliminary view that TERA's proposal was appropriate and that further calculation adjustments were required to eir's Customer Model (as amended by TERA) to address certain calculation errors identified by TERA in its review of eir's Customer Model (as amended by TERA).

32. On 29 September 2022 ComReg wrote to eir informing it that, following the further calculation adjustments outlined in TERA Report A, ComReg was of the preliminary view that the calculated direct net cost of eir's Customer Model (€11.97m) should be subject to a downward adjustment of €0.85m, amounting to a direct net cost of the Customer Model for 2015/2016 of €11.12m (the "Amended Adjustment") ComReg provided eir with supporting documents[17] which provided further details on the Amended Adjustment.

33. ComReg requested that eir revert with any comments on the Amended Adjustment no later than Thursday 10 November 2022. ComReg set out that:
- it would consider any comments received; and
- should eir choose not to provide a response to this letter, ComReg would proceed with the consultation process in respect of the 2015-2016 funding application.

34. On the 10 November 2022 eir wrote to ComReg stating it had reviewed the Amended Adjustment and had no comments on the Amended Adjustment.

35. On 07 February 2023 ComReg published a further consultation titled "Assessment of eir's 2015-2016 Universal Service Fund Application: Further consultation on the assessment of the net cost for the period 2015-2016" ("Further Consultation 23/11").

36. In Further Consultation 23/11 ComReg set out its preliminary view that TERA's proposal in TERA Report A was appropriate and that further calculation adjustments were required to eir's Customer Model (as amended by TERA), to address certain calculation errors identified by TERA in its review of eir's Customer Model (as amended by TERA). In response to Further Consultation 23/11 ComReg received two submissions[18].

[17] TERA Report A; updated model instructions; the excel part of the 2016 CAM; the updated cost curves and updated Workbooks A and B.
[18] ALTO and eir.

37. ComReg has considered the submissions received and, in this document, responds to (i) those submissions to Consultation 21/17 which were not addressed in Further Consultation 23/11; and (ii) submissions to Further Consultation 23/11.

38. ComReg is of the view that, subject to ComReg's adjustments to eir's direct net cost calculation, including a downward adjustment to eir's calculation of the direct net cost in both the Customer Model and in Payphone Model, and TERA's proposed further calculation adjustments, eir's application is fit for purpose[19].

39. Figure 1 above sets out the USO net costs claimed by eir, and the adjustments made by ComReg to eir's direct net cost calculation.

3 Statutory and regulatory context for the assessment of eir's application

40. Pursuant to ComReg's powers under Regulation 7 of the Universal Service Regulations and Article 8 of the Universal Service Directive[20], ComReg, by way of ComReg Decision D10/14, designated eir as the USP to provide certain telecommunications services, known as the USO, for the period 7 July 2014 to 31 December 2015, and the designation was extended to 30 June 2016 by ComReg Decision D10/15 The USO imposed on the USP are to ensure basic fixed line telephone and other minimum telecommunications services, such as public payphones and printed directory services, are available to end-users at an affordable price.

41. The provision of the USO may result in the USP(s) providing designated services at a positive net cost. In accordance with Regulation 11(1) of the Universal Service Regulations, where a USP seeks to receive funding for the net costs of meeting the USO, it may submit to ComReg a written request for such funding. ComReg is obliged to assess such a request and to verify the accuracy of the net cost claimed.

42. Schedule 2, Part A of the Universal Service Regulations states that:

[19] Decision 20 of D04/11 requires that the USO funding application is fit for purpose.
[20] Directive 2002/22/EC of the European Parliament and the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (as amended by Directive 2009/136/EC) ("the Universal Service Directive").

"In undertaking a calculation exercise, the net cost of universal service obligations is to be calculated as the difference between the net cost for a designated undertaking of operating with the universal service obligations and operating without the universal service obligations."

43. Schedule 2, Part A also states that:

"Due attention is to be given to correctly assessing the costs that any designated undertaking would have chosen to avoid had there been no universal service obligation. The net cost calculation should assess the benefits, including intangible benefits, to the universal service operator."

44. In D04/11, ComReg set out the principles and methodologies to be applied to the calculation of the net cost.

45. D04/11 also sets out more general requirements in terms of content of the application and timelines that the USP must comply with in respect of the submission of the application to ComReg.

46. Whilst D04/11 set out the principles and methodologies for calculating the overall net cost, it specifically envisaged that ComReg would assess each application for funding on a case-by-case basis and on its own merits.

47. Decisions 1 to 37 of D04/11 set out the basis for calculating the direct net cost and the intangible benefits associated with being the USP and must be adhered to in any assessment of eir's funding applications.

48. Decisions 38 to 42 of D04/11 set out the general and objective criteria by which ComReg will assess whether a positive net cost, in the particular year of application, may be considered an unfair burden on the USP. In this document ComReg makes a determination solely in relation to the net cost calculation aspect of the USO funding.

49. Following ComReg's calculation of the net cost, ComReg is required to make publicly available the results of the net cost calculations and the conclusions of any audit or verification undertaken in relation to the net cost calculation.[21]

[21] Regulation 11(8) of the Universal Service Regulations.

4 Overview of assessment process

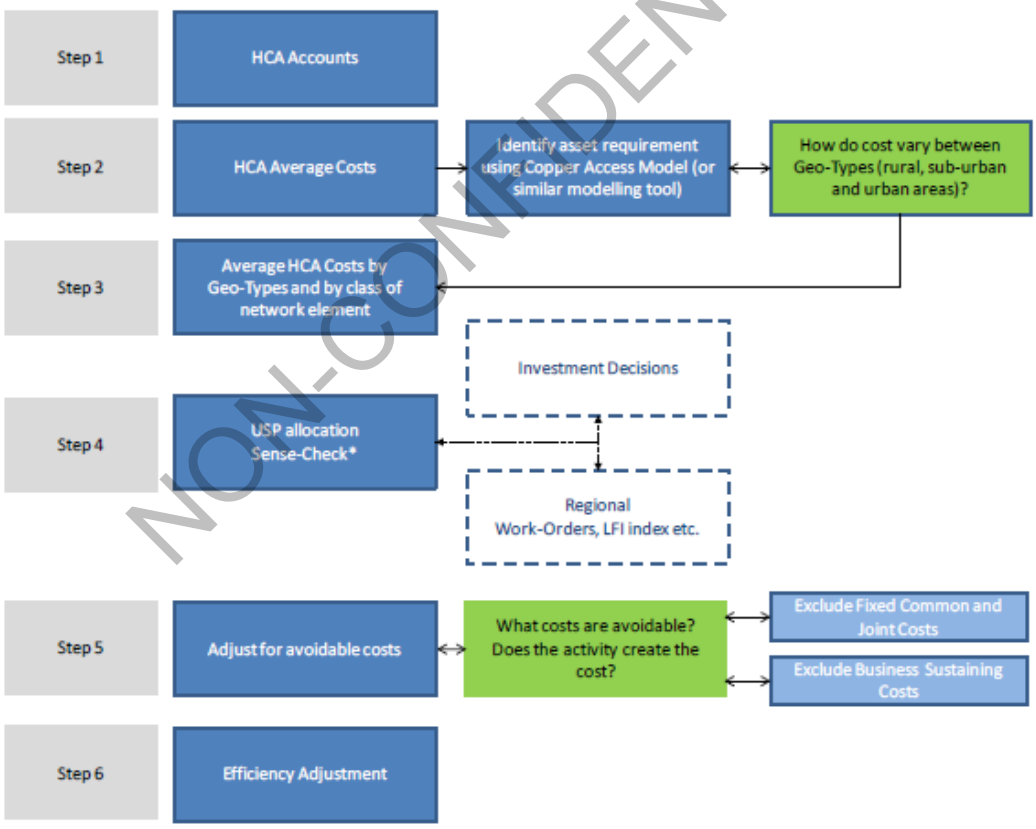
50. ComReg's assessment of eir's application for funding seeks to ascertain whether eir, in making its application, adhered to the principles and methodologies established by D04/11.

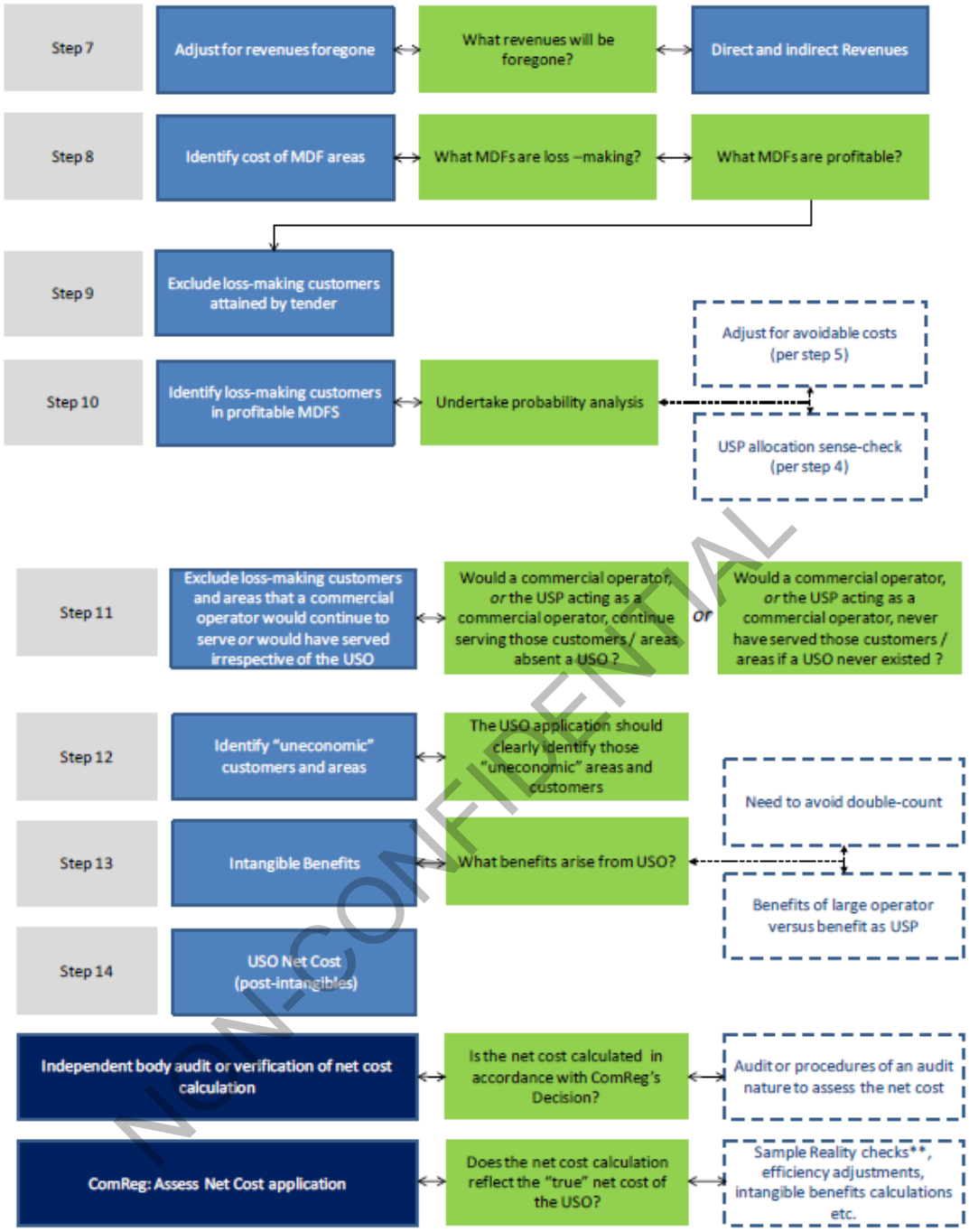
51. D04/11 sets out principles and methodologies under the below heading areas:

- Principles and methodologies for calculating the USO direct net cost; and
- Principles and methodologies for calculating the intangible benefits arising from the provision of USO services.

52. Figure 2 provides an overview of the approach set out in D04/11 with respect to the calculation of the net cost and the assessment.

Figure 2: Overview of net cost calculation methodology (Source: D04/11)





53. ComReg's assessment of eir's application for USO funding for 2015/2016 by reference to the above D04/11 framework, is summarised in this document and in ComReg's consultants' reports (at Annexes 2, 3, 4 and 5).

4.1 Overview of D04/11

54. Figure 3 below sets out the key areas of D04/11 and the associated net cost decisions.

Figure 3: D04/11 key areas and associated net cost decisions

D04/11	
CALCULATING THE USO NET COSTS AND REVENUES	
Costing Methodology	Decision 1
Avoidable Costs	Decision 2
USO Revenue Calculation	Decisions 3 - 7[22]
Efficiency Adjustments	Decision 9
Cost Identification and Allocation	Decisions 8, 10 – 15
Cost Identification and Allocation: Uneconomic Payphones and Other USO Costs	Decisions 16 – 18
Format and content of the USO Funding Applications	Decisions 19 -31
Timing of Funding Applications	Decision 32 -34
CALCULATING THE BENEFITS OF THE USO	
Identification of the Benefits	Decisions 35 – 36
Methodologies and Data Requirements for Calculating Benefits	Decision 37

55. The requirements of D04/11 in respect of the format, content, and timing of USO funding applications and eir's compliance therewith are outlined in Figures 4 and 5 below.

56. A summary of TERA's assessment of the calculation of the USO direct net costs and revenues and ComReg's decision on this is outlined in Chapter 5 of this document. A summary of Oxera's assessment of the calculation of the benefits of the USO and ComReg's determination on this is outlined in Chapter 11 of this document.

[22] D04/11, within the "Calculating USO net costs and revenues" heading, presented Decision 8 as falling under "USO revenue calculation". As Decision 8 refers to the treatment of avoidable costs, for the purposes of this consultation, it has been considered within section 5.2.2 (Cost Data).

4.1.1 Format and content of eir's 2015-2016 USO funding application - compliance with D04/11

57. The below table sets out decisions in D04/11 regarding the format and content of any funding application and accompanying information to be submitted to ComReg, and the compliance by eir's 2015-2016 funding application with those decisions (see Figure 4).

58. As eir's compliance with the format and content requirements set out in Decisions 25, 27 and 29 of D04/11 are closely related to TERA's assessment of the direct net cost, eir's compliance with these decisions is not addressed in the Figure 4 table but rather in Chapter 5 of this document.

Figure 4: Format of eir's 2015-2016 USO funding application

D04/11	ComReg's Decision
Decision 19	**USO funding applications shall be consistent and in accordance with this Decision and Decision Instrument[23]**
	ComReg is satisified, on the basis of the assessment and review undertaken by both TERA and Oxera, that eir's 2015-2016 USO funding application is consistent and in accordance with Decision D04/11.
Decision 20	**USO funding applications shall be fit for purpose.**
	ComReg is satisified, on the basis of the assessment and review undertaken by both TERA and Oxera and subject to ComReg's adjustment (to reflect the sole use of the 2016 CAM to address the inaccurate and incorrect mixed use of the 2009 and 2016 CAM by eir, and the adjustment to the payphone model), that eir's 2015-2016 USO funding application is fit for purpose.
Decision 21	**USO funding applications shall be based on annual information which coincides with the USP's financial year.**
	ComReg confirms that eir's 2015-2016 USO funding application is based on annual information that coincides with the USP's financial year.
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[24] (as approved by ComReg) has in no way assisted with the preparation of the USO funding application.**
	ComReg confirms that an independent declaration, signed off by the Board of Directors of eir, accompanying the application, was provided.

[23] D04/11.
[24] Where an Auditor can refer to a person, corporation sole, a body corporate, and an unincorporated body.

	Agreed Upon Procedures (AUPs), based on terms of engagement approved by ComReg, were undertaken by PwC to satisfy this requirement and an AUP report prepared by PWC was provided to ComReg.
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.**
	ComReg confirms, on the basis of the assessment and review undertaken by both TERA and Oxera, that eir's 2015-2016 USO funding application was supported by calculations in software which is reasonably capable of proper access and review.
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.**
	ComReg is satisified on the basis of the assessment and review undertaken by both TERA and Oxera, that eir's 2015-2016 USO funding application and supporting USO models were adequately clear and transparent with the exception of eir's mixed use of the 2009 CAM and 2016 CAM and fulfilled the requirements of Decision 24. Notwithstanding the adjustment ComReg had to make to the Customer Model, the USO models included calculations and the underlying methodology for calculating the costs of each USO service.
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.**
	In publishing any key data / workings related to eir's 2015-2016 USO funding application, ComReg has considered issues of transparency and the confidentiality of certain information, having regard to relevant statutory provisions and ComReg's Guidelines on the Treatment of Confidential Information - ComReg 05/24.
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.**

	ComReg is satisified, on the basis of the assessment and review undertaken by both TERA and Oxera, that eir's 2015-2016 USO funding application and financial models were adequately supported by comprehensive documentation, with the exceptions of the matter of eir's mixed use of the 2009 CAM and 2016 CAM, and payphone model.
Decision 30	**USP funding applications shall, where applicable, accord with ComReg Decision No. D07/10 in relation to accounting separation.**
	ComReg is satisified, on the basis of the assessment and review undertaken by TERA, that eir's 2015-2016 USO funding application is in accordance with ComReg Decision No. D07/10 in relation to accounting separation.
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).**
	ComReg confirms, on the basis of the assessment and review undertaken by Oxera, that eir has provided reports prepared by external experts, Frontier, for the purposes of calculating the benefits of the USO. The reports clearly set out the necessary calculations, methodologies and assumptions applied in calculating the benefits the USP derives as a result of the USO.

4.1.2 Timing of eir's 2015-2016 USO funding application - compliance with D04/11[25]

Figure 5: Timing of eir's 2015-2016 USO funding application

D04/11	ComReg's Decision
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.**
	No extension was sought for the submission of this 2015-2016 USO funding application.

[25] Decision 32 and 34 of D04/11 are not applicable to the 2015-2016 USO funding application. Decision 32 relates specifically to the 2009-2010 USO funding application and is no longer applicable. Decision 34 revoked ComReg Document No. 07/39.

5 Approach to calculating the direct net cost

59. This section sets out ComReg's decision on the direct net cost calculation (Figure 6).

60. The TERA Report, published as part of this document, at Annex 2, is structured as follows:

- Section 3 summarises the methodological approach taken by TERA to assess the direct net cost.
- Sections 4 and 5 present an analysis of the revenue and cost data.
- Section 6 – 10 presents a review of eir's 2015-2016 USO funding application USO model against the principles and methodologies set out in D04/11.
- Section 11 presents an analysis of any overlap between the direct net cost and the intangible benefits.

61. TERA Report A is published at Annex 2, and sets out the details of the Amended Adjustment, which was the subject of Further Consultation 23/11.

62. In order to estimate the direct net cost arising from the provision of USO services for the application period in question, as required by the principles and methodologies of D04/11, eir compared the avoidable costs and foregone revenues arising as a result of its USP status for the 2015-2016 financial period to the counterfactual scenario, where the provision of USO services to uneconomic customers would not otherwise have been served by a commercial operator. In other words, the direct net cost, as calculated equates to the difference between the avoidable costs attributable to the provision of the USO (both direct and indirect) minus the revenues (both direct and indirect) attributable to the provision of USO services.

63. eir calculated the direct net cost by using the following five USO models:

1. Area Model – uneconomic areas
2. Customer Model – uneconomic customers in economic areas
3. Payphone Model
4. Directories Model
5. Disabled End Users' Services Model

64. In accordance with D04/11, eir's input data for the purposes of the models consists of two broad categories:

1. Foregone revenue
2. Avoidable costs

65. eir's direct net cost estimate, adjustments made by ComReg to eir's 2015-2016 USO funding application, and ComReg's Decision of the calculated direct net cost are set out in Figure 6 below.

Figure 6: 2015-2016 direct net cost

USO Net Cost 2015-2016		*2015-2016 eir's USO funding application*	*ComReg Adjustment* €	*2015-2016 ComReg's Decision* €
Direct net cost (a)	Uneconomic Areas	€444,959	-	€444,959
	Uneconomic Customers	€11,970,982	(€852,422)	€11,118,560
	Directories	€680,000	-	€680,000
	Public Payphones	€383,260	(€360,331)	€22,929
	Services for disabled end users	€16,336	-	€16,336
	Consultancy fees*	€239,380	(€239,380)	€0
	Direct net cost**	**€13,734,917**	**(€1,452,133)**	**€12,282,784**

* ComReg has decided that consultancy fees are not a part of the net cost having regard to D04/11 and the provisions of the Universal Service Directive and the Universal Service Regulations (as more fully set out in Section 6).
** Rounding to zero decimal places

66. ComReg, having considered the TERA Reports[26] and its views on eir's compliance with decisions relating to the direct net cost within D04/11 together with information submitted by eir in response to the clarifications process, has decided that eir's 2015-2016 USO funding application is in adherence with D04/11 (subject to ComReg's Amended Adjustment (to reflect the sole use of the 2016 CAM to address the inaccurate and incorrect use of both the 2009 and 2016 CAMs and adjustment to the payphone model) and specifically in terms of the direct net cost assessment, with Decisions 1 – 14, 16, 17, 18, 25, 27 and 29 of D04/11.

[26] The TERA Report, TERA Report A and TERA Report B.

5.1 Overview of TERA's direct net cost assessment

67. TERA undertook an assessment of the principles, methodologies, and calculations of the direct net cost elements of eir's 2015-2016 USO funding application, by reference to the relevant principles and methodologies set out in D04/11.

68. TERA's assessment of eir's 2015-2016 USO funding application involved gaining an understanding of the approach to, and calculation of, the foregone revenue as well as avoidable cost including operational expenditure ("OPEX") and capital expenditure ("CAPEX") cost data.

69. TERA's assessment considered the methodology and subsequent calculation of the direct net cost of each of the USO services provided by eir.

70. Additionally, TERA's assessment investigated any overlap between the direct net cost estimates and the intangible benefit estimates, in order to ascertain whether there was evidence of double counting and to ensure input values were correct and consistent.

71. Following the process of engagement between eir and ComReg in relation to the USO models in 2018 and 2020, TERA advised ComReg on certain clarifications, required from eir.

72. Between 2017 and 2022 ComReg engaged with eir in respect of its 2015-2016 USO funding application and the net cost calculation set out therein. As part of that process ComReg and its consultants, TERA and Oxera, reviewed and sought clarifications from eir on the USO model and supporting information submitted by eir. eir engaged Frontier to assist it with responding to these requests. A summary of this engagement is set out in Annex 1 of this document.

73. Following a request for information by ComReg on 24 May 2019, eir provided details of invoices and supporting documentation in respect of the consultancy fees and directories components of their 2015-16 USO Funding Application claimed additional clarifications, to ComReg in June 2019.

74. TERA, having considered eir's 2015-2016 USO funding application, and on the basis of its assessment of the USO models and eir's submission to Consultation 21/17 found the direct net cost to be €12,282,784, based on an adjustment of €1,452,133. This adjustment reflects the sole use of the 2016 CAM in eir's Customer Model (as amended by TERA) and adjustments to costs associated with Payphone Model and consultancy fees.

75. ComReg has considered TERA's analysis as set out above and agrees with it. ComReg has decided that a downward revision of €852,422 to the Customer Model element of the direct net cost claimed in eir's 2015- 2016 USO funding application is warranted. The total net cost of adjusted Customer Model (i.e., uneconomic customers in economic areas) has been calculated at €11,118,560 (as compared to the figure of €11,970,982 claimed by eir in its 2015-2016 USO funding application as submitted to ComReg).

76. ComReg is of the view that, subject to ComReg's adjustments (to reflect the sole use of the 2016 CAM in eir's Customer Model (as amended by TERA), and the Payphone Model and consultancy fees adjustments), eir's application is fit for purpose.[27]

5.2 Input data

5.2.1 Revenue Data

77. The direct net cost calculation includes both the direct[28] and indirect[29] revenues that eir would forego if the provision of services to uneconomic customers and areas was no longer required. Where services are not part of the USO, both their costs and revenues should be excluded from the USO model.

78. eir excluded certain revenues from the direct net cost calculation for a range of reasons. TERA has evaluated eir s treatment of revenue in each of the USO models to determine the relevance of each such inclusion or exclusion.

5.2.1.1 Key changes

79. TERA checked the reasonableness of the exclusion of each of the revenue categories. In cases where TERA found the exclusion criteria were unclear, it sought further explanation from eir. Having reviewed and considered eir's explanation for the exclusion of these revenues, TERA was satisfied that the exclusion of these revenue categories was reasonable.

80. Once the relevant revenues were identified, revenue needed to be allocated across MDF areas. For the purpose of allocating revenue to exchange areas eir's CDW [30] was used.

[27] Decision 20 of D04/11 requires that the USO funding application is fit for purpose.
[28] Direct revenues are those directly invoiced to a customer or another authorised operator.
[29] Indirect revenues include services not directly invoiced to a customer.
[30] Corporate data warehouse.

81. In line with Decision 4 of D04/11, eir allocated all the one-off revenue categories to the year in which they were incurred, with the exception of PSTN connections, which eir recognised in the same period as the initial connection, without amortisation. The PSTN connection revenues were, however, offset by the corresponding costs which were treated in a similar manner. All connection revenues except RAT and PSTN were also amortised in the regulatory accounts over the expected customer lifetime, so that the model input data already took amortisation into account[31]. Having reviewed the calculations, TERA considered that this approach was acceptable.

82. eir's 2014/2015 USO funding application noted that costs and revenues related to Next Generation Access (NGA) Network were broken out separately in eir's regulatory accounts. These NGA costs and revenues were then broken out further into more granular asset classes in eir's 2015-2016 USO funding application. This provides greater granularity on costs and associated revenues within cost categories, however the overall scope of the costs included in the USO model remains the same.

83. TERA was satisfied that this was reasonable and appropriate in the context of the 2015-2016 USO funding application.

5.2.1.2 ComReg's decision

84. Having considered the information available including the responses provided by eir and its consultants during the clarifications process, and on the basis of the assessment and review undertaken by TERA, ComReg is satisfied that the treatment of revenue data in eir's 2015-2016 USO funding application is reasonable and is in accordance with the relevant principles and methodologies in D04/11.

85. ComReg's decision with respect to eir's compliance with Decisions 3, 4, 5, 6, 7 and 29 of D04/11 is set out in Figure 7 below.

Figure 7: ComReg's decision - compliance with Decisions 3, 4, 5, 6, 7 and 29 of D04/11

D04/11	ComReg's Decision
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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir's calculation of USO revenues adequately included direct and indirect revenues that it would forego as a result of ceasing to provide USO services to uneconomic customers.
Decision 4	**Direct revenues shall include those revenues which are directly invoiced to a**

[31] Response to ComReg questions on eir's 2014-2015 USO funding application, February 2015.

	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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA that the revenue scope for direct revenues incorporated by eir corresponds with the requirements of Decision 4.
Decision 5	**Direct revenues shall include those revenues from another authorised operator ("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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that the revenue scope for direct revenues incorporated by eir corresponds with the requirements of Decision 5.
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).**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that the scope of indirect revenues incorporated by eir corresponds with the requirements of Decision 6.
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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA that given the lack of certain data, eir used an appropriate alternative approach.
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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir's use of data sampling when certain data could not be sourced or was not available, was reasonably justified by eir and that samples were sufficiently representative of the population being sampled.

5.2.2 Cost Data

86. According to the principles and methodologies set out in D04/11, the cost data includes both the capital and operating costs of providing the services relevant for the USO. The avoidable cost concept is a fundamental determinant of the net cost calculation; and it is only the portion of costs that can be directly attributable to the USO service, which can be included in the net cost calculation.

87. Furthermore, the avoidable costs included in the net costs calculation should be those which are incurred in the most efficient way.

88. TERA evaluated eir's treatment of costs including the categories of costs which are included, whether they are avoidable, how costs are allocated to MDFs and how efficiency adjustments were made.

5.2.2.1 Key changes

89. TERA considered the cost categories which were identified by eir to ensure they were treated correctly. eir included the following additional OPEX and CAPEX cost categories in its 2015-2016 USO funding applications[32]:

- building pool CAPEX[33]
- BIP and Ethernet SANS OPEX[34]
- The cost of PRA/FRA CPE for ISDN lines

90. Having reviewed and considered eir's inclusion of building pool CAPEX, BIP and Ethernet SANS OPEX, and cost of PRA/FRA CPE for ISDN lines, TERA was satisfied that these amendments by eir were reasonable and appropriate in the context of eir's 2015-2016 USO funding application.

91. Having considered the cost data, TERA assessed the portion of these costs which could be avoided if certain MDF areas were no longer served by eir.

92. TERA noted that eir's changes in its definition of working lines (outlined above), have resulted in some changes to the allocation of costs to MDFs.

93. TERA also noted that the costs from eir's HCA accounts, are in the main, not identified separately for different MDF areas. Costs are therefore allocated to areas using cost drivers.

94. TERA also conducted SRT sampling checks and was of the view that the impact of these changes on the level of avoidable costs was negligible during this financial period.

95. TERA's assessment of eir's cost avoidability assumptions noted that eir used access network costs to calculate the avoidable access network costs at the area and customer level for each MDF.

96. Having reviewed and considered eir's access network cost avoidability assumptions in respect of OPEX, TERA was satisfied that eir's avoidability assumptions were reasonable in the context of eir's 2015-2016 USO funding application.

[32] These additional costs were also included in each of eir's final 2010/11 to 2014/15 USO funding applications. They were not included in eir's 2009/10 USO funding application).
[33] eir's 2009/2010 funding application model had excluded the Capex associated with the building pool. TERA considered that building pool Capex can be directly attributable to geographic areas, in the most part identifiable at district level, and with particular MDFs in some cases.
[34] eir's 2009/2010 funding application model included BIP and Ethernet SANS revenue and omitted the associated Opex.

97. In eir's initial 2014-2015 USO funding application, its approach to cost allocation was only based on the number of faults. TERA recommended that the allocation of costs to "repair team areas" should be based on the number of repair staff in each area; and the allocation of costs to MDFs, was based on the number of faults in the MDFs, that make up each "repair team area". eir's approach to the allocation of the "Repair-Access" cost category was amended in eir's final 2014-2015 USO application[35], and reflected in eir's 2015-16 application, to incorporate recommendations made by TERA. TERA considered this approach to be more aligned to the principle of cost causality and the 2016 CAM[36].

98. Finally, eir made a number of efficiency adjustments in line with principles and methodologies of Decision 9 of D04/11.

99. TERA agrees with eir's efficiency adjustment in the calculation of fault costs.

100. TERA also considered the allocation of distance sensitive costs, which are costs that vary depending on the length of the line. These costs need to be allocated to housing and isolated areas. eir maps the network service elements to 3 categories:

- distance sensitive
- non-distance sensitive
- provisioning

101. TERA reviewed the mapping of network elements to services for these cost categories, and concluded, based on the available information, that eir's approach was reasonable.

102. Cost-volume relationship (CVRs) is the curve that describes how the cost of the core network changes in relation to call volumes. The CVRs eir used assume that costs increased linearly between 76% and 100%. The cost for Billing-CDCS-CMA was zero in 2015-2016 and accordingly no CVR was needed for this cost item.

103. Having reviewed and considered eir's further clarification on the use of cost curves for core network, TERA was satisfied that these amendments by eir were reasonable and appropriate in the context of eir's 2015-2016 USO funding application.

[35] The Frontier Direct Net Cost Report (Section 3.1.3) details the cost drivers used to allocate avoidable OPEX costs to MDFs.
[36] Copper Access Model.

5.2.2.2 ComReg's decision

104. Having considered the information available including the responses provided by eir and its consultants during the clarifications process, and on the basis of the assessment and review undertaken by TERA, ComReg is satisfied that the treatment of cost data in eir's 2015-2016 USO funding application is reasonable and is in accordance with the relevant principles and methodologies in D04/11.

105. Figure 8 below sets out ComReg's decision in relation to eir's compliance with Decisions 1, 2, 8, 9 and 12 of D04/11.

Figure 8: ComReg's decision - Compliance with Decisions 1, 2, 8, 9 and 12 of D04/11

D04/11 Decision	ComReg's Decision
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.**
	ComReg confirms, on the basis of the assessment and review undertaken by TERA, that eir's 2015-2016 USO funding application adequately satisfies the criteria set out in Decision 1.
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, which 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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir has adequately fulfilled the criteria in Decision 2, save for as noted in Chapter 5 of this document, ComReg does not consider that consultancy fees form part of the net cost.
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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that the avoidable costs eir included in the net cost calculation have been prepared on an avoidable costs basis and that it appropriately reflects the costs, considering both OPEX, CAPEX and overheads, incurred in the provision of the USO which a commercial operator would not ordinarily have provided.
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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir has adopted appropriate methodologies in calculating costs and efficiency adjustments to determine the appropriate level of costs that would be incurred by an efficient operator in order to determine the quantum of adjustments to the USP's net cost calculation.
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 o 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).**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA that the depreciation method applied by eir is in accordance with Decision 12.

5.3 USO models 2015-2016

106. ComReg has decided that eir's mixed use of the 2016 CAM with elements of the 2009 CAM in its 2015/16 USO funding application is incorrect, and that an adjustment to the net cost calculation is warranted and necessary. eir's choice of cost avoidability assumptions for 2015/16 create an inconsistency in the cost avoidability and cost distribution assumptions used within the USO models, which in turn effect the accuracy of the direct net cost calculation for the financial year 2015/16.

107. ComReg is of the view that its adjustment to eir's Customer Model (as amended by TERA) to reflect the sole use of the 2016 CAM is the most appropriate way of addressing what ComReg regards as eir's inaccurate and incorrect mixed use of the 2009 and 2016 CAMs in the direct net cost calculation.

108. ComReg is of the view that, subject to the aforementioned adjustments, eir's application is fit for purpose[37]. The principles and methodologies required by D04/11 were broadly reflected in the USO models eir used to calculate the direct net cost of the USO, as set out more specifically in sections 5.3.2, 5.3.4 and 6 of this document.

109. The USO models were originally developed by eir as part of the 2009-2010 USO funding application process. As ComReg and its consultants (TERA) conducted an extensive review of eir's USO models as part of its assessment of the 2009-2010 USO funding application, TERA's assessment for 2015-2016 also analysed changes in the USO models since eir's 2009/10 USO application and the impact of such changes.

110. eir's 2015-2016 USO funding application is based on an updated version of the 2009-2010 USO models.

111. The following section summarises the key changes:

- between eir's **2009-2010** USO funding application and eir's **2015-2016** USO funding application.
- TERA adjustments agreed by ComReg and taken into account in ComReg's view of the calculated direct net cost.

112. Further details of the direct net cost calculation for each USO model and TERA's assessment are set out in the TERA Reports.

5.3.1 Area Model

113. The Area Model calculates the direct net cost of uneconomic areas, with one area corresponding to one MDF. The uneconomic areas are those which eir claims would not be served by eir if it had no USO obligation.

114. TERA found that the direct net cost of uneconomic areas in the Area Model is €0.44M. This figure reflected the amount eir claimed in its 2015-2016 USO funding application.

115. There were no changes in the methodology or approach to calculating the cost of uneconomic areas in eir's 2015-2016 USO funding application, to that adopted in eir's 2009-2010 USO funding application.

[37] Decision 20 of D04/11 requires that the USO funding application is fit for purpose.

116. TERA concluded that the changes in the direct net cost of reviewed MDFs when compared to eir's 2009/10 USO funding application were due to changes in the input data as a result of changes in consumption, routing factors and consumption and the regulatory accounts, as opposed to changes in the parameters or design of the Area Model itself. TERA concluded that there were no methodological changes in the Area Model component of eir's 2015/16 funding application when compared to its final 2014/15 funding application.

5.3.1.1 ComReg's decision

117. Figure 9 below sets out ComReg's decision in relation to eir's compliance with Decision 11 of D04/11.

Figure 9: ComReg's Decision - Compliance with Decision 11

D04/11	ComReg's Decision
Decision 11	**Uneconomic areas shall be identified at an MDF level.**
	ComReg confirms, on the basis of the assessment and review undertaken by TERA, that eir has met the requirements of Decision 11 by identifying uneconomic areas at an MDF level.

118. ComReg confirms, on the basis of the assessment and review undertaken by TERA, that the calculated direct net cost of the Area Model is €444,959.

5.3.2 Customer Model

119. The Customer Model calculates the direct net cost of uneconomic customers in economic areas.

120. The total cost of uneconomic customers claimed in eir's 2015-2016 USO funding application was €11 97m.

121. The TERA Report notes that a probabilistic approach was used in eir's 2015-2016 USO funding application Customer Model, as opposed to using universal account numbers ("UAN"). TERA listed a number of limitations as outlined by eir, which restrict the ability to use the UAN:

- UAN is an account identifier (currently tracks accounts, not lines).
    - An account may have lines at a number of different locations.
    - Lines may also move between accounts (amalgamated or divided accounts).
    - Each time a line transfers from eir Retail to eir Wholesale, or from one OAO to another, the relevant line is given a new UAN (so while the telephone number may remain the same, the UAN does not).

- eir's databases contained information that can identify the revenue of individual customers; however, a similar identification of the costs was not possible as costs were not recorded at an individual customer level.

122. The probabilistic based approach used by eir in its 2015-2016 USO funding application was the same approach as eir used in its 2014-2015 USO funding application. The approach compared the distribution of net revenue with a distribution of the avoidable costs of access, by calculating the expected number of uneconomic lines in each economic MDF area and in turn, the expected losses, from each of these lines.

123. PwC, as part of its AUP Report, reported a number of procedures it undertook to review and validate the formulae used in the Customer Model.

124. TERA having reviewed eir's use of the probabilistic approach, concluded that eir's approach was appropriate, absent the availability of more granular data, for the following reasons:

- eir showed that revenue and costs were not correlated, thereby indicating that a probabilistic approach was reasonable.
- UAN was related to a customer's account as opposed to the number of lines on the account, and therefore a UAN did not reflect individual access line movement at the customer account level.
- There was a difficulty in matching revenue and line length information.

125. eir's 2015-2016 USO funding application uses both the 2009 CAM and the 2016 CAM. eir uses the 2009 CAM to calculate the level of cost avoidability of CAPEX within "isolated areas" (based on the financial year 2013-2014) and eir uses the 2016 CAM cost allocation assumptions (based on the financial year 2015-2016) in the Customer Model, of its USO funding application.

126. TERA is of the view that eir's mixed use of the 2009 CAM and the 2016 CAM in this manner is incorrect and creates inconsistencies in the cost avoidability and cost allocation assumptions used in the USO models. This affects the accuracy of the net cost calculation in eir's 2015-2016 USO funding application. ComReg refers to pages 9 to 13 of TERA Report B in which TERA set out its view as to how the mixed use of the 2009 CAM, and the 2016 CAM is incorrect and creates inconsistencies in the cost avoidability and cost allocation assumptions used in the USO model. ComReg has considered TERA's view in this regard and agrees with it.

127. Therefore, ComReg is satisfied that 2016 CAM is the appropriate CAM to be used in eir's 2015-2016 USO funding application.

128. ComReg instructed TERA to propose a methodology (Proposed ComReg Methodology) based on the sole use of the 2016 CAM, that should be applied to the calculation of the cost avoidability in the Customer Model of eir's 2015-2016 USO funding application, taking into account, eir's identified "areas for development" (based on the Preliminary ComReg methodology) for calculating cost avoidability in the Customer Model[38].

129. The Proposed ComReg Methodology identified:

- "urban/high density areas" using the "distance from the exchange" (boundary) methodology, where the boundary is defined as 3km from the exchange. This proposed methodology is consistent with a proxy boundary approach which has been used previously by ComReg for similar wholesale access products and component products[39]; and then,
- applies a refined L/N methodology for access lines beyond 3km. In TERA Report B TERA provided further rationale for the use of the 3km boundary in the Proposed ComReg Methodology.

130. Accordingly, ComReg used 3km as the boundary to:

- differentiate between isolated areas and "higher density"/more built-up areas; and
- in this way ensures that in the counterfactual that a commercial entity would not avoid all costs.

131. Having reviewed the submissions to Further Consultation 21/17, ComReg asked TERA to review eir's Customer Model (as amended by TERA) in light of certain aspects of eir's submission and carry out a detailed review of all the calculations in eir's Customer Model (as amended by TERA).

132. On 28 September 2022, ComReg received TERA Report A. In this report TERA proposed a downward adjustment of €852,422 to the direct net cost of eir's Customer Model, resulting in a calculated direct net cost of €11,118,560 (as compared to the figure of €11,970,982 claimed by eir in its 2015-2016 USO funding application, and the figure of €6,289,628 in eir's Customer Model (as amended by TERA) proposed in Consultation 21/17).

[38] As set out in eir's presentation "eir proposed methodology for calculating cost avoidability in the Customer Model 23/3/18.
[39] This proxy is aligned with that used to develop the wholesale broadband pricing in ComReg Decision D11/18 "Pricing of Wholesale Broadband Services in the WLA and WCA Markets" ("Decision D11/18").

5.3.2.1 The Adjusted Customer Model

133. The following section re-iterates the analysis set out in Further Consultation 23/11, Chapter 3.

134. In the context of modelling the cost of the USO, eir uses the CAM, where there is an insufficient level of actual granular data available, to provide guidance on how costs are attributed.

135. TERA Report A sets out:

- the proposed calculation adjustments to eir's Customer Model (as amended by TERA);
- the basis and rationale for the further calculation adjustments;
- the individual and collective impact of the further calculation adjustments on the direct net cost calculation;

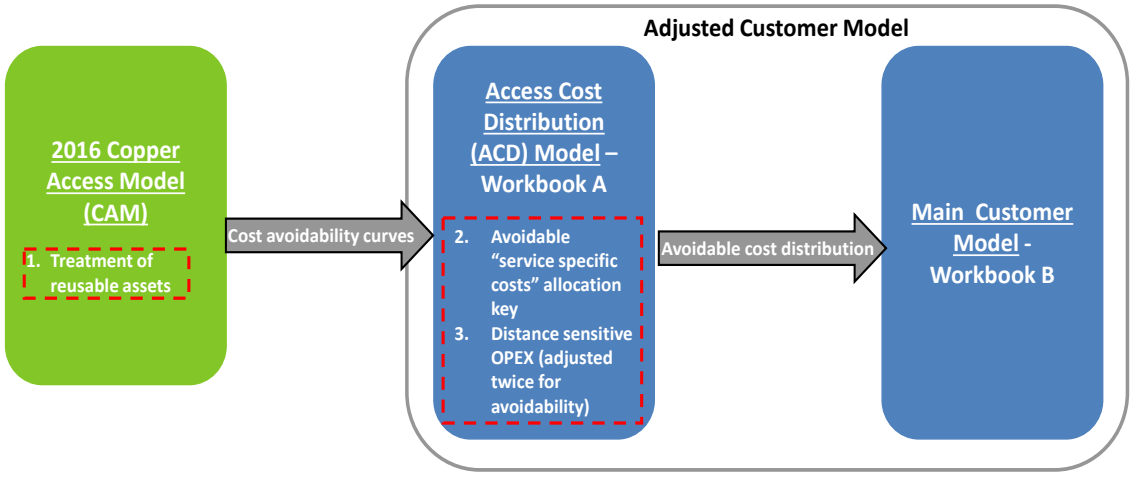
and that TERA considers that an adjustment to the net cost calculation in this regard is therefore warranted and necessary.

136. TERA Report A proposed further calculation adjustments to:

- the 2016 CAM inputs, specifically, the treatment of reusable assets and the associated impact on the calculation of "cost avoidability" curves; and
- the ACD Model (Workbook A) of eir's Customer Model (as amended by TERA), specifically:
  - the allocation key applied to avoidable "service specific costs"; and
  - the adjustment of distance sensitive OPEX for avoidability.

137. Figure 10 sets out the location within eir's Customer Model (as amended by TERA) of the further calculation adjustments made to: (i) the 2016 CAM inputs; and (ii) the ACD Model.

Figure 10 : Location of further calculation adjustments in the Adjusted Customer Model



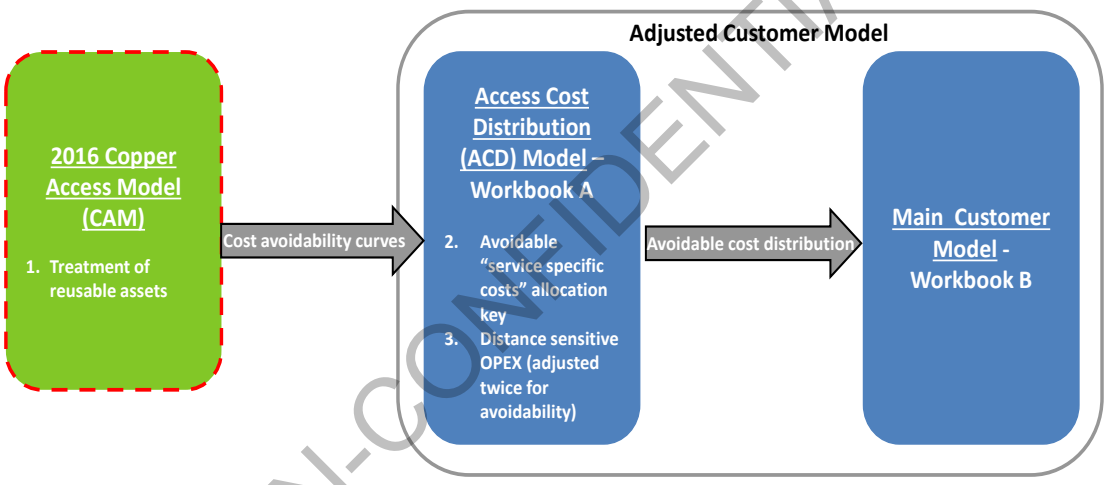
5.3.2.1.1 2016 CAM: treatment of reusable assets

138. The 2016 CAM was developed to assess, for a hypothetical efficient operator, the cost of deploying a network with topology, coverage, and demand characteristics similar to eir's network to inform the setting of cost-oriented prices for regulated wholesale access services.

139. In the context of modelling the cost of the USO, eir uses the CAM, where there is an insufficient level of actual granular data available, to provide guidance on how costs are attributed.

140. The selection of parameters relating to the treatment of reusable assets is located in the 2016 CAM, which produces inputs to eir's Customer Model (as amended by TERA).

Figure 11: Location of further calculation adjustment – treatment of reusable assets



141. The 2016 CAM has the functionality to support both a:

- "Bottom-Up approach" i.e., Long-Run Average Incremental Costs plus ("BU-LRAIC+") approach (assets valued using current cost accounting (CCA)); and
- "Top-Down approach" i.e., assets valued using historical cost accounting ("HCA").

142. Initially, a Top-Down approach was used by TERA in eir's Customer Model (as amended by TERA). TERA identified two calculation errors relating to the use of a Top-Down approach. TERA has now used a Bottom-Up approach to correct these calculation errors.

143. The correction of these calculation errors leads to a decrease in the total calculated direct net cost of €1.47m.

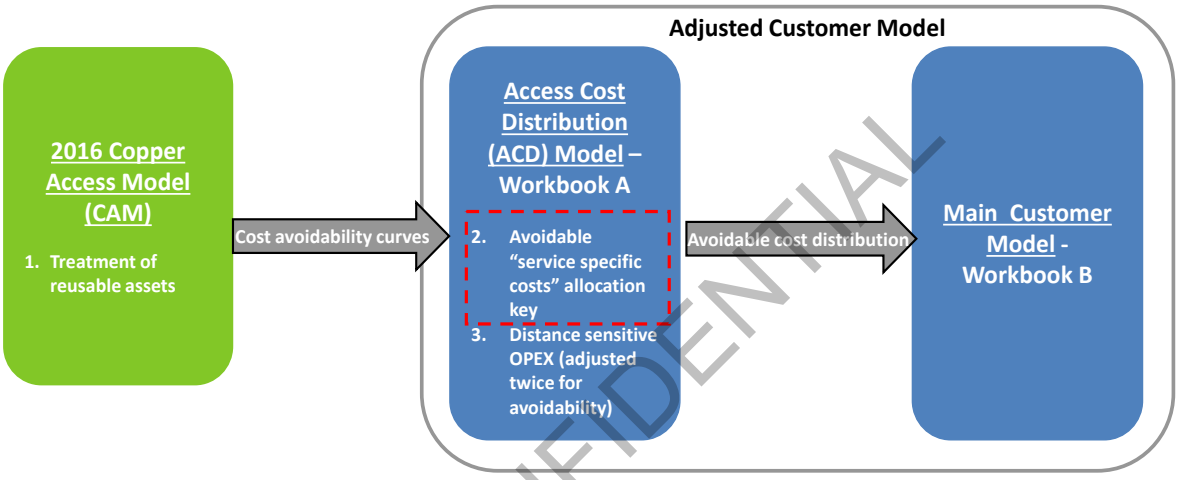
144. Further details are set out in TERA Report A, section 2.

5.3.2.1.2 Access Cost Distribution Model

5.3.2.1.2.1 Avoidable "service specific costs" allocation key

145. The adjustment to the allocation key applied to "service specific costs" is located in the ACD Model (Workbook A) of eir's Customer Model (as amended by TERA).

Figure 12: Location of further calculation adjustment – allocation key applied to "service specific costs"



146. The eir Customer Model (as amended by TERA) identifies a number of cost categories and assigns an allocation key to each category to enable avoidable costs to be distributed over percentiles of lines.

147. There are two main types of allocation keys:

- "Total" allocation key: distributes total costs associated with each distance sensitive category. It isolates avoidable costs within the total costs and then distributes these avoidable costs over each percentile of lines; and
- "Equi" allocation key: distributes avoidable costs equally over each percentile of lines.

148. TERA identified that the "Total" allocation key was used instead of the "Equi" allocation key for a subset of costs (i.e., Other_NDist, Linecard, Pair Gain, PSTN, DSL-R, SB-WLR, ULMP, Line Share, DSL-B, PP, LL, and provisioning) within the "Service specific CAPEX categories". The "Equi" cost allocation key should have been used to reflect the non-distance sensitive nature of these costs.

149. Accordingly, TERA has now replaced the "Total" allocation key with the "Equi" allocation key for this specific sub-set of costs within the "Service specific CAPEX categories".

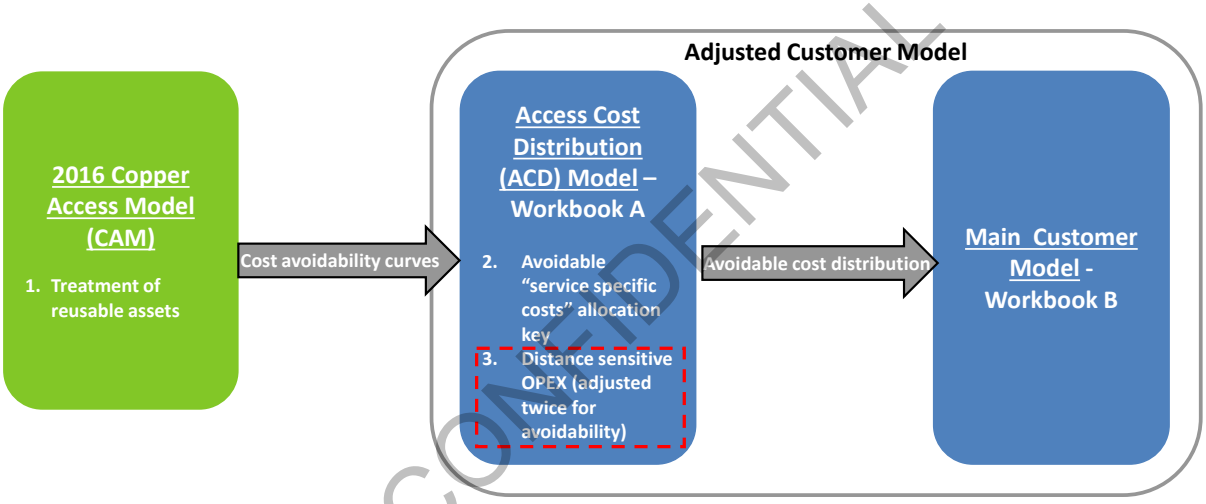
150. The correction of this calculation error leads to a decrease in the total calculated direct net cost of €1.47m.

151. Further details are set out in TERA Report A, section 3.

5.3.2.1.2.2 Distance sensitive OPEX

152. The application of allocation keys to costs, including Distance sensitive OPEX, is located in ACD Model (Workbook A) of eir's Customer Model (as amended by TERA).

Figure 13: Location of further calculation adjustment – adjusting distance sensitive OPEX for avoidability



153. eir's Customer Model breaks down the service specific cost category between: (i) fully avoidable costs; (ii) partially avoidable costs; and (iii) unavoidable costs.

154. In the Proposed ComReg Methodology, the "Total" allocation key was applied to fully avoidable OPEX costs only.

155. The "Total" allocation key should have been applied to the total costs for this category, regardless of their avoidability, and should not have been limited to only the fully avoidable OPEX.

156. Accordingly, TERA has now applied the "Total" allocation key to the total distance sensitive OPEX costs, i.e., to: (i) fully avoidable costs; (ii) partially avoidable costs; and (iii) unavoidable costs.

157. The correction of this calculation error leads to an increase in the total calculated direct net cost of €2.32m. Further details are set out in TERA Report A, section 4.

158. Details of the engagement which took place between eir and ComReg in this regard are outlined in Annex 1 of this document.

159. The further calculation adjustments have an impact on eir's Customer Model (as amended by TERA). The impact is that the calculated direct net cost of the Adjusted Customer Model is €11,118,560 (as compared to the figure of €11,970,982 claimed by eir in its 2015-2016 USO funding application). ComReg is of the view that a downward adjustment of €852,422 to eir's Customer Model (as submitted to ComReg) is required.

160. ComReg is of the view that, subject to ComReg's adjustments (to reflect the use of the 2016 CAM in the Customer Model, and the Payphone Model and consultancy fees adjustments), eir's application was fit for purpose.

5.3.2.2 ComReg's decision

161. ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that the use of a probabilistic approach for eir's 2015-2016 USO funding application in respect of eir's Customer Model is reasonable.

162. ComReg has decided that subject to ComReg's adjustments to eir's direct net cost calculation including a downward adjustment to eir's calculation of the direct net cost in eir's Customer Model (as amended by TERA) to reflect the more consistent and accurate use of the 2016 CAM, eir's 2015-2016 USO funding application meets the requirements of Decisions 10, 12, 13,14 and 25 of D04/11.

163. ComReg's decisions with respect to compliance with Decisions 10, 12, 13, 14 and 25 of D04/11 are set out in Figure 14 below. While ComReg has decided that each of the requirements of each of these decisions was met by eir, ComReg has decided that the mixed use by eir of the 2009 CAM and the 2016 CAM requires an adjustment.

Figure 14: ComReg's Decision - Compliance with Decisions 10, 12, 13, 14 and 25 of D04/11

D04/11 Decision	ComReg's Decision
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").**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir has met the requirements of Decision 10 by excluding customer who were originally considered "uneconomic" and have now become profitable.
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).**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA that the depreciation method applied by eir is reasonable and meets the requirements of Decision 12.
Decision 13	**Uneconomic customers in economic areas shall be identified based on u iversal 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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir has met the requirements of Decision 13. As there was a lack of information which was beyond the control of eir it was not practicable for eir to identify each uneconomic customer by its UAN and eir appropriately applied a probability approach in order to identify uneconomic 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 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.**

	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA in relation to the Customer Model, that eir has adhered to the requirements of Decision 12 and Decision 14 with respect to the use of a probability approach for the identification and allocation of uneconomic customers to uneconomic areas.
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.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir's 2015-2016 USO funding application identified uneconomic customers appropriately and provided adequate reasoning for its approach.

164. On the basis of TERA's overall evaluation and amendment of eir's methodological approach to the Customer Model and the underlying direct net cost calculations for uneconomic customers in economic areas, ComReg has decided that the calculated direct net cost of the Customer Model is €11,118,560.

5.3.3 Directories Model

165. The Directories Model calculates the net avoidable cost for the provision of a printed directory (free of charge, at least once a year).

166. TERA found that the direct net cost of the Directories Model was €680,000.

5.3.3.1 Key changes

167. There were no changes in the methodology or approach to calculating the Directories Model in eir's 2015-2016 USO funding application versus that adopted in eir's 2009-2010 USO funding application.

168. A new eir/ FCR Media Ltd. commercial agreement[40] has resulted in the cessation of advertising revenue payments by FCR Media Ltd. to eir. Accordingly, eir no longer received payment from FCR Media Ltd. in respect of third-party advertising revenue associated with USO printed Directories.

169. This commercial agreement for 2015/16 is summarised below:

- eir makes an annual payment to FCR media Ltd. of €680,000 for the provision of directories.
- FCR Media Ltd. has the sole and exclusive rights to publish the White Pages directories on behalf of eir;
- FCR Media Ltd. has the sole and exclusive right to sell enhancements in the White Pages 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.

170. TERA considered that the cost to eir (payment by eir to FCR Media Ltd.) in relation to eir's own advertising in the USO printed directories was intrinsic to the commercial contract with FCR Media Ltd., where approximately of equal value, the cost represented the benefit.

171. However, TERA also noted that in principle brand positioning of eir's logo and name in the printed directories could, if there was evidence that the cost did not adequately reflect the benefit, generate an intangible benefit for eir similar to the one from displaying its logo on uneconomic payphones. If this turned out to be the case, this benefit could in principle be included in an intangible benefits assessment. However, for the purposes of this application, TERA is of the view that it is most appropriate that the advertising charge should be included as a relevant cost in the direct net cost model and deducted from the revenues eir receives from FCR Media Ltd. As such, any tangible benefit considered to off-set the advertising charge payable by eir has been taken into account in the direct net cost calculation. It may be excluded from the intangible benefits assessment. Decision 36 provides that there must be no double counting.

5.3.3.2 ComReg's Decision

172. ComReg is satisfied, on the basis of the assessment and review undertaken by TERA, that eir's 2015-2016 USO funding application in respect of Directories is consistent with the principles and methodologies of D04/11 and specifically Decision 17 of D04/11.

[40] Eircom Limited and FCR Media Ltd. "Agreement for the provision of goods and services to eircom" dated 23 April 2015.

Figure 15: ComReg's decision - Compliance with Decision 17 D04/11

D04/11 Decision	ComReg's Decision
Decision 17	**For Directories, the net cost calculation shall use the total avoidable cost, minus total revenues of this service.**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA that the approach, assumptions and calculations applied by eir in arriving at the directories avoidable cost estimate, is in accordance with Decision 17.

173. ComReg confirms, on the basis of the assessment and review undertaken by TERA of the Directories Model and the underlying direct net cost calculations, that the calculated direct net cost of the Directories Model is €680,000.

5.3.4 Payphone Model

174. The USO consists of the provision of a defined set of services to end-users at an affordable price. As well as provision of access at fixed locations and telephone services (as discussed above), these services include provision of public payphones (mandatory public payphone provision).

175. With respect to loss making payphones, only those payphones that are subject to USO obligations can be considered as part of the direct net cost. For the avoidance of doubt, the USO only covers those payphones that are available on the street, and in other public areas available to the public at all times (i.e., unrestricted access).

176. ComReg Decision D08/14, "Provision of Public Payphones Universal Service: Scope and Designation" 7 July 2014, "Removals Policy" states that:

"The USP is permitted to remove a public pay telephone on a single site where:

i. there is demonstrable evidence that the removal of the public pay telephone is necessary as the public pay telephone concerned is a focus for anti-social behaviour; or

ii. the usage in the previous six months of the public pay telephone (while in reasonable working order) has been low, indicating an absence of "reasonable need" in that location, where "low" is considered to mean:

- *Average Usage (including local, national, international, emergency calls, DQ calls, Freephone calls and reverse charge minutes) for the previous six months is less than 1 minute per day and*
- *Average minutes for the previous six months to Freephone numbers and Emergency Services combined is not more than 30 seconds of these minutes;*

Or,

iii. there is more than 1 public pay telephone on the site and the average usage across all of the public pay telephones on the single site does not meet the low usage standards as set out in 4.1(ii); in such instances the USP shall ensure 1 public pay telephone remains on the single site; or it is requested by a local authority."

177. Decision 16 of D04/11 sets out that only the direct net cost of mandatory public payphone provision is relevant to the assessment of the USO funding application. Decision 16 states: "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 mandato y)."

178. The Payphone Model aims to calculate the direct net cost of uneconomic payphones in economic areas (the potential cost of uneconomic payphones in uneconomic areas are captured in the analysis of net costs in the Area Model and therefore are excluded from the Payphone Model).[41]

179. The Payphone Model identifies access, core, maintenance, and phone card costs as relevant for consideration in the direct net cost assessment. eir submitted that relevant payphone revenue includes, amongst others, call revenue, advertising revenue and Wi-Fi revenue.

180. TERA was requested by ComReg to analyse, based on the "Removals Policy", the number of USO payphones claimed by eir within the Payphone Model. TERA's analysis indicates that revenues and costs associated with [✂ ✂]payphones (in addition to [✂ ✂]payphones disallowed by TERA in eir's 2014-2015 USO funding application) should be disallowed from the Payphone Model, reducing the 2015-2016 Payphone Model direct net cost to €22,929.

181. As set out in Figure 1, eir claimed as part of its 2015-2016 USO funding application a direct net cost of €383,260 for [✂ ✂] uneconomic payphones in economic areas. However, TERA found that, taking account of required adjustments to the Payphone Model, the direct net cost was €22,929.

[41] This is to avoid a potential double count of these avoidable costs and revenues foregone, in accordance with D04/11.

5.3.4.1 Key changes

182. Overall, TERA observed an increase in the number of uneconomic payphones in economic areas associated potential net costs when compared to previous USO application periods.

183. TERA's assessment of eir's 2015-2016 USO Funding Application Payphone Model, established that there were [✂ ✂] USO payphones. [✂ ✂] of these USO payphones were economic, and [✂ ✂] were uneconomic. ComReg is of the view that eir had included additional costs associated with payphones which were avoidable [✂ ✂] and therefore decided to adjust the Payphone Model direct net cost downwards.

184. Having analysed eir's Payphone Model for cost identification and allocation as well as the direct net cost estimate following TERA's adjustment to the Payphone Model, TERA confirmed that the principles and methodology applied by eir within its Payphone Model were in accordance with Decisions 16 and 27 of D04/11 in this application period.

5.3.4.2 ComReg's decision

185. ComReg has decided on the basis of the assessment and review undertaken by TERA, and the subsequent amendment of the direct net cost claimed in eir's 2015-2016 USO funding application, that calculations contained in the Payphone Model are in accordance with the principles and methodology in D04/11.

186. During the application period 2015-2016, ComReg notes that D08/14 "Removals Policy" was in place. ComReg has decided that eir has included additional costs associated with payphones which were avoidable. Accordingly, ComReg has made an adjustment to remove these avoidable costs.

187. Under Decision 16 of D04/11, ComReg may also apply a downward adjustment to eir's direct net cost of fulfilling its USO payphone obligations for 2015/16 with a view to ensuring the efficient deployment of USO payphones and their associated net costs.

188. eir's direct net cost of the Payphone Model prior to any adjustment is €383,260, which equates to approximately 2.8% of the total direct net cost in 2015-2016.

189. The direct net cost of the Payphone Model after ComReg's adjustment is €22,929 which equates to approximately 0.3% of the total direct net costs in 2015-2016.

190. For this application period, ComReg does not consider that it is necessary to make a further downward adjustment to the level of direct net cost reflected in the Payphone Model on the basis Decision 16 of D04/11. ComReg has decided that an adjustment to the direct net cost of the Payphone Model on the basis of Decision 16 of D04/11 would not significantly impact the total direct net cost in 2015-2016.

Figure 16:ComReg decision- Compliance with Decisions 16 and 27 of D04/11

D04/11	ComReg's Decision
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).**
	ComReg is satisfied, taking into account the adjustments to the Payphone Model outlined in TERA's report and above and it is not necessary to apply a further adjustment to the net cost calculation for uneconomic USO payphones on the basis of Decision 16 that eir's methodology, assumptions and calculations in arriving at the USO payphones direct net cost are in accordance with Decision 16.
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).**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA of eir's 2015/2016 USO funding application, that sufficient information on uneconomic payphones was provided by eir in respect of the location and proximity of uneconomic payphones for the purposes of this application.

191. In summary, on the basis of the assessment and review undertaken by TERA of eir's Payphone Model, ComReg has decided that the calculated direct net cost of the Payphone Model is €22,929

5.3.5 Disabled End Users' Services Model

192. The Disabled End Users' Services Model calculates the net avoidable cost for the provision of disabled end users' services (text relay, specialised equipment, and free directory enquiry and braille bills).

193. TERA found that the direct net cost of the Disabled End Users' Services Model was €16,336. This amount reflects the direct net cost claimed by eir in its 2015-2016 USO funding application.

5.3.5.1 Key changes

194. Decision 18 of D04/11 outlines requirements for the approach and calculation of the net avoidable cost for the provision of disabled end users' services.

195. There were no changes in the methodology or approach to calculating the Disabled End Users' Services Model in eir's 2015-2016 USO funding application. TERA considered that the methodology and calculations underlying the Disabled End Users' Services Model were in accordance with D04/11 and were reasonable for inclusion in eir's 2015-2016 USO funding application.

5.3.5.2 ComReg's decision

196. ComReg is satisfied, on the basis of the assessment and review undertaken by TERA that the methodology, assumptions and calculations underlying the Disabled End Users' Services Model were in accordance with D04/11 and are reasonable for eir's 2015-2016 USO funding application. ComReg's decision with respect to compliance with Decision 18 of D04/11 is set out in Figure 17 below.

Figure 17: ComReg Decision - Compliance with Decision 18 of D04/11

D04/11	ComReg's Decision
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).**
	ComReg is satisfied, on the basis of the assessment and review undertaken by TERA that the methodology, assumptions and calculations applied by eir in arriving at the Disabled End Users' Services avoidable net cost estimate is in accordance with Decision 18.

5.4 Direct net cost overlap with intangible benefits

197. In accordance with Decision 36 of D04/11, TERA's assessment investigated potential overlaps between the direct net cost calculations and the intangible benefit estimates to ascertain whether there was evidence of double counting. TERA also performed checks to ensure input or source values relevant to both the direct net cost USO model and the intangible benefits model were correct, used consistently and corresponded to the outputs of the relevant model.

198. This involved reviewing the Frontier Intangible Benefits Report and the Oxera Intangible Benefits Report and informing ComReg of any potential overlaps.

199. Following these checks, TERA made adjustments to the direct net cost calculations in the Payphone Model (as described in section 5.3.4 above). This required some consequent minor adjustments to the intangible benefits estimates, which Oxera made, where required.

5.4.1 Key changes

200. Despite the minor calculation adjustments referred to above, there were no methodological changes resulting in an overlap between the direct net cost calculations and the intangible benefits estimates in eir's 2015-2016 USO funding application.

5.4.2 ComReg's decision

Figure 18: ComReg's decision - Compliance with Decision 36 of D04/1

D04/11	ComReg's Decision
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).**
	ComReg is satisfied, on the basis of the assessment and review undertaken by both Oxera and TERA, that there is no evidence of double counting with the direct net cost methodology and that the appropriate benefits, accruing only as a result of eir's USP status, are considered.

5.5 Overall direct net cost calculation – ComReg's decision

201. ComReg has decided, on the basis of the assessment and review undertaken by TERA, that the changes to the methodology between eir's 2014-2015 and 2015-2016 USO funding applications were appropriate, and that adjustments made by ComReg to eir's 2015-2016 USO funding application (regarding the Customer Model, Payphone Model and consultancy fees) were necessary to ensure the accuracy of the direct net cost calculation in line with the relevant principles and methodologies in D04/11 outlined in this Section.

202. ComReg has decided that the calculated direct net cost is €12,282,784, (after a total downward adjustment of €1,452,133, as summarised in Figure 19 below.

Figure 19: Summary of direct net cost

USO Net Cost 2015-2016		2015-2016 eir's USO funding application	ComReg Adjustment €	2015-2016 ComReg's Decision €
Direct net cost (a)	Uneconomic Areas	€444,959	-	€444,959
	Uneconomic Customers	€11,970,982	(€852,422)	€11,118,560
	Directories	€680,000	-	€680,000
	Public Payphones	€383,260	(€360,331)	€22,929
	Services for disabled end users	€16,336	-	€16,336
	Consultancy fees*	€239,380	(€239,380)	€0
	Direct net cost**	**€13,734,917**	**(€1,452,133)**	**€12,282,784**

* ComReg has decided that consultancy fees are not a part of the net cost having regard to D04/11 and the provisions of the Universal Service Directive and the Universal Service Regulations (as more fully set out in Section 6).
** Rounding to zero decimal places

6 Consultancy fees

203. eir's 2015-2016 USO funding application included a figure of €239,380 for "Consultancy Fees". No explanation was given for the inclusion of this figure. In June 2019[42], at ComReg's request, eir provided further information including invoices in respect of consultancy fees paid.

204. ComReg has decided that the consultants' fees incurred and claimed by eir in its 2015-2016 USO funding application were not net costs of the universal service but incurred in relation to the preparation of its application for funding.

205. ComReg has decided that, having regard to D04/11, the wording of the Universal Service Directive and the Universal Service Regulations, consultancy fees relating to the preparation and submission of a USO funding application, which are not directly incurred as a result of the provision of USO services, do not form part of the net cost. ComReg has decided that, on this basis and for the reasons outlined below, consultancy fees claimed by eir should be excluded from the calculation of the net cost.

206. With respect to the specific costs that may be claimed by a USP as a consequence of providing USO services, Decision 2 of D04/11 states that:

> *"It is only the portion of costs, both capital and operational expenditure for the given financial year that can be directly attributed to the USP 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".*

207. This, in ComReg's view, reflects the wording of Article 12 (Costing of universal service obligations) of the Universal Service Directive and Regulation 11 of the Universal Services Regulation. Specifically, Article 12(1) of the Universal Services Directive identifies the object of the net cost calculation as follows:

> *"(1). Where national regulatory authorities consider that the provision of universal service as set out in Articles 3 to 10 may represent an unfair burden on undertakings designated to provide universal service, they shall calculate the net costs of its provision."*[43]

[42] In correspondence, eir noted that the actual amount incurred in respect of consultancy fees was approximately [✂ €[redacted] ✂] less than the amount claimed in the Frontier Report 'USO Model Documentation – 2015/16: a report prepared for eir'. eir explained that this higher figure was not reflective of the finalised fee estimate from PwC.

[43] Article 12 (1) of the Universal Service Directive is transposed by Regulation 11 (1) of the Universal Services Regulations, which states:
"11. (1) Where an undertaking designated as having an obligation under Regulation 3, 4, 5, 6, 8 or 9 seeks to receive funding for the net costs of meeting the obligation concerned, it may submit to the Regulator a written request for such funding."

208. In forming its decision, ComReg further considered Article 13 (Financing of universal services obligations) of the Universal Service Directive, which sets out what costs may be entitled to financing (i.e., funding), if an unfair burden is found to exist and a sharing mechanism were to be established. In this regard, Article 13 (2) states:

> *"(2) …Only the net cost, as determined in accordance with Article 12, of the obligations laid down in Articles 3 to 10 may be financed."*[44]

209. ComReg also had regard to Part B of Annex IV of the Universal Service Directive which states that:

> *"The recovery or financing of any net costs of universal service obligations requires designated undertakings with universal service obligations to be compensated for the services they provide under non-commercial conditions."*[45]

210. Having regard to the Universal Service Directive, the Universal Service Regulations and Decision 2 of D04/11, ComReg has decided that consultants' fees incurred by eir should be disallowed from the net cost as they relate to the preparation and submission of the USO funding application and not to the provision of USO services. ComReg remains of the view that the cost of making such a USO funding application may involve some services provided by consultants to advise eir in submitting its USO funding application, and which legitimate costs are not costs of any universal service obligation referred to in Articles 3 to 10 of the Universal Services Directive.

211. The decision to make a USO application for funding is eir's commercial decision and is not required by any universal service obligation. It should be noted that ComReg also considers that the costs attributable to preparing a USO funding application should decrease over time. In this respect, ComReg notes that since eir's 2009/10 USO funding application, the consultancy fees claimed by eir have decreased considerably from €750,000 in 2009/2010 to €239,380 in eir's 2015-2016 USO funding application.

[44] Article 13 (2) of the Universal Service Directive is transposed by Regulation 12 (2) of the Universal Services Regulation as follows:
"(2) The Regulator shall establish a sharing mechanism administered by it or a body independent from the designated undertaking, which body shall be under the supervision of the Regulator. Only the net cost, as determined in accordance with Regulation 11, of the obligations provided for in Regulation 3, 4, 5, 6, 8 or 9 may be financed."

[45] The same wording appears in the Universal Service Regulations at Schedule 2, Part B.

7 Approach to calculating intangible benefits

212. This section sets out ComReg's decision on the intangible benefits calculation of eir's 2015-2016 USO funding application (Figure 16).

213. Decision 35 of D04/11 requires that the net cost calculation must assess the benefits, including intangible benefits that accrue to the USP, by virtue of being the USP. It provides that, at a minimum, ComReg will consider the following benefits:

- Brand recognition;[46]
- Ubiquity;
- Lifecycle; and
- Marketing.

214. Decision 36 of D04/11 sets out the key principles underpinning the identification and quantification of the aforementioned intangible benefits, summarised as follows:

- The benefits represent effects on a USP of providing the USO which have not been accounted for in the direct costing methodology
- 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).

215. Decision 37 refers to methodologies and data sources for calculating the benefits. In reviewing the calculations and data sources used by the USP to assess the value of benefits, Decision 37 notes that ComReg reserves the right to implement alternative methodologies and data sources to verify the appropriateness of the value of the benefits resulting from the USO.

216. ComReg commissioned Oxera to review the Frontier Intangible Benefits Report, which outlined eir's approach to the estimation of the intangible benefits and to obtain its view as to the robustness and accuracy of the estimate for inclusion in the net cost. Oxera's assessment was provided to ComReg in the Oxera Intangible Benefits Report, published as part of this consultation at Annex 4.

[46] This may also be referred to in this consultation document as "enhanced brand recognition".

217. eir's intangible benefits estimates, an adjustment made by ComReg and its consultants to eir's 2015-2016 USO funding application, and ComReg's decision on the value of intangible benefits is set out in Figure 20 below.

Figure 20: eir's estimates and ComReg's decision on the Intangible Benefits

USO Net Cost 2015-2016		2015-2016 eir's USO funding application	ComReg Adjustment €	2015-2016 ComReg's Decision €
Intangible benefits (b)	Enhanced brand recognition	€739,171	€0	€739,171
	Life-Cycle	€15,885	-€15,885	€0
	Ubiquity	€11,716	-€116	€11,600
	Marketing	€106,715	-€105,023	€1,692
	Total intangible benefits	**€873,487**	**-€121,024**	**€752,463**

218. ComReg, having considered the Oxera Intangible Benefits Report, the TERA Report, and information submitted by eir in response to the clarifications process, has decided that eir's 2015- 2016 USO funding application is in adherence with D04/11 and specifically in terms of the intangible benefits assessment, with Decisions 31, 35, 36 and 37 of D04/11.

7.1 Overview of Oxera's intangible benefits assessment

219. Oxera undertook a detailed assessment of the methodologies and calculations applied by Frontier on eir's behalf,[47] to establish the estimate of the intangible benefits generated as a result of the provision of USO services in 2015-2016.

220. The Oxera Intangible Benefits Report is structured as follows:

- Section 2 summarises Oxera's assessment of eir's approach to estimating the enhanced brand recognition benefits, by virtue of being the USP.
- Section 3 summarises Oxera's assessment of eir's approach to estimating the life cycle benefits, by virtue of being the USP.
- Section 4 summarises Oxera's assessment of eir's approach to estimating the ubiquity benefits, by virtue of being the USP.

[47] The Frontier Intangible Benefits Report

- Section 5 summarises Oxera's assessment of eir's approach to estimating the market benefits, by virtue of being the USP.

221. Oxera's assessment of eir's 2015/16 USO funding application involved:

- developing an understanding of the approaches and methodologies adopted by eir and determining their rationale and suitability in calculating the estimation of each intangible benefit category.
- evaluating the methodologies adopted in eir's USO funding application and the estimates of each intangible benefit category, in respect of their effectiveness and robust implementation in the overall analysis.

222. Oxera raised a number of queries and requests for clarification in relation to the approach used by Frontier. This led to a process of engagement between ComReg and eir, whereby eir engaged Frontier to provide ComReg with responses to Oxera's queries.

223. Additionally, as set out in Section 5, TERA analysed and advised ComReg in relation to the direct net cost elements of the USO for 2015-2016. Oxera liaised with TERA in relation to certain matters to ensure there was no overlap or double counting between revenues accounted for in the direct net cost and the intangible benefits estimates.

224. Oxera has also liaised with TERA with respect to a number of the inputs from the direct net cost USO models (the Area Model and Customer Model) that are used in the calculation of some of the intangible benefits.

225. Figure 20 above sets out the estimates for each intangible benefit category as verified by ComReg and its consultants. The key changes in eir's 2015-2016 USO funding application with respect to the methodology and calculations used to estimate intangible benefits are summarised in this Section and further details are set out in the Oxera Intangible Benefits Report.

7.2 Identification and quantification of the intangible benefits

226. As noted above, Decisions 35 and 36 of D04/11 set out the principles to identify of the benefits (including intangible) that can accrue to the USP, and to avoid any double counting of benefits between the direct net cost calculation and the intangible benefits estimate.

227. In accordance with Decision 35 of D04/11, eir's 2015-2016 USO funding application estimates the following benefits:

- Enhanced brand recognition.

- Ubiquity;
- Lifecycle; and
- Marketing.

7.2.1 Enhanced brand recognition

228. Enhanced brand recognition refers to the benefits generated as a result of greater brand recognition, corporate reputation and associated goodwill as a result of the provision of USO services.

229. The enhanced brand recognition estimates set out in eir's 2015/16 USO funding application was €739,171.

230. Oxera has reviewed the approach taken by eir in determining the value of brand recognition benefits. Oxera engaged with eir/Frontier to clarify the rationale for eir's change the methodology (i.e. from assessing the enhanced brand recognition benefits separately for DSP and non-DSP subscribers). Oxera consider that absent a new survey, the approach taken by eir is appropriate. In Oxera's view, eir's high-level principles for estimating the enhanced brand recognition benefit were consistent with D04/11. It was noted by Oxera that the specific micro economic model used by eir, and its application of principles had been modified to take account of Oxera's previous recommendations on improvements to the methodology for this benefit valuation. This is set out in detail in the Oxera Intangible Benefits Report.

231. On the basis of the analysis and reasoning set out in the Oxera Intangible Benefits Report, ComReg has decided that the value estimated by eir for the enhanced brand benefit of €739,171 for the purposes of eir's 2015-2016 USO funding application is reasonable.

7.2.2 Life-Cycle benefits

232. Potential life-cycle benefits that may be enjoyed by the USP over time, include subscribers who may have been uneconomic, but who become profitable owing to changes in respect of usage of the USP's services.

233. eir used a net present value approach to estimate the profits generated from uneconomic customers in each year over their lifetime, based on forecasts of future volumes, prices and avoidable costs. The present value of this stream of profits was then calculated for each customer. Customers who had a positive net present value (from a life-cycle perspective) were considered to be economic and were removed from the list of uneconomic customers when the direct net cost of the USO was calculated. The benefit was therefore calculated as the reduction in the estimated net cost of the USO due to the removal of customers and areas that were uneconomic in a single year, but economic from a life-cycle perspective.

234. eir has used a time horizon of five years as it considered that eir's customer lifetime was the appropriate time period to use when calculating the life-cycle benefits.[48]

235. Oxera identified a mechanical error in one of the formulas used by eir to calculate the revenue mark-up by eir. [✂ [redacted] ✂]

236. [redacted] As a result, Oxera consider that in the 2015/16 application period there were no lifecycle benefits.

237. Oxera found eir's approach to estimating the life-cycle benefits and the assumptions used as part of the calculation to be reasonable. Oxera noted that eir's high-level principles for estimating life-cycle benefits were consistent with the principles followed in eir's 2009/10 Intangible Benefits Report.[49] Oxera noted, however, that the application of the principles had been modified to take account of Oxera's recommendations in respect of eir's 2009-2010 USO funding application. Oxera noted that the methodology for calculating the life cycle benefit and the intangible benefits model eir used for 2015/16 are the same as those used in its final 2014/15 USO funding application.

238. Oxera has also confirmed certain matters with TERA to ensure there was no overlap or double counting between revenues accounted for in the direct net cost calculation and the intangible benefit estimates.

239. Overall, Oxera considered that eir's approach to estimating the life-cycle benefits, and the applications of this approach were in accordance with D04/11.

[48] eir uses a time horizon of five years to generate a 'central estimate'. To check how sensitive the estimates are to the time period used, eir considered a range of three to five years and found that the results were not sensitive to the choice of time period.

[49] WIK-Consult, 'Intangible Benefits of Universal Service Provision in Ireland; Report for eircom for the 2009/10 financial year', 30 November 2012.

240. On the basis of the analysis and reasoning set out in detail in the Oxera Intangible Benefits Report, ComReg decided that the life-cycle benefit model inputs imply that there were no life-cycle benefits in 2015-2016. Therefore, the life-cycle benefit has been adjusted by ComReg to €0 for the 2015/16 period.

7.2.3 Ubiquity benefits

241. Ubiquity benefits refer to the profit that the USP derives, owing to its USP status, from retaining a proportion of consumers who move from uneconomic to economic areas. Specifically, some customers who migrate are likely to remain as customers of the USP rather than switching to an alternative provider, because they are aware that the USP can provide them with services in all areas and are uninformed about the presence of other providers.

242. In addition, ubiquity benefits can arise from the ability of the USP to market to business customers that it is able to service their requirements nationally. Ubiquity benefits may also arise from the economic benefit a USP derives as a result of positive network externalities.

243. eir's estimate of the ubiquity benefits is solely based on the benefits arising from migration flows, i.e., an estimate of the increase in profit margins that eir generated from retaining a greater share of customers moving from uneconomic to economic areas, as a result of its USP status, than it would otherwise have retained.

244. In the 2015/16 USO funding application, eir included an additional parameter, alpha (α), that was not included in eir's 2009/10 Intangible Benefits Report, to reflect that only some of its customers were unaware of alternative providers when they move.

245. Alpha (α) represented the percentage of eir residential customers who were unaware of alternative providers. This parameter has been added to ensure that only customers who moved from uneconomic to economic areas *and* who were unaware of alternative providers were included in the calculation.

246. In eir's 2015-2016 application, alpha is based only on the responses provided by non-DSP subscribers. In response to Oxera queries, eir/Frontier provided justification for the change in approach (i.e., as to ensure consistency between the sample used to estimate the parameter and the sample used to calculate the willingness to pay parameter for the enhanced brand recognition benefits). However, eir stated that it does not see any reason why awareness of other operators would be dependent on the DSP subsidy and, therefore suggested reverting to the approach used in previous applications.

247. Oxera therefore re-estimated the ubiquity benefits based on the alpha derived from responses provided by both DSP and non-DSP subscribers, rather than the alpha based on non-DSP subscribers only. This change in the parameter had a marginal impact on the estimated ubiquity benefits, decreasing the estimate submitted by eir by €116, from €11,716 to €11,600.

248. Oxera also noted that the way in which β[50] is calculated for eir's 2015-2016 USO funding application has been changed since eir's 2009/10 Intangible Benefits Report, although the meaning of the term remained the same.

249. The number of eir customers was based on the number of eir's lines as opposed to the number of accounts. eir clarified, and Oxera agreed, that for the purposes of estimating ubiquity benefits the number of lines was used consistently throughout the calculations.[51]

250. Oxera noted that eir's high level principles for estimating ubiquity benefits were consistent with the principles followed in eir's 2009/10 Intangible Benefits Report, though some aspects of eir's intangible benefits model have been modified to take account of Oxera's recommendations in respect of its 2009-2010 USO funding application. Oxera also noted that the methodology for calculating the ubiquity benefit and the intangible benefits model eir used for 2015-2016 are the same as those used in its final 2014/15 USO funding application. On the basis of the analysis and reasoning set out in the Oxera Intangible Benefits Report, Oxera considered that the approach used by eir to calculate the ubiquity benefit was reasonable.

251. Having reviewed Oxera's assessment of the methodology and calculation of ubiquity benefits, ComReg is of the view that eir's approach and estimation of ubiquity benefits for the purpose of its 2015-2016 USO funding application is reasonable. On the basis of advice provided by Oxera and TERA, ComReg has decided that the adjusted value for the ubiquity benefit of €11,600 is reasonable to include in the net cost calculation.

7.2.4 Marketing benefits

252. Marketing benefits associated with the USO include the benefits that the USP may derive from having access to customer data that is acquired because it is the USP, and from being able to advertise itself on uneconomic public payphones at no cost.

[50] β is eir's market share among migrants from uneconomic to economic areas – eir's market share in economic areas

[51] eir noted that basing the number of eir subscribers on the number of eir's lines is a reasonable approach and eir has also highlighted that the difference in the number of lines and the number of accounts has a very marginal impact on the estimated intangible benefits. We have been unable to test the impact of the assumption on the estimate of ubiquity as the intangibles model is based on data for individual lines.

253. eir's estimate solely focused on the benefits generated from advertising on uneconomic public payphones. eir argued that benefits from being able to use customer data from uneconomic customers and from displaying its logo on Wi-Fi hotspot login pages, was either likely to be negligible or could not be quantified robustly.

254. eir's approach to calculating the marketing benefit was consistent with the approach taken in eir's 2009/10 Intangible Benefits Report. eir's 2015-2016 application used a more detailed source of revenue data. eir was able to collect advertising revenue for each individual payphone, where in prior years only total payphone advertising revenue was available.

255. eir's estimate of the marketing benefits in its 2015-2016 USO funding application was €106,715.

256. Oxera made a downward adjustment of €105,023 to eir's estimate of marketing benefits in its 2015-2016 USO funding application. This reflects the change of status of payphones which become economic once advertising revenue is taken into account, and the exclusion of payphones for which the net cost could have been avoided by eir (see section 8.2.1 of the TERA Report and sections 5.2 and 5.3 of the Oxera Intangible Benefits Report). eir's marketing benefit estimate was accordingly adjusted by Oxera, resulting in a reduced marketing benefit of €1,692.

257. Oxera noted that eir's high-level principles for estimating the marketing benefits were consistent with the principles followed in eir's 2009/10 Intangible Benefits Report, which Oxera considered were reasonable.

258. Having reviewed the marketing benefit assessment provided by Oxera and TERA's advice, ComReg has decided that the adjusted value of €1,692 for eir's marketing benefits is reasonable to include in the net cost calculation.

7.3 ComReg's decision – total intangible benefits and positive net cost

259. ComReg is of the view, on the basis of the assessment and review undertaken by Oxera and following a downward adjustment of €105,023 to the marketing benefit, a downward adjustment of €15,885 to the life-cycle benefit, and a downward adjustment of €116 to the ubiquity benefits, that €752,463 is a reasonable estimate of the total intangible benefits that arose from eir's provision of the USO in 2015-2016 and that this amount should be included in the net cost calculation.

Figure 21: ComReg's View - Compliance with Decisions 31, 35, 36 and 37 of D04/11

D04/11	ComReg's Decision View
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).**
	ComReg confirms, on the basis of the assessment and review undertaken by Oxera, that eir has provided reports prepared by external experts, Frontier, for the purposes of calculating the benefits of the USO. The reports clearly set out the necessary calculations, methodologies and assumptions applied in calculating the benefits of the USO.
Decision 35	**The net cost calculation must incorporate an assessment of the benefits, including intangible benefits that can accrue to the USP. ComReg will consider, at a minimum, the following benefits (as a result of the USO) for a USO net cost calculation:** • **Enhanced brand recognition.** • **Ubiquity.** • **Life-cycle.** • **Marketing.**
	ComReg confirms, on the basis of the assessment and review undertaken by Oxera, that eir's estimations assessed the relevant 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).**

	ComReg is satisfied, on the basis of the assessment and review undertaken by both Oxera and TERA, that there is no evidence of double counting with the direct net cost methodology and that the appropriate benefits, accruing only as a result of eir's USP status, are considered.
Decision 37	**The methodologies to assess the value of the benefits that will actually be used cannot be prescribed in advance of receiving an application for USO funding from the USP.** **Pending receipt of the first USO funding application, ComReg will actively continue to evolve and refine a number of potential methodologies for the purposes of valuing the benefits of the USO.** **ComReg reserves the right to implement alternative methodologies and data sources to verify the appropriateness of the value of the benefits resulting from the USO.** **During the course of the USO funding application assessment, ComReg will review the valuation of the benefits provided by the USP.**
	ComReg engaged with Oxera to review the estimates prepared by Frontier (eir's independent expert) of the benefits to the USP. This included a review of the robustness and accuracy of the estimates and methodologies used by eir.

260. The net cost, as calculated equates to the difference between the avoidable costs attributable to the provision of the USO (both direct and indirect) minus the revenues (both direct and indirect) attributable to the provision of the USO.

261. Taking account of ComReg's decision on the calculated direct net cost and the total intangible benefits that arose from eir's provision of the USO, as outlined in Section 5 and Section 7 respectively, ComReg has decided that there is a positive net cost to eir for the financial year 2015/16 of €11,530,321.

8 Responses to Consultation 21/17 and Further Consultation 23/11

8.1 Consultation 21/17

262. There were four respondents (ALTO, BT, eir and Vodafone) to Consultation 21/17.

8.1.1 Direct net cost calculations

263. ComReg asked in question one whether respondents had any observations on the results of ComReg's direct net cost calculation.

264. The submissions received pertained to the following elements of the direct net cost calculation:

- Customer Model; (eir) (partially addressed in Further Consultation 23/11)
- Directories Model; (ALTO, BT)
- Payphones (ALTO, BT and eir);
- Disabled End-Users Services Model (ALTO, BT); and
- Consultancy costs (BT, eir and Vodafone).

265. The submissions received related to the following element of the net cost calculation:

- Intangible benefits (eir)

8.1.1.1 Customer Model – Respondents' submissions

266. ALTO, BT, and Vodafone make no observations on the Customer Model. eir has a number of observations which are set out at paragraphs 14 to 37 of its response to Consultation 21/17.

3km boundary

267. eir disagrees with the use of the 3km proxy under the adjusted methodology, stating that "no evidence is offered by TERA or ComReg as to the appropriateness of using a 3km boundary. The only reference is to this being consistent with previous pricing decisions".

268. eir states that "… it is not clear why consistency or alignment between the USO modelling and these pricing decisions using the 3km boundary is important or logical" adding that "the 3km boundary is a technical feasibility assumption related to local loop unbundling which is not relevant for USO".

269. eir argues that the segmentation between high/low density areas should be undertaken on 'a per line' basis as opposed to a line length basis (which the 3km boundary entails), and that "… the level of avoidability for individual customers would therefore also be expected to increase as line length increases. This is of course a general rule only". eir states that using a "one-size-fits-all" 3km boundary is not appropriate for all exchanges. Further, eir also states that "no analysis or documentation by TERA is presented to justify this assumption nor has any indication been provided that alternatives were considered, for example, the use of different length assumptions by geotype or some other method that adequately captures the specific characteristics of an individual exchange areas".

270. eir argues that the 3km boundary results in cost curves that lead to the "…exclusion of uneconomic customers that are located in closer proximity to the exchange" and that "this is contrary to what ComReg has accepted in previous applications".

Justification of the 2016 CAM parameters selected

a) Costing scenario: 'bottom-up' vs 'top-down'

271. eir does not express a view regarding the choice of the Bottom-Up approach, however, it does question the lack of justification for this approach. eir submits that, "the 2016 CAM can be set with different parameters, use of bottom-up vs top-down, active vs. total lines etc. TERA has not provided any justification for the parameters it has selected to develop the avoidability percentiles" (emphasis added).

b) Final drop scenario: active vs. total lines approach/parameter

272. eir does not express a view regarding the choice of the selected scenario, however, it does question the lack of justification for this approach. eir submits that "the 2016 CAM can be set with different parameters, use of bottom-up vs top-down, active vs. total lines etc. TERA has not provided any justification for the parameters it has selected to develop the avoidability percentiles" (emphasis added).

c) Year of calculation: choice of 2016

273. eir states that "the year of calculation is set to 2016 which refers to the 2016/17 financial year which is not consistent with the USO funding year of 2015/16."

Allocation key applied to the "Equi" cost category

274. eir makes three statements regarding the allocation of the "Equi" cost category, using the "Equi" allocation key, in the Proposed ComReg Methodology:

- this approach suggests that the number of lines is the same in each percentile group of all MDFs, which eir suggests is not the case.
- this approach to allocating "Equi" costs "results in a cost distribution where there is always one cost band with a very high proportion of lines and this cost band is where 1% of the assumed 'Equi' cost category falls within".
- that "no justification for this treatment of the cost" is provided, and that "if the 'Equi' cost category instead is allocated to the 'Total' category, i.e., treated in the same way as distance sensitive OPEX in the model, the net cost of uneconomic customers in economic areas increases by about €1.5 million".

Application of avoidability percentages under the adjusted approach

275. eir states that: "for the distance sensitive OPEX TERA add these together with other cost categories (together termed 'Total') which are subsequently adjusted for availability [sic] in the 'TERA_C_Cost_alloc' sheet, in other words TERA has adjusted for avoidability twice". eir suggests that its initial adjustments for avoidability (that eir used in the framework of its original approach) are not relevant under the Proposed ComReg Methodology, in which costs are adjusted for avoidability using avoidability cost curves derived from the 2016 CAM.

The cost allocation between MDF

276. eir states that each percentile is allocated according to each MDF's total cost, which suggests that "each percentile reflects the same cost ratios between MDF, i.e., the cost ratios in the sheet 'FAR depreciation' table 5 "Share by MDF based on 2014"". Eir adds that "it is unclear how use of a fixed ratio would affect results, but it is likely to result in distortions."

The Overhead (O/H) and Underground (U/G) deployment ratio

277. eir submits three points regarding the use of the proxy of 6 to differentiate underground deployments from overhead.

278. eir states that the use of "… an underground factor of 6 is to capture the difference between cost of underground and overhead deployments… is crude" since this ratio "… will depend on the surface type". eir adds that "trenching is considerably more expensive in built-up areas compared to rural areas, especially where the type of surface is soft such as grass and verge".

279. eir questions the use of an integer factor of 6 in the Proposed ComReg Methodology, stating that, "using the 2016 CAM we [eir] have estimated the ratio for the whole network to be 6.28. This is reasonably close to 6 but raises the question why TERA have opted to use an integer of 6 when a more accurate number is available". eir notes that when it does the same analysis of the network beyond the 3km boundary it gets "a much larger factor of around 7.6-7.8 or approximately 25% higher".

Empty percentage groups in the "SectionRanking.xlsx" file

280. eir states that, "… there are 3 percentile groups (4%, 5% 6%) which were empty, i.e., do not include active or passed lines at all", in the file "SectionRanking.xlsx" used by TERA under the Proposed ComReg Methodology.

The exclusion of certain asset classes

281. eir states that: "the 2016 CAM appears to exclude several asset classes in the process of calculating the cost allocation tables" and that, "the principles of exclusion/inclusion have not been explained and require clarification…"

282. eir refers to the 'Results' sheet of the 2016 CAM where Table no. 8 "USO Export" summarises selected annual network costs elements from Table no.5 'Network annual cost'.

Avoidable CAPEX as the main driver of OPEX

283. eir states that the Proposed ComReg Methodology assumes that "CAPEX… is the main driver of avoidability", and states that "no reference is made by TERA to the avoidability of OPEX"

Summary

284. In summary. eir states that:

"In our view it is not possible to say with any confidence that ComReg's new proposed methodology is an improvement over the established methodology used (and accepted by ComReg) in all previous submissions by eir. It is only an alternative and one which cannot be proposed by ComReg unless there is material discrepancies in the sample "reality" check in the uneconomic customer model as submitted by eir.

In our review of the 2016 CAM model and the Excel implementation of the CAM results in the Customer Model we have identified a significant number of potential shortcomings and issues which require clarification. Until these have been adequately dealt with it is not possible to have faith in the results and certainly not possible to assert as ComReg does that its approach leads to better outcomes than the one submitted by eir. Note in particular, there is no principle in ComReg D04/11 that allows for the unilateral substitution of methodology based on "better" outcomes – the requirement in Decision 15 is that 'material discrepancies' must first be identified based on carrying out reality "sense" check, before any 'proportionate 'adjustment can be proposed."

8.1.1.2 Customer Model – ComReg's response

285. ComReg notes eir's comments about ComReg's ability to make the adjustments proposed. ComReg does not agree. ComReg's position is that it is fully entitled to make the adjustments proposed. ComReg's approach is supported by the requirements of ComReg D04/11 and the Universal Service Regulations. In making the adjustments proposed, ComReg relies in particular on Decision 15 of D04/11 and Regulation 11(4) of the Universal Service Regulations. Decision 15 gives ComReg an express entitlement to "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".

286. ComReg refutes eir's claim that in making adjustments to the net cost it was implementing "a new methodology" in contrast to "the established methodology used (and accepted by ComReg) in all previous submissions by eir". The fundamental methodology used in the Proposed ComReg Methodology remains the same. The adjustments made were simply in relation to one aspect of the Customer Model and were necessary in order to facilitate using the correct CAM.

287. ComReg's actions were not a "unilateral substitution of methodology based on "better" outcomes". ComReg notes its extensive engagement with eir in relation to this issue (as summarised in Chapter 2, and set out in detail at Annex 1), following which ComReg was left with an application which was not fit for purpose. eir did not amend this application (despite being requested to) or withdraw it. ComReg considers that that in this context its approach to eir's 2015-2016 USO funding application was necessary and proportionate.

288. ComReg further consulted on a number of aspects raised by eir in response to Consultation 21/17. ComReg addresses below those elements of eir's observations that are not addressed in Further Consultation 23/11.

289. ComReg asked its consultants TERA to consider the matters raised by eir in response to Consultation 21/17. In TERA Report B[52], TERA responded to eir's submission to Consultation 21/17.

3km boundary

290. In TERA Report B, TERA responded to eir's submissions in relation to the 3km boundary as follows:

291. "In the counterfactual scenario a commercial entity would still incur a certain level of sunk costs in its commercial area. The 3km boundary is used in the proposed ComReg methodology to reflect this.

292. In the absence of further eir engagement TERA proposed a proxy 3km boundary. This proxy assumes that all costs within 3km of the MDF are unavoidable.

293. A proxy by its very nature is not an exact substitute for a given variable, however, in the absence of any further eir engagement, TERA is of the view that a 3km proxy is a reasonable approach which is consistent with ComReg Decision D11/18.

294. In this decision (regarding pricing obligations in the WLA and WCA markets) ComReg states that "for the build and buy signals to be relevant the charges should only reflect the geographic limits of the access network that is required to pass and connect the targeted base." ComReg's view in this decision was that the costs of Local Loop Unbundling ("LLU") inputs in the Next Generation Access ("NGA") Cost Model should be based on "…the line lengths and the line densities that are compatible with the Very high-speed Digital Subscriber Line ("VDSL") services they support". Subsequently, ComReg revised the maximum line lengths in the updated NGA Cost Model from 5km down to 3km, for the LLU inputs used to inform FTTC/EVDSL Virtual Unbundled Access ("VUA") charges.

[52] Please note that footnotes are not included in quotations from TERA Report B. Please see full report for footnotes.

295. Therefore, the 3km boundary is a technical feasibility assumption that has been adopted for copper-based NGA broadband services generally and not just for LLU services. NGA services can be charged at a premium above standard voice and legacy broadband services. Also, shorter line lengths tend to correlate with lower maintenance and capital costs per line. As a result, lines that are shorter than 3km are more likely to be commercially viable than the average copper line. Consequently, while TERA recognise that, in reality, this boundary (between avoidable and unavoidable costs) may differ from one MDF to another, depending on the geographic coverage of the exchange area and the dispersion of houses in that area, it is, absent any other objectively justified proxy, a reasonable and rational approach to maintain the 3km boundary that is used to inform the costing of more commercially viable copper-based NGA services as a proxy for the USO assessment of uneconomic customers on Eir's copper network".

296. ComReg has considered TERA's analysis in relation to the 3km boundary (as set out above) and agrees with it. ComReg is of the view, on the basis of the assessment and review undertaken by TERA, that it is a reasonable and rational approach to maintain the 3km boundary that is used to inform the costing of more commercially viable copper-based NGA services as a proxy for the USO assessment of uneconomic customers on eir's copper network.

Justification of the 2016 CAM parameters selected

297. In TERA Report B, TERA responded to eir's submissions in relation to the 2016 CAM parameters selected

298. In particular TERA identified that the 2016 CAM has six main parameter groupings and with reference to those stated:

"The proposed adjustment to the Customer Model element of eir's 2015-2016 funding application, set out in Consultation and Draft Determination (ComReg Document 21/17), made no adjustment to the 2016 CAM six main parameter groupings, used to generate the costs curves (i.e., input to the Access Model within eir's Customer Model, in the proposed ComReg Methodology)."

299. TERA proceeded to address eir's comments in response to Consultation 21/17 in respect of the following three 2016 CAM parameters:

a) Costing scenario – use of 'bottom up' versus 'top down' approach

b) Final drop scenario – use of 'active' lines versus 'total' lines approach

c) Year of calculation – choice of 2016 (financial year)

Costing scenario: 'bottom-up' vs 'top-down'

300. In TERA Report B TERA stated:

"The 2016 CAM can be used to reflect two different costing scenarios:

- a Bottom-Up scenario (a forward-looking approach estimating the cost of building a new efficient network); or
- a Top-Down scenario (based on the incumbent's accounting data).

301. eir questioned the lack of justification for the selection of a Bottom-Up approach in the proposed ComReg methodology, as published in ComReg 21/17.

302. The choice of a bottom-up vs top-down costing scenario does not affect the total level of cost relevant to the USO assessment, as this is always based on the costs in eir's separated accounts. It only affects the profile of the cost curves that inform how those costs would be expected to change in response to incremental changes in the level of demand.

303. Initially, as published in ComReg 21/17, TERA selected a Top-Down costing scenario. This entailed applying HCA to eir's 2014 separated accounts to calculate the costs of re-usable assets and using the normalised costs from the 2016 CAM to calculate the costs of non-reusable assets. In the proposed ComReg methodology, set out in ComReg Consultation 21/17, the L/N methodology is used to model the network for each percentile of lines, and calculates the required inventory (OPEX and CAPEX) for each percentile (1%) of lines. This approach requires 100 different network increments to be modelled. Each increment models a certain percentage (from 1% to 100%) of the total actual passive demand.

304. eir's cost accounting information identifies the cost of the network used to serve all premises in an exchange area at the MDF level, but it does not have the necessary granularity to reflect how the costs of individual asset types within each asset class (as they are modelled in the 2016 CAM) will change over the long run in response to incremental changes in the numbers of customer served in those exchanges. To reflect the cost volume relationships at the level required to support a USO customer analysis would require an in-depth review of some of the 2016 CAM modelling aspects. This would go beyond the scope of "adjusting" the USO model (i.e., would involve building a new Customer Model). As set out previously by ComReg, it is eir's responsibility to develop the Customer Model to support its funding applications.

305. Following a review of calculations in TERA's assessment of eir's 2015-2016 funding application, set out in 'Report 1', TERA made a further adjustment to the 2016 CAM and selected a Bottom-Up approach, which entails calculating the cost of a 'new' network, from the bottom up, based on the normalised costs within the 2016 CAM.

306. TERA has used the normalised costs from the 2016 CAM (based on the bottom-up approach/parameter), to generate the relevant cost curves (for each one percentile). These cost curves are then used as an input to the Access part of the Customer Model. Even though the USO assessment for a particular year is always based on the costs and revenues that are recorded in eir's separated account for that year, any analysis of cost avoidability at the customer level has to consider a longer time scale as it is essentially addressing the issue of what costs and revenues would have been avoided had a commercial network operator never chosen to serve a proportion of its customer base. Consequently, a bottom-up scenario that is designed to derive the cost of a network that would be deployed to serve a particular level of demand in a specific footprint, would seem to be better placed at supporting such an analysis than the top-down scenario, which is limited to modelling the total costs and demand incurred at the exchange level for the selected year.

307. In the absence of any other justification or position from eir, TERA is of the view that it remains appropriate to use the bottom-up approach/parameter of the 2016 CAM to generate the relevant cost curves (for each one percentile – input to the Access part of the Customer Model)."

308. ComReg has considered TERA's analysis in relation to the "Costing scenario – use of 'bottom up' versus 'top down' approach" (as set out above) and agrees with it. ComReg is of the view that remains appropriate to use the bottom-up approach/parameter of the 2016 CAM to generate the relevant cost curves (for each one percentile – input to the Access part of the Customer Model).

Final drop rollout scenario: active vs. total lines approach

309. In TERA Report B TERA stated:

"The 2016 CAM considers two scenarios for the final drop rollout:

1. The "active lines" scenario involves deploying final drop only for active lines.
2. The "total lines" scenario assumes that final drop is rolled out for all lines.

310. eir questioned the lack of justification for the selection of the "active line" approach in the proposed ComReg methodology.

311. The 2016 CAM uses the "active line" scenario, reflecting that the final drop is not rolled out for inactive lines. This is consistent with the wholesale pricing exercises undertaken by ComReg based on the 2016 CAM.

312. The 'active line' demand is defined at the MDF level within the 2016 CAM. At the MDF level, there is no indication of the specific buildings or premises for which the final drop should be modelled. Equally, TERA is of the view that there is there is no evidence of a final drop cost variation amongst the lines within an MDF. Accordingly, the additional final drop cost that would be considered in the "total lines" scenario is likely to be evenly spread across all the percentiles, and therefore would not materially change the cost curves used as an input to the Access part of the Customer Model.

313. TERA is of the view that it remains appropriate to base the calculation of the relevant cost curves on the "active line" approach in the 2016 CAM."

314. ComReg has considered TERA's analysis in relation to the "Final drop rollout scenario: active vs. total lines approach" (as set out above) and agrees with it. ComReg is of the view, on the basis of the assessment and review undertaken by TERA, that analysis remains appropriate to base the calculation of the relevant cost curves on the "active line" approach in the 2016 CAM.

Year of calculation: choice of 2016

315. TERA stated:

"The 2016 CAM is built with reference to the calendar year. The 2015-2016 Application covers the period from July 2015 to June 2016. Therefore, it is unclear on what basis eir relates the year 2016 (in the 2016 CAM) to the financial year of 2016/17, and not to 2015/16. The 2016 calendar year, which has been selected as a reference for the TERA calculation, is as relevant as the 2015 calendar year. In the absence of any further justification from eir, TERA considers that basing the calculations on 2016 calendar year is appropriate.

316. To conclude, TERA is of the view that it remains appropriate to base the calculations on the 2016 calendar year, save for the change in the "reuse" parameter as outlined above and, in greater detail, in Report A."

317. ComReg has considered TERA's analysis in relation to the "Year of calculation: choice of 2016" (as set out above) and agrees with it. ComReg is of the view that remains appropriate to base the calculations on the 2016 calendar year, save for the change in the "reuse" parameter as outlined above and, in greater detail, in TERA Report B.

Allocation key applied to the "Equi" cost category.

318. In TERA Report B, TERA responded to eir's submissions in relation to the Allocation key applied to the "Equi" cost category as follows:

319. "TERA's response to eir's three points regarding the allocation of the "Equi" cost category is summarised as follows:

(i) TERA disagrees with eir's suggestion that the number of lines are not the same in each percentile.

(ii) The occurrence of a cost band having a high proportion of lines and only 1% of "Equi" costs is a consequence of: the 3km boundary; and the nature of "Equi" costs. "Equi" costs are non-distance sensitive and should therefore be allocated equally to each percentile.

(iii) The equal distribution of "Equi" costs across percentiles is justified because they are non-distance sensitive costs. Accordingly, they should not be allocated based on the "Total" allocation key, as this is used to allocated distance sensitive costs.

Background: cost distribution using "allocation keys"

320. The sheet 'TERA_C_AM' summarises costs from the Area Model into several categories. The cost of each category is then allocated to each percentile, using a cost curve derived from the 2016 CAM (i.e., specific to each cost category). The costs of all categories, in a given percentile of lines, are then added together to derive a total network cost per percentile.

321. The "Equi" allocation key distributes costs equally over each percentile of lines, rather than allocating these costs per percentile, using a cost curve-based allocation.

322. The subsections below explain in detail TERA's responses to eir's submissions (i), (ii) and (iii) above.

eir submission (i): approach suggests the number of lines is the same in each percentile of all MDFs

323. TERA has used the "Equi" allocation key to evenly distribute the "Equi" cost category per MDF over each percentile of lines (in the sheet 'TERA_C_Cost_Alloc', from line 5328). This means that for a given MDF, each percentile of lines will bear 1% of the "Equi" costs, associated with this MDF.

324. TERA does not agree that each percentile in the Customer Model contains a different number of lines. While this comment is true in relation to the percentiles defined in the 2016 CAM to build the cost curves, this comment does not apply to the 'Equi' cost distribution as it does not rely on the CAM-based cost curves.

eir submission (ii): the approach results in a cost distribution where there is always one cost band with a very high proportion of lines, and low costs (only "Equi" costs)

325. TERA is of the view that the occurrence of a high proportion of lines being contained within a given cost band, with a low-cost level, is to be expected. This is a direct consequence of the proposed ComReg methodology, and in particular: (a) the "3km boundary" assumption; and (b) the "Equi" cost allocation. All the first percentiles of lines (i.e., those closest to MDFs, which therefore have lower associated distance sensitive costs) will bear each one 1% of "Equi" costs only (and 0% of distance sensitive costs), despite having a high proportion of lines. This is due to the fact that "Equi" cost are not distributed according to CAM-based cost curves, but instead, are non-distance sensitive and are therefore allocated equally across each percentile of lines. This will result in percentiles close to MDFs being allocated mainly Equi costs (1% of Equi costs for each percentile) and zero/low distance sensitive costs, leading to a high number of lines having a low cost per line, thus all falling within one low-cost band.

326. In eir's Customer Model (as amended by TERA), TERA did not amend the scope of the "non-Distance sensitive costs" as defined by eir in its 2015-2016 USO funding application documentation, and in particular the treatment of the "Equi" costs is based on eir's definition of "Non-Distance sensitive costs".

<u>eir submission (iii): lack of justification for allocation "Equi" costs equally across each percentile</u>

327. TERA is of the view that it remains appropriate to distribute the "Equi" cost category equally to each percentile, and notes that the "Equi" cost category corresponds to the "non-distance sensitive costs" as defined in eir's 2015-2016 USO funding application documentation as "those [costs] that will remain constant with the length of a line, such as the cost of line cards and DSLAM equipment".

328. In eir's Customer Model (as amended by TERA) in the proposed ComReg methodology, TERA did not amend the scope of the "non-Distance sensitive costs" as defined by eir in its 2015-2016 USO funding application documentation, and in particular the treatment of the "Equi" cost is based on eir's definition of "Non-Distance sensitive costs" Having further considered whether "Equi" costs should be treated as a non-distance sensitive cost, and therefore be distributed equally across each percentile, TERA is of the view that it is correct to use this approach in allocating "Equi" costs.

329. eir suggests in its submission that "Equi" costs should be allocated using the "Total" allocation key. The "Total" allocation key is calculated using the L/N methodology approach in the 2016 CAM. This reflects how the network's total distance-sensitive costs are distributed according to the length between the customer and the MDF.

330. TERA does not consider it appropriate to apply an allocation key which is distance sensitive (the "Total" allocation key) to a non-distance sensitive cost (the "Equi" costs). There is no causal relation between the "total" allocation key and the "Equi" costs.

331. ComReg has considered TERA's analysis in relation to the "Allocation key applied to the "Equi" cost category" (as set out above) and agrees with it.

Application of avoidability percentages under the adjusted approach

332. In TERA Report B, TERA responded to eir's submissions in relation to the Application of avoidability percentages under the adjusted approach as follows:

333. "TERA agrees with eir's statement that Distance sensitive OPEX was adjusted for avoidability twice in the proposed ComReg methodology. TERA disagrees with eir's suggestion that eir's initial adjustments for avoidability may not be relevant under the Proposed ComReg Methodology. However, upon completion of a review of calculations within the Customer Model (TERA Report A), TERA considers that further adjustments should be made to the "TERA_C_AM" sheet of the Customer Model. To correct the adjustment for avoidability of distance sensitive OPEX, and to reflect the further adjustments required as a result of TERA Report A, TERA is of the view that the following adjustments are required:

- Remove the preliminary avoidability adjustment for the "non-distance sensitive OPEX" category (all other preliminary avoidability adjustments remain relevant).
- Change the allocation key from "Total" to "Equi" for the following service-specific cost categories: Other_NDist, Linecard, Pair_Gain, PSTN, DSL-R, SB-WLR, UMLP Line Share, DSL-B, PP, Suppl., LL, and provisioning.

334. The following subsections, (i)-(iii): provide background to the role of cost curves in the proposed ComReg methodology; explain TERA's rationale for disagreeing with eir's suggestion that its initial adjustments for avoidable may not be relevant under the proposed ComReg methodology; and explain the further adjustments TERA has made as part of its Customer Model calculations review (Report 1).

335. To assess eir's submission to consultation, it is necessary to recap on:

(i) the purpose of cost avoidability curves;

(ii) how the cost avoidability curves are developed; and

(iii) how the cost curves are used in the proposed ComReg methodology.

(i) The purpose of cost avoidability curves

336. In the context of USO modelling, the 2016 CAM is used to provide guidance on how and where costs are allocated in eir's network, which is done by developing cost avoidability curves.

337. Thus, the purpose of cost avoidability curves is to derive avoidable costs associated to each percentile of line. In other words, it defines how distance sensitive costs vary according to customers' distribution in the network. Their cost curves serve as an input to the Customer Model and inform on how much distance sensitive avoidable cost vary when a certain increment (percentile) of lines is not served.

(ii) How the avoidability cost curves are developed

338. The avoidability cost curves are calculated by iterating the 2016 CAM several times, using different network coverage assumptions. Each iteration of the 2016 CAM considers a target coverage equal to a certain percentage of the total line base (from 1% to 100%, with a 1% coverage increase leading to 100 iterations of the model).

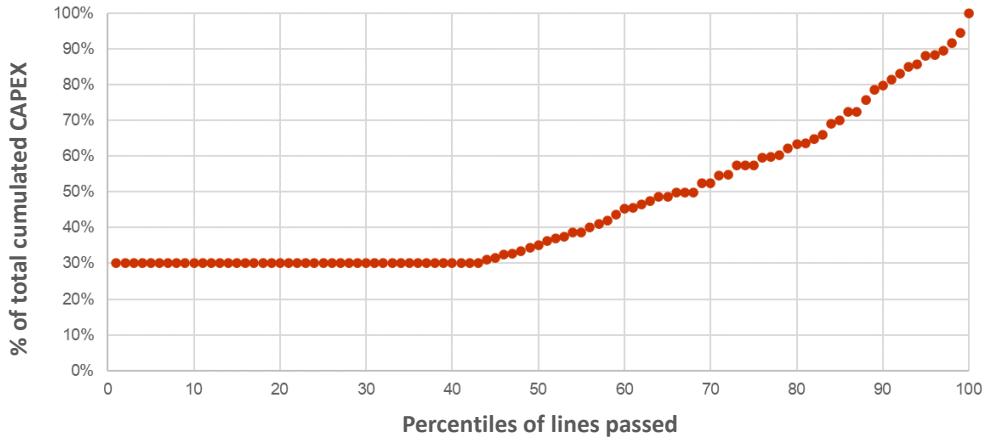
339. For each iteration of the 2016 CAM, the output is the CAPEX per MDF required to deploy a network corresponding to the target coverage input. This CAPEX output is provided both in total (i.e., CAPEX required for 100% network coverage) and for the four specific asset categories within the network (cables overhead, cables underground, poles, trenches).

340. In addition, in iterating the 2016 CAM, a 3km threshold was considered, corresponding to the line length within which all network costs are assumed to be unavoidable (as specified in the methodology). Consequently, for each iteration of the 2016 CAM, corresponding to a percentage of lines within the 3km boundary, the output of the 2016 CAM is the same, i.e., the total CAPEX of deploying a network covering all premises within a range of 3km of an MDF.

341. For each CAPEX category, these CAPEX outputs are then converted into percentages of the total CAPEX of a full coverage network. The information gathered from the 100 iterations of the 2016 CAM and is used to produce cost curves. These cost curves show the percentage of total CAPEX required to deploy a network, per cumulative percentile, of the total line base.

342. For example, Figure 22 below displays the cost curve for a given MDF derived from gathering the "total CAPEX" output of the 100 2016 CAM iterations.

Figure 22: percentage of total cumulated CAPEX per % of lines passed (Figure 3 TERA Report A)



Source: TERA Consultants

343. The avoidability cost curves used in the Customer Model estimate the avoidable CAPEX (expressed as a percentage of the full network CAPEX) for each percentile of lines, i.e., the CAPEX that would be avoided if each percentile of lines was not passed. These cost curves are calculated for each MDF based on curves as shown in Figure 22 above, as the difference between the curve values (i.e., percentages of total cumulated CAPEX) for two consecutive coverage percentages.

344. For example, if the total CAPEX required to cover 60% of the full coverage is 45% of the total "full network" CAPEX, and the total CAPEX required to cover 61% of the full coverage is 47% of the total "full network" CAPEX, the avoidable total CAPEX associated to the 61st percentile of lines is 2% of the total "full network" CAPEX.

345. A similar approach is used to build specific avoidability cost curves for overhead cables, underground cables, poles, and trenches.

346. By design, these avoidability cost curves display a 0% avoidability for all percentiles within the 3km boundary, as the Customer Model assumes that these costs are unavoidable. Overall, the sum of all values for all percentiles provides the total percentage of avoidable costs at the MDF level.

(iii) <u>How the 2016 CAM avoidability cost curves are used in the Proposed ComReg Methodology</u>

347. The 2016 CAM avoidability cost curves are applied to the annual costs of access lines, per MDF, which are extracted from the Area Model upon which the initial eir adjustments for avoidability have already been performed.

348. Consequently, eir questions the relevancy of maintaining these initial avoidability adjustments in the implementation of the proposed approach and suggests that they could lead to a double accounting for avoidability.

349. To assess this potential double adjustment for avoidability, it is necessary to consider each cost category in detail, and the reasons for the initial adjustments made by eir.

350. Table 1 below shows the different cost categories defined in the Area Model and then imported into the Customer Model.

Table 1: list of cost categories as defined in the Customer Model and the corresponding avoidability cost curve applied

Cost category	Avoidability adjustment from the Area Model[53]	Avoidability cost curve applied[54]
Cable_OH	No	Cable_OH
Cable_UG	No	Cable_UG
Poles	No	Poles
Trench_Duct	No	Trenches
Radio	No	Total
Other_NDist	0%	Total
Linecard	No	Total
Pair_Gain	62%	Total
PSTN	No	Total
DSL-R	No	Total
SB-WLR	No	Total
UMLP	No	Total
Line Share	No	Total
DSL-B	No	Total
PP	0%	Total
Suppl.	No	Total
LL	0%	Total
Provisioning	No	Total
Dist sensitive opex	74%	Total
Non-dist sensitive opex	60%	Equi

351. Based on Table 1, we discuss below the cost categories that were adjusted for avoidability.

- **Other non-distance sensitive costs ('Other_NDist')**: this category includes, for example, the cost of local exchange buildings, power, line testing equipment and other cost components which are evenly distributed over the lines connected to one MDF and are not dependent online length.

53 As used in eir's initial approach and the Proposed ComReg Methodology.
54 In the Customer Model of the Proposed ComReg Methodology.

These costs are fully unavoidable CAPEX. They are incurred at the MDF level once the first line from the MDF is connected to a premise. These costs are therefore fully unavoidable and should be excluded from the avoidable costs which the 2016 CAM adjusts for avoidability.

352. In the proposed ComReg methodology, "other non-distance sensitive costs" have been excluded (0% of this cost category was adjusted for avoidability in the Area Model) and the "total" allocation key was applied to this cost base (i.e., the avoidable cost curve based on the total network CAPEX from the 2016 CAM). The application of the "total" cost curve to Other Non-distance Sensitive Costs was an error. The "Equi" cost curve should have been applied to "other non-distance sensitive costs" instead, as these costs are non-distance sensitive. This cost base value is zero, and accordingly this error in the allocation key does not impact the calculation. If the adjustment of eir's Customer Model (as set out in ComReg Document 21/17) had not been considered, eir's Customer Model (as submitted within 2015-2016 USO funding application) applied any allocation key (i.e., the "total" allocation key or the "Equi" allocation key) which included a portion of these costs in the avoidable costs per percentile, which was in incorrect (sic).

- **Pair gain**: this category falls into service-specific CAPEX (as defined in eir's USO documentation). eir's avoidability assessment concluded that 62% of CAPEX relating to this category is avoidable at the customer level. In implementing the Proposed ComReg Methodology, TERA applied the "total" allocation key to this category. eir's USO model documentation states that these costs are non-distance sensitive. TERA therefore considers that this cost category should be adjusted for avoidability, using the "Equi" cost curve rather than the "Total" cost curve, to reflect the non-distance sensitivity of the cost category. Accordingly, it would be inappropriate to remove eir's adjustment of the cost base (within its Customer Model submitted in its 2015-2016 USO funding application), as to do so would have included some unavoidable costs in the calculated avoidable cost per percentile.

- **Payphones**: this cost category is also a service-specific CAPEX and is non-distance sensitive (as set out in eir's USO model documentation). This cost category should have been adjusted for avoidability using the "Equi" cost curve instead of the "Total" cost curve (as implemented by TERA). This does not however impact the direct net cost since this cost category does not contain any cost. TERA is of the view that the adjustment of eir's Customer Model (as set out in ComReg Document 21/17) for avoidability is remains appropriate.

- **Leased Lines:** this cost category includes Leased Lines service-specific CAPEX (Operations Support System, MARTIS, and multiplexing equipment) at the MDF level, which are also fully unavoidable costs. This cost category should also have been adjusted for avoidability using the "Equi" allocation key instead of the "Total" allocation key (as implemented by TERA in the Proposed ComReg Methodology). eir's adjustment for avoidability in its Customer Model (as submitted within its 2015-2016 USO funding application) remains relevant.

- **Distance sensitive OPEX**: this cost category includes all distance sensitive operational costs. eir's Customer Model (as submitted within its 2015-2016 USO funding application) breaks down this cost category between: (i) fully avoidable costs; (ii) partially avoidable costs; and (iii) fully unavoidable costs. In the Proposed ComReg Methodology, the "Total" allocation key was applied to fully avoidable costs only. The "Total" allocation key reflects the avoidability of all network elements, as a percentage of the Total network CAPEX. It accounts for the avoidability of both "fully" and "partially" avoidable OPEX from the total OPEX base. Accordingly, TERA considers that the cost base to which the "Total" allocation key should have been applied, in respect of Distance sensitive OPEX, is Total Distance sensitive OPEX, rather than only the fully avoidable OPEX (as implemented by TERA).

- **Non-distance sensitive OPEX**: these are non-distance sensitive operational costs. For the reasons set out above, TERA is of the view that the application of the "Equi" allocation key remains appropriate, and that the adjustment of eir's Customer Model (as set out in ComReg Document 21/17) for avoidability is remains appropriate (sic).

353. TERA notes that in addition to the Payphones, Leased Lines and Pair Gain cost categories, all other service specific CAPEX categories (which have not been adjusted for avoidability) were allocated to the percentiles of lines using the "Total" allocation key. According to eir's USO documentation, these cost categories are all non-distance sensitive and should therefore be distributed over the percentiles of lines using the "Equi" cost category."

354. ComReg has considered TERA's analysis in relation to" Application of avoidability percentages under the adjusted approach" (as set out above) and agrees with it.

<u>The cost allocation between MDF</u>

355. In TERA Report B, TERA responded to eir's submissions in relation to the cost allocation between MDF as follows:

356. "TERA acknowledges this issue raised by eir and addresses it within TERA Report A. As part of TERA's review of the Direct Net Cost calculations (Report 1), TERA deactivated the "reuse" option i.e., changed the treatment of reusable assets. Accordingly, the use of a fixed cost ratio between MDFs is no longer relevant as TERA has deactivated the "reuse" option.

357. The 2016 CAM calculates the HCA costs per network component at the national level in the 'Network roll-out over time' sheet. It then uses the distribution of costs per MDF, as per eir's 2014 accounts, to allocate these HCA costs between the MDFs.

358. When the 2016 CAM is used for the purpose of calculating cost curves to be used in the Access part of the Customer Model, the 2016 CAM is populated with 100 hundred different inventories corresponding to different coverage targets (from 1% to 100% of eir's national coverage).

359. Accordingly, every iteration of the model will rely on the same cost distribution per MDF (based on eir's 2014 accounts) for all reusable assets. TERA Report A identifies that this generates a distortion, since the costs within a given percentile will be distributed across all MDFs in the same way as the national average, as reflected by eir's 2014 accounts. Consequently, the incremental cost of serving one additional percentile of lines is distributed (for reusable assets) over all MDFs, even those which have no lines within this percentile.

360. This results in the costs of reusable assets being allocated to percentiles of all MDFs, even those percentiles which are within the 3km boundary, and should not bear any avoidable cost."

361. ComReg has considered TERA's analysis in relation to "The cost allocation between MDF" (as set out above) and agrees with it.

The Overhead (O/H) and Underground (U/G) deployment ratio

362. In TERA Report B, TERA responded to eir's submissions in relation to the Overhead (O/H) and Underground (U/G) deployment ratio as follows.

363. "TERA agrees with eir's statement that the proxy of 6 could be further refined. TERA does not consider that any further adjustment is needed to this proxy for the following reasons.

364. As clearly set out in correspondence between ComReg and eir from 2017 to 2021, the OH/UG factor was implemented by TERA in the proposed ComReg methodology as a proxy to reflect the difference in cost between underground and overhead deployment, in the absence of eir's own implementation of an appropriate methodology to enable the sole use of the 2016 CAM.

365. TERA notes that ComReg's position is that, in accordance with D04/11, the responsibility for the development of a Customer Model based on the 2016 CAM resides with the USP, eir, as part of its USO funding application.

366. TERA does not consider that the difference is sufficient to render TERA's underground factor of 6 as an unreasonable proxy. Accordingly, TERA does not consider that any further change to this proxy is required.

Empty percentage groups in the "SectionRanking.xlsx" file

367. In TERA Report B, TERA responded to eir's submissions in relation to Empty percentage groups in the "SectionRanking.xlsx" file as follows:

368. "TERA confirms that these 3 percentile groups are empty. This is a consequence of the 2016 CAM modelling approach, which estimates the cost per line at the road section level. TERA is of the view that the impact of the occurrence of empty percentiles on the net cost calculation is limited, for the reasons outlined below. Therefore, TERA does [not] consider that any further adjustment is needed.

369. In the 2016 CAM, a section is the road portion located between two consecutives intersections. Each building belongs to a section and all the lines within one section are considered to have the same cost.

370. TERA notes that the modelling approach within the 2016 CAM, involving the distribution of lines evenly across each of the 100 percentiles (i.e., the number of lines in each percentile is: the total number of lines in the MDF divided by 100, or 1% of the total lines), is a theoretical approach. However, in reality (in the physical network), there may be a road section(s) which contain more lines than one percentile-worth of lines. Where a particular section in the physical network contains more lines than 1% of the total lines in the MDF, these lines cannot be 'split' across percentiles in the theoretical model. For example, Table 2 below shows the distribution of lines in the model across percentiles 3, 4, 5, 6 and 7, for a hypothetical MDF ("*MDF a*") which contains 1000 lines and does not contain a road section with more than 10 lines (i.e., 1% of the lines in the MDF).

Table 2: Line distribution in "*MDF a*"

Percentile	3	4	5	6	7
No. of lines	10	10	10	10	10

371. Table 3 below shows the distribution of lines in the model across percentiles 3, 4, 5, 6 and 7, for a hypothetical MDF ("*MDF b*") which contains also 1000 lines but does contain a road section with more than 10 lines (i.e., 1% of the total lines in the MDF) – in this example 40 lines.

Table 3: Line distribution in "*MDF b*"

Percentile	3	4	5	6	7
No. of lines	40	0	0	0	10

372. Cost curves are derived at the road section level and the 2016 CAM modelling approach does not facilitate the line base for one road section to be split across multiple percentiles, with the result that the 40 lines within the hypothetical road section in the example in Table 3, are borne by percentile 3, leaving percentiles 4, 5 and 6 empty.

373. When the costs are distributed over the percentiles of lines of the Customer Model (in which the lines are evenly distributed across the percentiles) using cost allocation curves, the empty percentiles do not bear any avoidable cost. Instead, these avoidable costs which would have been attributed to customers within these percentiles are attributed to the next percentile that does have lines associated with it.

374. Overall, TERA is of the view that the impact of the occurrence of empty percentiles on the net cost calculation is limited for two reasons.

375. Firstly, this only occurs when a given section hosts more lines than the number of lines in one percentile of an MDF total lines. This phenomenon occurs 3,388 times. Compared to the 114,800 percentiles of all MDFs (100 hundred percentiles for all 1,148 MDFs equals 114,800), the occurrence rate is 2.95%.

376. Secondly, the estimation of uneconomic customers is based on a probabilistic approach, by comparing the distribution of customers per cost band with the distribution of customers per net revenue band. The probabilistic comparison with the net revenues will therefore partially compensate this effect. Some customers will be considered as economic where they are uneconomic, and others will be considered as uneconomic where they are economic.

377. The fact that this issue only affects 2.95% of the total number of percentiles combined with a compensation effect through the application of the probabilistic approach to estimate the net cost per customer indicates that the overall the impact of this effect is very limited.

378. TERA also notes ComReg's position that, in compliance with the decisions of D04/11 the responsibility for the development of a new Customer Model based on the 2016 CAM resides with the USP, eir, as part of its USO funding.

379. Accordingly, TERA does not consider that any further change is required given the very limited impact."

380. ComReg has considered TERA's analysis in relation to "The Overhead (O/H) and Underground (U/G) deployment ratio" (as set out above) and agrees with it.

The exclusion of certain asset classes

381. In TERA Report B, TERA responded to eir's submissions in relation to the exclusion of certain asset classes as follows:

382. "TERA disagrees with eir's statement and confirms that no asset classes have been included/excluded in the use of the 2016 CAM for the USO Net Cost calculation.

383. For the purpose of adjusting eir's Customer Model in the proposed ComReg methodology, TERA used the 2016 CAM to build five specific cost curves:

1. An 'Overhead cables' cost curve;
2. An 'Underground cables' cost curve;
3. A 'Poles' cost curve;
4. A 'Trenches' cost curve; and
5. A 'Total' cost curve.

384. In the 2016 CAM (Excel part), specific asset costs (1 to 4) are calculated in table 8 'Export USO', by adding together only those costs related to these asset categories in the 2016 CAM table 5 'Network annual cost'. More specifically:

- **Overhead cables costs** are calculated by adding together: (i) overhead cables deployed in the D-side (line 243); (ii) overhead cables deployed in the final drop (line 247); and (iii) joints deployed overhead in the D-side (line 253). TERA has not identified any other asset that can be added to better reflect overhead cables costs.
- **Underground cables costs** are calculated based on the same principle, by adding together: (i) D-side UG cables costs (line 242); (ii) E-side cables costs (line 244); (iii) Final drop UG costs (line 246); (iv) D-side UG joints (line 252); (v) E-side joints costs (line 254); and (vi) Final drop joints (255). TERA has not identified any other asset that can be added to better reflect underground cables costs.
- **Poles costs** are directly calculated based on the total sum of poles costs (line 281) from the table 5.
- **Trenches costs** are calculated by adding together: (i) the total costs of trenches (line 275); (ii) the total costs of ducts (line 269); and (iii) the total cost of chambers (line 263).

- **Total costs** are directly calculated based on the total network costs as they are calculated originally in the 2016 CAM in the lines 235:238, without any exclusion.

385. Accordingly, TERA confirms that no asset classes have been included/excluded in the use of the 2016 CAM for the USO Net Cost calculation."

386. ComReg has considered TERA's analysis in relation to the exclusion of certain asset classes (as set out above) and agrees with it.

Avoidable CAPEX as the main driver of OPEX

387. In TERA Report B, TERA responded to eir's submissions in relation to avoidable CAPEX as the main driver of OPEX as follows:

388. "The allocation principle used in the proposed ComReg methodology distinguishes between the allocation of distance sensitive costs and non-distance sensitive costs, regardless of whether they are CAPEX or OPEX:

(i) Distance sensitive costs (that cover distance sensitive CAPEX and distance sensitive OPEX) are allocated based on cost curves calculated based on the L/N methodology. (i e., using CAPEX as the driver of avoidability)

(ii) Non-distance sensitive costs (that cover non-distance sensitive OPEX and service specific costs) are allocated based on the "Equi" allocation key.

389. As the change in distance sensitive OPEX is assumed to be proportional to the line length, CAPEX rollout is used to allocate this element of the OPEX costs based on L/N methodology. However, eir's statement is that "CAPEX is the main driver of avoidability". No reference is made by TERA to the avoidability of OPEX". , eir's statement is that "CAPEX is the main driver of avoidability is not correct as non-distance sensitive OPEX is not proportional to line length and thus, it cannot be allocated based on the L/N methodology i.e., CAPEX does not drive non-distance sensitive OPEX as this is allocated based on the "Equi" allocation key, not the L/N methodology.

390. The L/N methodology (calculated based on CAPEX) is a reasonable approach to calculating the avoidability of distance sensitive costs, regardless of whether they are CAPEX or OPEX. Non-distance sensitive costs cannot be allocated based on the L/N methodology; therefore, TERA has adopted an "Equi" allocation key, distributing equally this cost category.

391. Accordingly, TERA does not consider that any further change is required."

392. ComReg has considered TERA's analysis in relation to avoidable CAPEX as the main driver of OPEX and agrees with it.

8.1.1.3 Directories Model – Respondents' submissions

393. eir and Vodafone have no observations on the Directories Model. ALTO and BT eir have a number of observations.

394. ALTO states that it "do[es] not agree with the direct net cost of directories as there appears to have been no attempt to make this positive and the supplier should also have been reviewed to ensure the costs were appropriate." and that "There is no evidence in the USO consultation that [a price review] was considered for the outsourcing of directories" and that: efforts should be made to obtain a positive return for Directories whether by a more innovative approach to directories in line with modern world such as a mobile app and other technological innovations".

395. BT states that: "…. it's not yet clear whether the solution is efficient or cost effective".

8.1.1.4 Directories Model – ComReg's response

396. ComReg reminds respondents that for the period 2015/2016 eir was required by ComReg to ensure the availability of a comprehensive printed directory or a directory of subscribers[55].

397. Decision 17 of D04/11 states: "For Directories, the net cost calculation shall use the total avoidable cost, minus total revenues of this service".

398. In response to concerns expressed by ALTO in respect of a lack of evidence of reasonable efforts to obtain a positive return, ComReg notes that in the financial year 2015-2016, directories were unprofitable and there was direct net cost of €680,000 associated with the USO Directories Model.

399. In response to ALTO's observation regarding the fixed price outsourcing of directories, ComReg and TERA carried out an assessment of the costs incurred in meeting the directories USO and engaged with eir as part of this assessment. ComReg requested, and was provided with, copies of the commercial arrangements pertaining to eir's outsourcing and reviewed these to ensure that the appropriate costs were included in the USO Directory Model.

8.1.1.5 Payphones Model – Respondents' submissions

400. Vodafone makes no observations on the Payphone Model.

401. ALTO, BT and eir make a number of observations.

[55] "Provision of Directory of Subscribers, Universal Service: Scope and Designation" D07/14, Document No.14/68 (designation period 7 July 2014 until 30 June 2018.)

402. ALTO states that" If eir were to make a commercial decision to stop removing uneconomic payphones then we consider that would be a commercial decision of eir and at its own cost… eir should not be compensated for inefficient decisions or inefficiently incurred costs" (emphasis added).

403. BT agrees with ComReg's approach regarding payphones stating that: "We therefore agree with the net amount [in respect of payphones] ComReg has determined rather than the eir claim level as eir had the opportunity to avoid most of the costs."

404. eir states that it acknowledges "… the need to avoid double counting with the intangible benefit calculation", with regard to TERA's inclusion of advertising revenue in the model.

405. eir disagrees with TERA's adjustment to the Payphones Model stating that "the criteria set out in the 'removals policy' do not allow for the efficient management of the payphone base [and]… cannot reasonably be used as an instrument to remove existing payphones from the net cost calculation". The 'removals policy" (i.e., process for the removal of payphones) referenced and the basis for the adjustment is ComReg Decision D08/14[56].

406. eir also states that its costs associated with maintaining payphones in locations where demand is too modest to cover the costs of service provision "could have been avoided had eir not had the obligation and hence should be treated as such in the net cost calculation…" and asserts that this treatment is consistent with D04/11.

407. eir concludes as follows "eir disagrees that a downward adjustment should be considered to reflect an efficient and appropriate number of payphones. It is unwarranted that ComReg should deny funding for economic payphones which are in place solely because of ComReg's removals policy, which precludes the economically efficient discharge of the public payphone obligation".

8.1.1.6 Payphones Model – ComReg's response

408. Decision 16 of D04/11 provides that "in respect of mandatory public payphone provision, the net cost calculation shall be based on the total avoidable cost, minus the total revenues foregone." It is clear therefore that it is only the direct net cost of mandatory public payphone provision that is relevant to the assessment of the USO funding application.

[56]"Provision of Public Payphones Universal Service: Scope and Designation", ComReg Decision D08/14, ComReg 14/69, dated 7 July 2014 ("D08/14")

409. Decision 16 of D04/11 also provides that "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)."

410. D08/14 sets out (1) the 'reasonable needs of end-users' (based on usage threshold) and (2) the public payphone permissible removals criteria.

411. ComReg instructed TERA to analyse the number of USO public payphones within the 2015-2016 Payphone Model, based on the permissible removals criteria in ComReg Decision D08/14. Arising from this analysis TERA determined that [✂ ■ ✂] public payphones (in addition to [✂ ■ ✂] disallowed by TERA in eir's 2014-2015 USO funding application) should be disallowed from the 2014/15 Payphone Model. This resulted in a downward adjustment of the Payphone Model direct net cost to €22,929.

412. ComReg's approach to the Payphone Model is in accordance with Decision 16 of D04/11 and D08/14.

8.1.1.7 Disabled End-Users Services Model – Respondents' submissions

413. ALTO, eir and Vodafone made no observations on the Disabled End-Users Services Model.

414. BT states that it agrees with ComReg's decision regarding the Disabled End-User's Services Model.

8.1.1.8 Disabled End-users Services Model – ComReg's response

415. ComReg notes BT's agreement with ComReg's decision regarding the Disabled End-Users Services model.

8.1.2 Consultancy costs – Respondents' submissions

416. ComReg asked in question two whether respondents had any observations on ComReg's preliminary view that consultancy costs (also referred to as "consultancy fees") incurred in respect of a USO funding application do not form part of the net cost of the universal service.

417. All four respondents (ALTO, BT, eir and Vodafone) responded to this question.

418. ALTO, BT, and Vodafone agree with ComReg's preliminary view on consultancy costs.

419. ALTO states that it "agrees with ComReg's preliminary views and findings" and "supports the view that having regard to the Universal Service Directive, the Universal Service Regulations and Decision 2 of D04/11, that consultants fees incurred by eir should be disallowed from the net cost as they relate to the preparation and submission of the USO application and not to the provision of USO services."

420. BT states "We agree with the ComReg analysis that it was called out clearly in the legislation and the Decision D04/11 that USO provision is not made for claiming consultant costs for making a claim. Notwithstanding our view it's not clear why the consultant's costs are so high for a process that is repeated annually".

421. eir states that it does not agree with ComReg's preliminary view that consultancy fees are not net costs of the universal service and should be excluded from the direct net cost and is of the view that this is "an unacceptably narrow interpretation of the applicable regulatory framework and therefore any decision to exclude these costs is flawed".

422. Eir expresses the view that the consultancy fees claimed were "incurred solely for the purpose of meeting the requirements of ComReg D04/11" and "recovery of these costs is permitted by the Regulations as these are costs that would have been avoided in their entirety had there been no USO."

423. eir submits that its view is supported by international precedent, submitting that in France the funding of the net cost is done through a sharing mechanism which includes the costs of managing the fund itself and in Italy, where no sharing mechanism was necessary, the verification costs of the regulator were shared between the operators.

424. Vodafone agrees that "…the decision to make a funding request is a commercial decision by Eircom and should be disallowed".

8.1.3 Consultancy costs – ComReg's response

425. ComReg is of the view that consultancy costs incurred in respect of USO funding applications are not a cost of any Universal Service provision within the meaning of Regulation 11 of the Universal Service Regulations. The Universal Service Regulations and D04/11 do not make provision for claiming consultancy fees associated with making a USO funding application.

426. eir's 2015-16 USO funding application included a figure for consultancy costs with no further breakdown, explanation, or justification of these costs, other than the following statement in the application: "Its preparation has required the involvement of a professional consultancy body (Frontier Economics), and two AUP teams (for AUPs and systems assurance)".

427. With respect to the specific costs that may be claimed by a USP as a consequence of providing USO services, Decision 2 of D04/11 states that: "It is only the portion of costs, both capital and operational expenditure for the given financial year that can be directly attributed to the USP 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".

428. Decision 2 of D04/11, in ComReg's view, reflects the wording of Article 12 (Costing of universal service obligations) of the Universal Service Directive and Regulation 11 of the Universal Services Regulation. Specifically, Article 12(1) of the Universal Services Directive identifies the object of the net cost calculation as follows: "(1). Where national regulatory authorities consider that the provision of universal service as set out in Articles 3 to 10 may represent an unfair burden on undertakings designated to provide universal service, they shall calculate the net costs of its provision."[57](emphasis added).

429. Having regard to D04/11, the wording of the Universal Service Directive and the Universal Service Regulations, ComReg is of the view that consultancy fees relate to the preparation and submission of a USO funding application, which are not directly incurred as a result of the provision of USO services, do not form part of the net cost of the universal service.

430. For the reasons outlined above, in Chapter 6 of this document and in Consultation 21/17, ComReg has decided that the consultancy fees claimed by eir in its 2015-2016 USO funding application are to be excluded from the calculation of the net cost.

8.1.4 Net cost – Respondents' submissions

431. ComReg asked in question three whether respondents had any observations on ComReg's preliminary view that the positive net cost for 2015-2016 is €6,701,390.

432. All four respondents (ALTO, BT, eir and Vodafone) responded to this question.

433. ALTO indicates that it "agrees with ComReg's assessments arising from Sections 5 and 7 of each Consultation paper" and then re-iterates its observations made in its responses to consultations relating to previous funding applications [58].

[57] Article 12 (1) of the Universal Service Directive is transposed by Regulation 11 (1) of the Universal Services Regulations, which states "Where an undertaking designated as having an obligation under Regulation 3, 4, 5, 6, 8 or 9 seeks to receive funding for the net costs of meeting the obligation concerned, it may submit to the Regulator a written request for such funding."

[58] Assessment of eir's 2010-2011;2011-2012;2012-2013; 2013-2014 and 2014-2015 Universal Service Fund Applications Refs: 17/73;/17/81;17/95;17/109;18/36.

434. BT states that: "...we are struggling to understand why the lines costs are not following market changes and why eir cost savings are not coming through in the assessment."

435. eir states that: "We do not agree with ComReg's preliminary view that the direct net cost for 2015/16 is €6,701,3980." and that "ComReg's new methodology is inconsistent with a number of key requirements of ComReg D04/11 including Decision 12, Decision 13 and Decision 15. …. ComReg's new methodology proposal is ultra vires to the requirements which allows for such a proposal pursuant to ComReg Decision 15 of ComReg D04/11" and "In terms of life-cycle benefit calculation we agree with the correction made by Oxera. We also agree with the consistent adjustment made for marketing benefits".

8.1.5 Net cost – ComReg's response

436. ComReg has set out its position in respect of the direct net cost and Decision 15 in Chapter 5.

437. Having reviewed the submissions to Consultation 21/17, ComReg asked TERA to review eir's Customer Model (as amended by TERA) in light of certain aspects of eir's submission and carry out a detailed review of all the calculations in eir's Customer Model (as amended by TERA). Arising out of this review, ComReg proceeded to further consult in Further Consultation 23/11.

8.2 Further Consultation 23/11

438. In Further Consultation 23/11 ComReg consulted on its further calculation adjustments to eir's Customer Model (as amended by TERA) i.e., on the Adjusted Customer Model.

439. There were two respondents (ALTO, and eir) to Further Consultation 23/11.

8.2.1 ComReg's proposed Customer Model calculation adjustment - Respondents' submissions

440. In question one of Further Consultation 23/11 ComReg sought respondents' observations in relation to ComReg's proposed calculation adjustment to the Customer Model element of the direct net cost calculation.

441. Both ALTO and eir responded to question one.

442. ALTO states that: "Having carefully reviewed the position in the updated TERA Report A and the Consultation paper, ALTO agrees generally with ComReg's proposed calculation adjustment to the Customer Model element of the direct net cost calculation".

443. eir states that:

"eir has reviewed the description in the consultation (not the model itself) of the modelling changes to customer model and is satisfied based on this review that ComReg and its consultant have made adjustments that correct errors of the previous approach. However, despite these corrections, eir remains concerned about the approach taken. ComReg has not provided any sensitivity analysis, nor rigorously compared the results to previous years or actual network build, as required by ComReg D04/11. In previous submissions, eir has provided real-life comparisons that have substantiated the accepted net cost claims. Additionally, while PwC has performed procedures to verify eir's net cost calculation, no such procedures have been conducted on ComReg's adjusted customer model.

Further, ComReg has not provided sufficient justification for dismissing eir's approach. ComReg has simply assumed its consultant's approach is better or more accurate without adequate justification, despite having accepted eir's previous results in previous years using a methodology that is not too dissimilar to that employed in its 2015/16 funding application.

While eir acknowledge that ComReg's approach uses more up-to-date and detailed costing information, the limited difference between the ComReg output and eir's original submission suggests that ComReg's new analysis acts as a supplement to eir's methodology rather than a replacement. In fact, given the relatively minor difference in outcome ComReg's corrected analysis appears to support the original outcome of eir's analysis.

eir notes that there is no principle in ComReg D04/11 that allows for the unilateral substitution of methodology based on alleged "better" outcomes. The requirement in Decision 15 is that 'material discrepancies' must first be identified based on carrying out reality "sense" checks, before any 'proportionate adjustment' can be proposed. Further, ComReg fail to demonstrate how their proposed approach is consistent with their own requirements outlined in D04/11. ComReg cannot reasonably propose an alternative calculation without also clearly setting out how it is compliant with its own requirements, this despite the responsibility for development of the customer model resides with eir. Given that the responsibility resides with eir, it is not clear on what basis, ComReg is entitled to unilaterally substitute its assessment for eir's."

8.3 ComReg proposed Customer Model calculation adjustment – ComReg's response

444. ComReg's approach is not as alleged by eir, a "unilateral substitution of methodology based on alleged better outcomes". The reason for the changes has been extensively set out in this document, in particular in Chapter 5. The changes made were not in order to facilitate a "better outcome", the methodology had to change to facilitate the use of the 2016 CAM as the mixed use of the 2009 and 2016 CAM proposed by eir was incorrect and created inconsistencies.

445. Earlier in this chapter ComReg outlined why its approach is consistent with D04/11 and the regulatory framework.

8.4 ComReg preliminary view of positive net cost – Respondents' submissions

446. In question two of Further Consultation 23/11 ComReg sought respondents' observations on the positive net cost for eir's 2015/16 Universal Service funding application of €11,530,321 (based on ComReg's assessment, detailed in Chapters 3 and 4 of Further Consultation 23/11).

447. Both ALTO and eir responded to question two.

448. ALTO states that: "ALTO agrees with ComReg's assessment detailed in chapters 3 and 4. We do not have any further observations on ComReg's preliminary view that the positive net cost for eir's 2015/16 Universal Service funding application is €11,530,321".

449. eir states that:

"eir acknowledge that changes made by ComReg and its consultant to the customer model to address the comments of eir. While areas of disagreement remain, eir can accept the changes made, see response to question 1.

In terms of the other elements of the direct net cost calculation, eir note that ComReg has made downward adjustments to the net cost of consultancy fees and public payphones. eir continues to disagree with these adjustments, as set out in eir's response to ComReg 21/17 and summarised below."

450. eir disagrees with ComReg's adjustment to both Consultancy fees and the Payphone Model.

8.5 ComReg preliminary view of positive net cost – ComReg's response

451. ComReg welcomes eir's acceptance of the changes made. ComReg's position in relation to the areas of disagreement in respect of net cost referenced by eir have been addressed in Chapter 5 of this document.

452. ComReg has addressed eir's observations in respect of consultancy fees and payphones earlier in this chapter of this document.

9 Net Cost

453. The total direct net cost of the Adjusted Customer Model (i.e., uneconomic customers in economic areas) has been calculated at €11,118,560 (as compared to the figure of €11,970,982 claimed by eir in its 2015-2016 USO funding application). ComReg has decided that a downward adjustment of €852,422 to eir's Customer Model (as amended by TERA) is required.

454. All other elements of the direct net cost assessment, and the intangible benefits as set out in Consultation 21/17 remain unchanged.

455. The total net cost (after intangible benefits) has been calculated at €11,530,321 (as compared to the figure of €12,861,430 claimed by eir in its 2015-2016 USO funding application). ComReg has decided that a downward adjustment of €1,573,157 to the net cost of eir's 2015-2016 USO funding application, as submitted to ComReg, is required.

10 Regulatory impact assessment (RIA)

456. A RIA is a structured approach to the development of policy and analyses the impact of regulatory options on different stakeholders. ComReg's approach to RIA is set out in the Guidelines published in August 2007.[59] In conducting the RIA, ComReg take account of the RIA Guidelines[60] issued by the Department of An Taoiseach in June 2009 and adopted under the government's Better Regulation programme.

457. Section 13(1) of the Communications Regulation Act 2002, as amended, requires ComReg to comply with certain Ministerial Policy Directions. Policy Direction 6 of February 2003 requires that before deciding to impose regulatory obligations on undertakings ComReg must conduct a RIA in accordance with European and International best practice, and otherwise in accordance with measures that may be adopted under the Government's Better Regulation programme. In conducting the RIA, ComReg also has regard to the fact that regulation by way of issuing decisions, for example imposing obligations or specifying requirements, can be quite different to regulation that arises by the enactment of primary or secondary legislation

458. ComReg's published RIA Guidelines, in accordance with a policy direction to ComReg, state that ComReg will conduct a RIA in any process that may result in the imposition of a regulatory obligation, or the amendment of an existing obligation to a significant degree or which may otherwise significantly impact on any relevant market or any stakeholders or consumers. However, these guidelines also note that in certain instances it may not be appropriate to conduct a RIA and, in particular, that a RIA is only considered mandatory or necessary in advance of a decision that could result in the imposition of an actual regulatory measure or obligation, and that where ComReg is merely charged with implementing a statutory obligation then it will assess each case individually and will determine whether a RIA is necessary and justified.

459. ComReg considers in making this determination that it is not exercising its discretion by imposing a discretionary regulatory obligation that would require a regulatory impact assessment (RIA) but is acting under a statutory obligation imposed on it by Regulation 11 of the Universal Service Regulations, which requires that upon receipt of an application for funding from the USP, ComReg shall determine whether a positive net cost has been incurred As such, if an application for funding has been received, ComReg has no discretion as to whether or not such an assessment is undertaken. Therefore, a RIA is not being undertaken for this determination.

[59] ComReg Document 07/56 & 07/56a.
[60] RIA Guidelines - Department of Taoiseach.

11 Determination

1. Statutory Powers

1.1. This Determination is hereby issued by the Commission for Communications Regulation ("ComReg"):

i. Pursuant to Regulation 11 of the European Communities (Electronic Communications Networks and Services) (Universal Service and end users' rights) Regulations 2011 ("the Regulations").

ii. Pursuant to the principles and methodologies set out in ComReg Document, D04/11 "Report on Consultation and Decision on the Costing of Universal Service Obligations Principles and Methodologies" dated 31 May 2011;

iii. Having regard to the submissions received and set out in ComReg Document No. 21/17s, No. 23/11s and No. 23/84;

iv. Having regard to the analysis and reasoning set out in ComReg Document No. 21/17, No. 23/11, and No. 23/84;

v. Having regard to ComReg's functions and objectives under sections 10 and 12 respectively of the Communications Regulation Act 2002, as amended;

vi. Having, where relevant, complied with Policy Directions made by the Minister.

2. Determination

2.1. Following the assessment of the funding application received from Eircom Limited ("eir") pursuant to Regulation 11(1) of the Regulations on 31 March 2017, in relation to the net cost of meeting its universal service obligations in the financial year 2015-2016, as accompanied by supporting information in compliance with Regulations 11(2) and 11(5) of the Regulations, ComReg has determined, in accordance with Regulations 11(3) and 11(4) of the Regulations, that there was a positive net cost comprised of the following figures:

USO Net Cost 2015-2016		ComReg €
Direct net cost (a)	Uneconomic Areas	€ 444,959
	Uneconomic Customers	€ 11,118,560
	Directories	€ 680,000
	Payphones	€ 22,929
	Services for Disabled End Users	€ 16,336
	Direct net cost	€ 12,282,784
Intangible benefits (b)	Enhanced brand recognition	€ 739,171
	Life-cycle	€ 0
	Ubiquity	€ 11,600
	Marketing	€ 1,692
	Total intangible benefits	€ 752,463
Net cost (after intangible benefits) / Positive net cost		**€ 11,530,321**

Annex 1 – Summary of engagement between ComReg and eir re. eir's 2015-2016 USO funding application

460. On 21 March 2017, in advance of eir submitting its 2015-2016 USO funding application, ComReg requested that for all future funding applications (to include eir's 2015-2016 USO funding application) eir would use the 2016 CAM to prepare its funding applications. Prior to this, eir's funding applications had been prepared using the 2009 CAM, however the 2016 CAM uses more precise geographical data than the 2009 CAM and facilitates more accurate cost allocation. In correspondence with eir[61] ComReg shared a preliminary methodology to demonstrate how the 2016 CAM could be used by eir for the calculation of the Customer Model (the "preliminary TERA methodology"). eir stated that it had insufficient time to amend its application to reflect the sole use of the 2016 CAM prior to the submission deadline.

461. On 31 March 2017 eir submitted its 2015-2016 USO funding application, which applied both the 2009 CAM and 2016 CAM to the calculation of the Customer Model. The accompanying 2015-2016 USO funding application overview document:

1) explicitly referenced ComReg's proposed change to the methodology (i.e., the preliminary TERA methodology) and stated that, "with ComReg's prior agreement, this change had not been made, as part of this application.;" and

2) stated that, following ComReg's review of eir's application, if "modifications were required eir would submit a revised application within a timeline to be agreed with ComReg"[62].

462. eir's 2015-2016 USO funding application uses both the 2009 CAM and 2016 CAM to assess the cost avoidability and cost allocation assumptions used in the calculation of the Customer Model, in particular:

- eir uses the 2009 CAM to calculate the level of cost avoidability of CAPEX within 'isolated areas' (based on the financial year 2013-2014); and

- eir uses the 2016 CAM cost allocation assumptions (based on the financial year 2015-2016) stating that "urban areas" (2016 CAM) are a good proxy of "housing areas" (2009 CAM); and that "rural areas" (2016 CAM) are a good proxy of "isolated areas" (2009 CAM).

463. The 2009 CAM identifies and classifies discrete geographic areas as either "housing areas" or "isolated housing areas". The 2016 CAM (which uses more granular geographical data) identifies and classifies discrete geographical areas

[61] Letter from ComReg to eir dated 21 March 2017.
[62] eir [✂ "[redacted] ✂].

as either "urban areas" or "rural areas".

464. Based on these assumptions, eir uses the 2016 CAM to produce the cost avoidability inputs to:

- the border of the 'housing area, and:
- the split of costs (CAPEX) between 'housing areas' and 'isolated areas.'

465. The discrete geographic "housing areas" identified in the 2009 CAM are not the same as, equal to, or directly substitutable with the discrete geographic "urban areas" identified in the 2016 CAM. Similarly, the discrete geographic "isolated areas" identified in the 2009 CAM are not the same as, equal to, or directly substitutable with the discrete geographic "rural areas" identified the 2016 CAM ComReg and TERA are therefore of the view that eir's mixed use of the 2009 CAM and the 2016 CAM in this manner is incorrect as it creates an inconsistency in the cost avoidability and cost allocation assumptions used in the USO models, which affects the accuracy of the net cost calculation in eir's 2015-2016 USO funding application.

466. As it uses more precise geographical data than the 2009 CAM and facilitates more accurate cost allocation, ComReg is of the view that 2016 CAM is the appropriate CAM to be used in eir's 2015 2016 USO funding application.

467. Between January and March 2018, ComReg and eir had several clarification meetings in relation to eir's 2015-2016 USO funding application and eir's 2016-2017 USO funding application which was due to be submitted by 31 July 2018. While a number of items were discussed at these meetings the main discussions related to eir's mixed use of the 2009 CAM and the 2016 CAM, and the preliminary TERA methodology which ComReg had originally shared with eir in March 2017. ComReg understood[63] that eir agreed that the approach that was to be agreed upon for the 2016-2017 funding application would also be applied to the 2015-2016 USO funding application, which eir would then resubmit to ComReg not later than 31 August 2018.

468. On 30 January 2018 ComReg and eir, with their respective advisors TERA and

[63] eir correspondence to ComReg (6/12/2017) [✂ ✂]

Frontier Economics, discussed the need for a new methodology for calculating the allocation of avoidable costs within the Customer Model, which would involve a full assessment of those exchange areas eir claimed were uneconomic or included uneconomic customers. TERA presented the preliminary TERA methodology which provided an outline as to the manner in which the 2016 CAM could be applied by eir to the Customer Model of eir's 2015-2016 USO funding application.

469. On 9 February 2018 eir informed ComReg that it required 11 weeks to model the avoidable costs in the Customer Model for its 2016-2017 USO funding application, using a new (undefined) methodology. On 7 March 2018 ComReg asked eir to present its early view of its methodology and associated rationale before proceeding with the production and testing of data.

470. On 23 March 2018 eir presented to ComReg and TERA its proposed avoidable costs modelling principles and methodologies in respect of the Customer Model[64] which would apply to both its 2016-2017 USO funding application and its re-submission of its 2015-2016 USO funding application. eir stated that the preliminary TERA methodology was a valid starting point but pointed to some areas for development. eir said that it had used the preliminary TERA methodology as the basis for its proposal but had aimed to build on the areas it had identified as requiring further development. At the conclusion of this meeting eir advised ComReg that it would not be engaging further with ComReg in respect of its proposed approach prior to submission of its 2016-2017 USO funding application and, following this, eir did not engage further.

471. On 24 April 2018 ComReg informed eir that it would not be in a position to confirm its agreement to eir's proposed methodology on the basis of the presentation made at the meeting of 23 March, in circumstances where ComReg had raised a number of questions and sought certain clarifications at the meeting.[65] ComReg expressed its view that the preliminary TERA methodology, with some additional adjustments (details of which were provided), was the most appropriate and accurate methodological approach to the calculation of cost avoidability. ComReg informed eir that any methodology it implemented may not be fit for purpose.

472. No subsequent applications for funding were received from eir and eir did not resubmit its 2015-2016 USO funding application. Therefore, in order to progress the assessment of eir's 2015-2016 USO funding application, which requires ComReg to verify eir's net cost calculation, ComReg instructed TERA to

[64] eir presentation "USO funding claims proposed methodology for calculating cost avoidability in the Customer Model" 23/3/2018.
[65] ComReg email to eir 24 April 2018.

propose a methodology (the "Proposed ComReg Methodology") based on the sole use of the 2016 CAM, that could be used to apply a proportionate adjustment to the calculation of the cost avoidability in the Customer Model of eir's 2015-2016 USO funding application.

473. The Proposed ComReg Methodology used to apply a proportionate adjustment to the calculation of the net cost (pre-intangibles) is set out in detail in section 7 of the TERA Report.

474. In developing the methodology, ComReg instructed TERA to take into account the areas of development that eir had identified in respect of the preliminary TERA methodology. It did so by:

- using a factor of 6 to distinguish between underground and overhead network; and
- using 3km as the boundary to differentiate between isolated areas and "higher density"/more built-up areas.

475. The Proposed ComReg Methodology identifies "urban/high density areas" using the "distance from the exchange" (boundary) methodology, where the boundary is defined as 3km from the exchange. This is consistent with a proxy boundary approach which has been used previously by ComReg for similar wholesale access products and component products.[66] The Proposed ComReg Methodology then applies a refined L/N methodology for access lines beyond 3km.

476. On 24 December 2019 ComReg wrote to eir outlining its position on the mixed use of the 2009 CAM and the 2016 CAM in eir's 2015-2016 USO funding application. ComReg informed eir that it proposed to apply the Proposed ComReg Methodology and outlined that this would result in a proposed downwards adjustment to eir's 2015-2016 Customer Model in the amount of €5,681,354.

477. ComReg invited eir to review the Proposed ComReg Methodology and the proposed adjustment to eir's 2015-2016 USO funding application and to revert with any comments by no later than 13 January 2020.

478. On 2 January 2020 eir wrote to ComReg requesting access to the detailed Customer Model calculations. ComReg provided this access on 1 May 2020, without prejudice to its position that eir already had sufficient information to allow

[66] For example, in developing wholesale broadband pricing models where VDSL specific local loop unbundling (LLU) and sub-loop unbundling (SLU) cost inputs have been defined, where the maximum line length is now set at 1.5 km for SLU (from 2.5km) and for 3kms for LLU (from 5km) (ComReg Decision D11/18).

it to review the proposed adjustment.

479. On 5 June 2020 eir wrote to ComReg ("eir's submissions") stating that it did not agree with ComReg's proposed methodology and that eir's calculation of uneconomic customers has been accepted by ComReg in previous applications and in eir's view it continues to be appropriate and consistent with ComReg D04/11. In summary eir's submissions stated, amongst other things, that ComReg's proposed methodology:

- is not supported by the requirements of D04/11 (specifically Decisions 12; 14; 15 and 25);
- is a "crude and unbalanced… one-size fits all approach"[67]; and
- lacks transparency as the documentation provided by ComReg does not show how the implementation of 3km boundary has impacted the cost curves; and accordingly, does not allow eir to check the effect of the proposed changes on the cost curves).

480. ComReg and its adviser TERA reviewed eir's comments and, having done so, remained of the view that the proposed adjustment was appropriate and necessary. ComReg responded to eir's comments by letter dated 8 March 2021 and advised that it would proceed to publish its consultation in respect of the 2015-2016 USO funding application, in which it would apply the proposed adjustment.

[67] eir state that "there are many ([✂ [redacted] ✂]) premises served by "Rural Network" within 3 km of the MDF and excluding these will exclude costly customers that are in fact uneconomic. That there are almost [✂ [redacted] ✂] premises served by "Urban Network" outside the 3km limit from the MDF but the inclusion of these generally occurs in exchanges where the bulk of the network is urban with low unit costs per premise served".

Annex 2 - TERA Report - "Assessment of eir's USO funding application – direct net cost 2015-2016 – 23/84b

Annex 3 – TERA Report A - "Assessment of eir's USO funding application – direct net cost 2015-2016: further calculation adjustments to eir's Customer Model (as amended by TERA)" 23/11a

Annex 4 - TERA Report B - "Assessment of eir's USO net cost calculation for the financial year 2015/2016, Report 2, Response to eir's response to consultation" – 23/84a

Annex 5 - Oxera Intangible Benefits Report - "Assessment of eir's calculation of intangible benefits for 2015-2016" – 21/17b