An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation

Response to Consultation and Decision

Access to Non-geographic numbers: Imposition of price control and transparency obligations

Response to Consultation and Decision

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Executive Summary

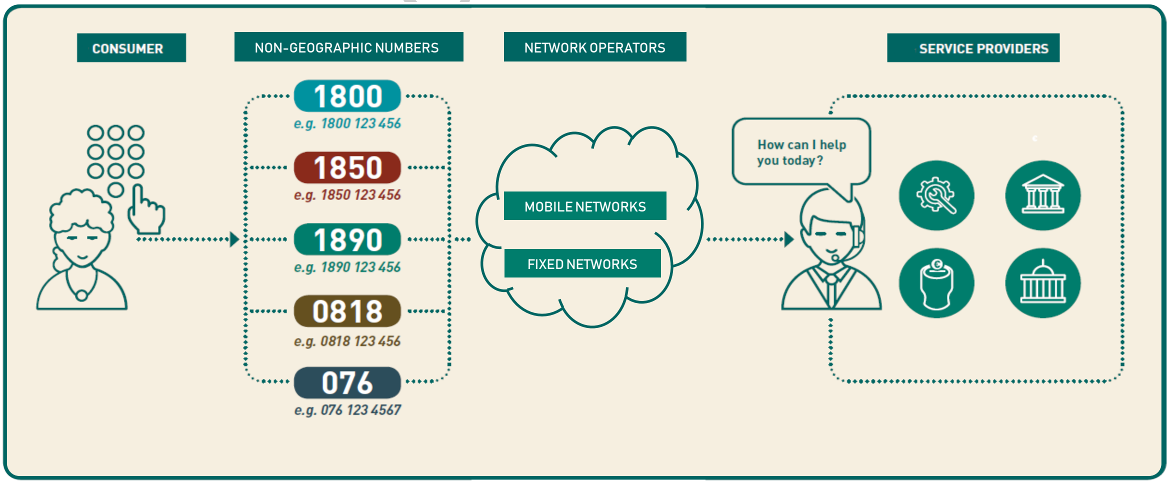
1.1 Background

1.1 The Commission for Communications Regulation (**“ComReg”**) is responsible for regulating the electronic communications sector in the State, in accordance with European Union (**“EU”**) and Irish law. As part of ComReg’s functions in relation to access and interconnection to promote efficiency, ensure sustainable competition, and give the maximum benefit to end-users, ComReg has conducted a review of certain telephone numbers known as the Non-geographic Numbers (**“NGNs”**).

1.2 NGNs are telephone numbers that are not linked to a specific geographic location. This contrasts with Geographic numbers on the fixed network where the number’s prefix indicates a particular location. Consumers use these numbers to call Service Providers (“SP”) such as businesses, Government agencies or charities to, for example, get information, make a payment or avail of socially important services, such as access to welfare services, or access voice services. Figure 1 below shows a simplified diagram of a call to the different types of NGN.

1.3 The five classes of NGNs considered in ComReg’s review are those that begin with the prefixes ‘1800’; ‘1850’; ‘1890’; ‘0818’; and ‘076’.

Figure 1: Calls NGNs



1.4 Economic research and consumer and organisational surveys conducted by or on behalf of ComReg showed a lack of understanding by consumers of NGN pricing, and that SPs were reluctant to use NGNs due to their high cost. This indicated that the NGN platform was not working efficiently or in the best interests of end-users. In particular, the lack of clarity of the prices of NGNs, and the high costs for SPs meant that current access and interconnection arrangements for NGNs were not allowing effective access and use of services through NGNs to end-users, and instead acted as obstacles to the provision of those services. ComReg found that regulatory intervention was required at both the retail and the wholesale levels of the NGN value chain.

1.5 The intervention at the retail level is concerned with the end-user-to-operator aspects of how calls to NGNs are sold[1]. ComReg found that consumers had difficulty understanding the different charges that applied to the different classes of NGN. To address this, ComReg decided in the NGN Decision[2] to limit NGNs from 1 January 2022 to two number ranges – 1800 for Freephone and 0818 for all others (this is referred to as **"NGN Consolidation"**[3]) and to cap the charge for 0818 callers at the price of a Geographic number (this is known as the **"Geo-linking Condition"**[4]).

1.6 This document (referred to as the "**Decision"**) addresses the operator-to-operator (or wholesale) aspects of the provision of NGNs. The Decision was preceded by the consultation document (ComReg Document No. 19/46) published on 22 May 2019 (**"the Consultation"**[5]). In reaching the Decision, ComReg has considered the submissions from interested parties to the Consultation (the **"Submissions"**).

1.7 NGN calls involve complex wholesale charging relationships between the end-user's originating operator, whether fixed or mobile, the transit operator (if any), which may deliver a call from the originating network to the terminating network, and the terminating operator (**"TO"**), which connects to the SP. Originating operators (**"OOs"**) may charge Wholesale Origination Rates (**"WORs"**) to the transit operator, and the TO charges a wholesale termination rate to connect the caller to the SP.

1.8 ComReg found that there was significant harm arising from wholesale charges for calls to NGNs set by originating operators holding bottleneck control over access to their customers, and that mobile WORs for NGNs in particular were of an order of magnitude higher than those charged by fixed operators.

1.9 ComReg found that excessive WORs set by OOs for calls to 1800, 1890 and 1850 NGNs led to high costs being incurred by the SPs that offer services on these NGNs

[1] Calls to 1800 NGNs are free for the caller, the SP pays any call charges. For calls to 1850, 1890, 0818 and 076 the caller pays some or all of the call charges.

[2] ComReg Document No 18/106 (D15/18) - "Review of Non-Geographic Numbers - Response to Consultation 18/65 and Decision".

[3] This means that the 1850, 1890 and 076 ranges will be withdrawn.

[4] From 1 December 2019, the retail tariff for a call to any of the four ranges 1850, 1890, 0818, and 076 shall not exceed the retail tariff for a call made by the same end-user for a national call made to a Geographic number. The Geo-Linking Condition applies from 1 December 2019 to these four NGNs and once the 1850, 1890, and 076 ranges are withdrawn it will continue to apply to the remaining 0818 range.

[5] Published on 22 May 2019 with a Draft Decision in ComReg Document 19/46 entitled "Access to Non-Geographic Numbers: Imposition of price control and transparency obligations"

and that high WORs made the NGN platform less effective from the point of view of facilitating SPs connecting to callers and constituted an obstacle to access to and use of NGNs.

1.10 ComReg considers that it is necessary to intervene to adopt a price control obligation (and supporting transparency obligation) to remove the potential for excessive WORs which ComReg considers constitute a barrier to effective end-to-end connectivity that, in turn, create a non-technical obstacle to end-users from being able to access NGNs and related services.

1.11 ComReg has decided that it should address the identified harm and intervene under its powers contained in Regulation 6 of the Access Regulations[6] (which relates to access and interconnection) and Regulation 23 of the Universal Service Regulations[7] (which relates to end-user access to numbers and services) and to impose wholesale obligations under Regulation 8 of the Access Regulations by way of Regulation 9 (transparency) and 13 (price control) of the Access Regulations.

1.12 In ComReg Document 18/65, published on 11 July 2018 (referred to **"the 2018 NGN Consultation"**), ComReg had considered the options available under the regulatory framework for the regulation of wholesale charges. In particular ComReg had proposed to impose a price control on wholesale charges set by originating operators. The Consultation expanded on those proposals and preliminary conclusions, taking into account the submissions received in response to the 2018 NGN Consultation.

1.2 Price control and transparency obligations

1.13 In making its final decision as regards the appropriate form of intervention and price control, ComReg has taken into account the characteristics of the NGNs concerned, whether or not they will remain available after 2021, and the least intrusive form of price control which will ensure that there are no obstacles to end-to-end connectivity and effective access and use of the NGN platform. ComReg's decisions are set out in sub-sections 1.2.1 to 1.2.3 below.

[6] European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011), as may be amended from time to time or replaced with equivalent effect. **("the Access Regulations**").

[7] European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (S.I. No. 337 of 2011), as may be amended from time to time or replaced with equivalent effect. (**"the Universal Service Regulations"**).

1.2.1 076, 1850 and 1890 NGNs

1.14 On foot of the NGN Decision, 076, 1850 and 1890 NGNs will be withdrawn on 1 January 2022 as part of the NGN Consolidation. It is ComReg's view that in this circumstance no wholesale regulatory intervention is warranted.

1.2.2 0818 and 1800 NGNs

1.15 As all fixed or mobile operators have the ability to originate calls to 1800 and 0818, the Decision applies to such operators. ComReg will carry out a periodic review of undertakings originating calls to 1800 and 0818 and will update the operators in scope as appropriate.

1.16 Two separate price controls are imposed for 0818 and 1800 NGNs. These are set out in sub-sections 1.2.2.1 and 1.2.2.2 below.

1.2.2.1 0818 NGNs

1.17 A price control is required on WORs for calls to 0818 NGNs in order to mitigate the risk of excessive bargaining power being exercised at the wholesale level. In particular, following the NGN Decision, OOs' bottleneck control on the origination of calls to 0818 NGNs could result in excessive WORs when the Geo-linking Condition comes into effect and/or, if subject to high termination rates for calls to 0818 NGNs.

1.18 In order to address these issues, under the price control, no WORs may be charged by an OO for calls to 0818 NGNs, unless the OO is subject to a 0818 termination rate that is in excess of the regulated fixed termination rate as set out in ComReg Decision D11/19 (the **"Regulated FTR"**)[8]. In such a case, the relevant OO will be permitted to charge a 0818 WOR that is no greater than the difference between that 0818 termination rate and the Regulated FTR.

1.19 As a result, the net wholesale revenue flow between operators will be a payment from the OO to the TO at a rate that is the same as for a Geographic call[9].

1.20 In practical terms this means that:

(a) The OO may not charge a WOR if it is subject to a 0818 termination rate no greater than the Regulated FTR (currently 0.057 c/minute).

[8] Regulated FTR means the wholesale maximum fixed termination rate imposed pursuant to ComReg Decision D11/19 as may be amended from time to time or replaced with equivalent effect by the setting of an alternative rate such as the single maximum Union wide fixed voice termination rate ("**the Eurorate**") set in accordance with Article 75 of the European Electronic Communications Code (EU) 2018/1972.

[9] For calls to 0818 NGNs, SPs may make use of enhanced termination services (e.g. intelligent routing). There is no restriction on the charges for such additional services.

(b) The OO may charge a WOR if the 0818 termination rate is greater than the Regulated FTR. For example, a 0818 termination rate of 4.057 c/minute is charged and the Regulated FTR is 0.057 c/minute. In such a case, the OO may charge a WOR no greater than 4 c/minute (4 c/minute is the difference between that 0818 termination rate (4.057 c/minute) and the Regulated FTR (0.057 c/minute)).

1.2.2.2 1800 NGNs

1.21 In order to address the OOs' bottleneck control, a wholesale price control obligation, in the form of a mandated cost oriented WOR, is imposed for call origination of 1800 calls.

1.22 Cost-oriented WORs have been derived using a bottom-up Long Run Average Incremental Cost plus (**"BU LRAIC+"**) cost standard. Separate fixed and mobile WORs will apply as set out in Tables 1 and 2 below.

Table 1: Maximum WORs for calls to 1800 numbers originating from mobile networks from 2020 to 2024

Year	Maximum WORs (c/minute) – Mobile Networks
2020	1.62
2021	1.61
2022	1.60
2023	1.60
2024	1.59

Table 2: Maximum WORs for calls to 1800 numbers originating from a fixed network from 2020 to 2024

Year	Maximum WORs (c/minute) – Fixed Network
2020	0.873
2021	0.918
2022	0.961
2023	1.000
2024	1.043

1.2.3 Transparency

1.23 ComReg has decided that the proposed price control obligation should be supported with a transparency obligation. Operators will be required to make Fixed Voice Call Origination (**"FVCO"**) and Mobile Voice Call Origination (**"MVCO"**) rates for 1800 and 0818 numbers publicly available, in an easily accessible manner, on its website. FVCO and MVCO rates for 1800 and 0818 should be initially published at the implementation date, set out in paragraph 1.24 below, and should be kept updated. OOs must also ensure that wholesale invoices are sufficiently disaggregated, detailed and clearly presented so that a TO or Transit Operator (**"TrO"**) can reconcile invoices to the published 1800 MVCO Rates and 0818 MVCO Rates.

1.2.4 Implementation

1.24 The wholesale measures for calls to 1800 and 0818 numbers will come into effect on **1 May 2020**. Please see Section 4.8 of the Decision for the details of the six mobile and thirty-one fixed operators that currently fall within the scope of this Decision.

1.25 ComReg will keep the impact of the proposed obligations under review. Unless otherwise required, in advance of 1 January 2025 ComReg will reassess whether intervention remains appropriate and whether the imposed WORs, set out above, remain correct. For the avoidance of doubt, the WOR for calls to 1800 NGNs that applies at 31 December 2024 will continue until such time as ComReg completes a further review.

1.26 ComReg considers that these wholesale measures, in combination with the measures imposed in the NGN Decision will achieve the objectives that:

(a) Organisations are encouraged to use NGNs;

(b) Callers can access more SPs via NGNs;

(c) All operators can provide all callers with access to all NGNs; and

(d) Ultimately give the maximum benefit to end-users.

Chapter 2

Introduction

2.1 ComReg's review of NGNs

2.1 ComReg is responsible for regulating the electronic communications sector in the State, in accordance with EU and Irish law. As part of ComReg's functions in relation to access and interconnection to promote efficiency, ensure sustainable competition, and give the maximum benefit to end-users, ComReg in 2017 began a review of certain telephone numbers known as NGNs. Five classes of NGNs have been considered in this review, namely those numbers that begin with the prefixes 1800 (Freephone); 1850 (Shared Cost – fixed charge); 1890 (Shared Cost – per minute charge); 0818 (Universal Access); and 076 (Nomadic).

2.2 The terms 'Shared Cost', 'Universal Access' and 'Nomadic' are categorisations used in ComReg Document 15/136R1 (**"the 2018 Numbering Conditions"**).[10] On 28 November 2019, shortly before the introduction of the Geo-linking Condition on 1 December 2019, ComReg Document 15/136R2 (**"the 2019 Numbering Conditions")**[11] was published. In the 2019 Numbering Conditions, the terms 'Shared Cost', 'Universal Access' and 'Nomadic' were removed and replaced with the term 'Standard Rate'. This change was an effect of the Geo-linking Condition. For the purpose of this Decision, ComReg will continue to use the terminology from the 2018 Numbering Conditions.

Table 3: Terms for 1890, 1850, 0818 and 076 in the 2018 Numbering Conditions and 2019 Numbering Conditions

NGN	2018 Numbering Conditions Term	2019 Numbering Conditions Term
1890	Shared Cost number	Standard Rate number
1850	Shared Cost number	Standard Rate number
0818	Universal Access number	Standard Rate number
076	Nomadic number	Standard Rate number

[10] ComReg Document 15/136R1 – Numbering Conditions of Use and Application Process – published 22 December 2015 and revised on 1 June 2018.

[11] ComReg Document 15/136R2 – Numbering Conditions of Use and Application Process – published 22 December 2015 and revised on 28 November 2019.

2.3 This Decision includes ComReg's response to the Consultation and ComReg's Final Decision*.* In reaching the Decision ComReg has considered the Submissions from interested parties to the Consultation.

2.4 NGNs are telephone numbers that are not linked to a specific geographic location. Consumers use these numbers to call SPs such as businesses, Government agencies or charities to, for example, get information, make a payment or avail of socially important services, such as access to welfare services, or avail of voice services. Figure 1 above shows a simplified diagram of a call to the different types of NGN. The purpose of ComReg's review has been to identify whether there are obstacles to the access and use by end-users of the NGN ranges, and determine how to remove the obstacles that are identified, with the view to ensuring end-to-end connectivity, and effective access and use of NGNs by end-users.

2.5 Economic research and consumer and organisational surveys conducted by or on behalf of ComReg showed a lack of understanding by consumers of NGN pricing, and that SPs were reluctant to use NGNs due to their high cost. This indicated that the NGN platform was not working efficiently or in the best interests of end-users.

2.6 In particular, as explained in the 2018 NGN Consultation, as a result of insufficiently transparent and high wholesale and retail charges for NGNs, total volumes of NGN calls are lower than they would otherwise be as many end-users are deterred from making calls, and fewer services are provided over NGNs than would otherwise be provided as SPs are deterred by the high cost of using NGNs. If less consumers are ready or willing to call NGNs, there will be fewer SPs with any incentive to provide services over NGNs. If there are less SPs offering services over NGNs, fewer consumers will use NGNs, and so on. Eventually the NGN ranges, which are intended for widespread use to the benefit of consumers generally, are used less and less while being the source of considerable confusion and distrust among a significant proportion of consumers.

2.7 ComReg found that intervention was required at both retail and wholesale levels. The 2018 NGN Consultation consulted on ComReg's findings in respect of both retail and wholesale issues.

2.8 The 2018 NGN Consultation set out ComReg's proposals regarding the end-user-to-operator (or retail) aspects of how calls to NGNs should be sold. That review was concluded with the adoption on 3 December 2018 of ComReg Decision D15/18 (referred to in this Document as **"the NGN Decision"** [12]).

2.9 The NGN Decision limits the number of NGN ranges from 1 January 2022 to two number ranges – 1800 for Freephone and 0818 for all others (this is referred to as

[12] ComReg Document No 18/106 (D15/18) - "Review of Non-Geographic Numbers - Response to Consultation 18/65 and Decision".

"NGN Consolidation"[13]). It also caps the charge for 0818 callers at the price of a geographical number (this is known as the **"Geo-linking Condition"**[14]).

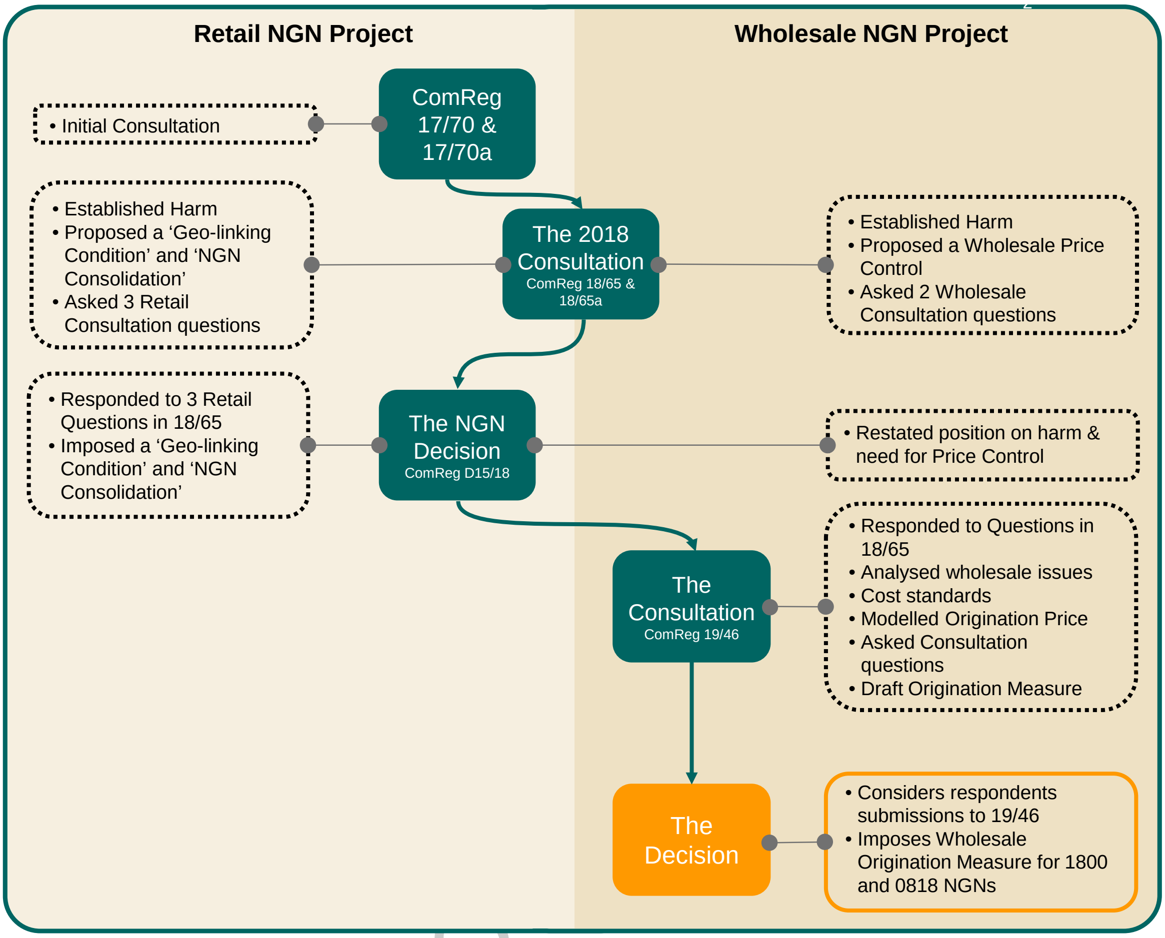
2.10 Secondly, the 2018 NGN Consultation set out ComReg's preliminary view that regulatory intervention at the retail level should be accompanied by intervention at the wholesale level, that is by regulation of the operator-to-operator (or wholesale) aspects of NGNs, in the form of a price control. ComReg's proposals were detailed and put to consultation in ComReg Consultation Document 19/46 published on 22 May 2019 and entitled "*Response to Consultation, Further Consultation and Draft Decision – Access to Non-Geographic Numbers: Imposition of price control and transparency obligations*" (**"the Consultation"**). The Consultation also addressed the wholesale aspects submitted in response to the 2018 NGN Consultation. The present Decision concludes this second aspect of ComReg's review.

2.11 Figure 2 provides a summary of the previous ComReg documents published as part of the two NGN retail and wholesale projects.

[13] This means that the 1850, 1890 and 076 ranges will be withdrawn.

[14] From 1 December 2019, the retail tariff for a call to any of the four ranges 1850, 1890, 0818, and 076 shall not exceed the retail tariff for a call made by the same end-user for a national call made to a Geographic number. The Geo-Linking Condition applies from 1 December 2019 to these four NGNs and once the 1850, 1890, and 076 ranges are withdrawn it will continue to apply to the remaining 0818 range..

Figure 2: ComReg Retail and Wholesale NGN Project documents



2.2 Requirement for Wholesale Intervention

2.12 Insofar as wholesale issues are concerned, the 2018 NGN Consultation described how the bottleneck control held by the operator of the network from which the call originates (**"the Originating Operator" or "the OO"**), due to the SPs' end-to-end connectivity requirements, allows an OO to charge high WORs to the operator on which the call terminates (**"the Terminating Operator" or "TO"**), and thereby indirectly, the SP. SPs require end-to-end connectivity in order to be accessible by all callers, i.e., each Originating Operator's subscribers must be able to access all NGNs. An SP has few options if the cost of NGNs increases as a result of higher WORs because the SP cannot, by way of response, threaten to reject calls originating from that Originating Operator. WORs charged by mobile operators were observed to be materially higher than those charged by fixed operators.

2.13 In order to remedy consumer harm arising from excessive WORs, in particular limited use of, and fewer services on, the NGN platform, to the detriment of end-users, ComReg set out its preliminary view that wholesale intervention was required in order to ensure that existing high WORs are reduced, and ensure that SPs only pay to cover the costs of the call that are not covered by the retail charge to the caller (e.g. origination costs of 1800 Freephone). ComReg expressed its preference for a price control accompanied by transparency obligations, which would be subject to further consultation.

2.3 The Consultation

2.14 The Consultation published on 22 May 2019 set out in specific terms ComReg's preliminary view as regards the nature and form of the proposed price control. The Consultation was accompanied by a number of reports.

2.15 A report by DotEcon (the **"DotEcon Report"**)[15] considered the appropriate principles and specific details on the appropriate form of wholesale price control for NGNs. DotEcon also recommended key parameters to be considered in developing detailed cost modelling where appropriate.

2.16 ComReg also engaged Analysys Mason (**"AM"**) and TERA to develop cost models for mobile and fixed call origination. AM prepared a model, at the time referred to as the "Draft Mobile Voice Call Origination model" (the **"Draft MVCO Model"**). TERA prepared a model called the "Draft Fixed Voice Call Origination model" (the **"Draft FVCO Model"**).

2.17 Submissions to the Consultation were received from the following operators (**"Respondents"**):

(a) Three Ireland (Hutchison) (**"Three"**) Limited

(b) Eircom Limited (**"Eircom"**)

(c) Tesco Mobile Ireland Limited (**"TMI"**)

(d) Verizon Ireland Limited (**"Verizon"**)

(e) Virgin Media Ireland (**"Virgin Media"**)

(f) BT Communications Ireland Limited (**"BT"**)

(g) Colt Technology Services Limited (**"Colt"**)

(h) Vodafone Ireland Limited (**"Vodafone**")

2.18 Following a review of the Submissions DotEcon has updated its report to include a separate Annex where various points raised by the Respondents have been addressed.[16]

2.19 AM reviewed the Draft MVCO Model and specification document for the purposes of this Decision. The specification document has been updated to include an

[15] ComReg Document Number 19/46a "A price control for regulation of wholesale charges for non-geographic numbers – A DotEcon Report for ComReg" (the **"DotEcon Report"**)

[16] ComReg Document Number 20/04a

assessment of issues raised by Respondents. The model is now referred to as the "**MVCO Decision Model"**.

2.20 Similarly TERA reviewed and updated the Draft FVCO Model and specification document for the purposed of this Decision. This is now referred to as the "**FVCO Decision Model"**. A modification was applied to the FVCO Decision Model which results in slight changes in call tariffs between the Decision and Consultation. This modification resulted in increased costs per call minute of approximately 0.05 cent in each of the years up to an including 2024.

2.21 As part of the decision process ComReg notified the draft Decision to the EC, the Body of European Regulators for Electronic Communications (**"BEREC"**)[17] and NRAs in other Member States.

2.22 This Decision takes into account comments received from Respondents and from the EC following on from the Article 7 notification of the draft Decision[18].

2.4 Information Sources Relied Upon

2.23 As part of the decision making process, ComReg obtained qualitative and quantitative information from SPs through a series of formal and informal information requests, as well as through industry meetings before arriving at its final position, as set out in this Decision.

2.24 In conducting its analysis, ComReg has drawn on data from a number of sources, including:

(a) ComReg Document No 14/08[19] - an Information Notice.

(b) ComReg Document No 14/23[20] – a call for input which summarised the outcome of the industry workshop proposed in the Information Notice and sought submissions from interested parties on six questions around the current regime for calls to NGNs. It also proposed a second industry workshop.

[17] The Body of European Regulators for Electronic Communications ('BEREC') as established by Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009.

[18] The draft Decision Document was notified to the EC on 11 November 2019.

[19] Please see https://www.comreg.ie/publication/industry-meeting-wholesale-charges-for-non-geographic-numbers-for-fixed-line-operators/

[20] Please see https://www.comreg.ie/publication/wholesale-charges-for-non-geographic-numbers/

(c) ComReg Document No 14/25[21] - an Information Notice that granted an extension for submissions in response to ComReg Document No 14/23.

(d) ComReg Document No 14/130[22]

(e) Responses to ComReg Document No 15/40[23] (the **"Call for input"**)

(f) The 2018 Numbering Conditions - the conditions attaching to the five classes of NGNs described at Table 1 of this Decision are set out in section 4 of the 2018 Numbering Conditions.

(g) The 2019 Numbering Conditions - the conditions attaching to the five classes of NGNs described at Table 1 of this Decision are set out in section 4 of the 2019 Numbering Conditions. These conditions were effective from 28 November 2019 onwards.

(h) ComReg Document No 16/11 "Strategic Review of Non-Geographic Numbers - Project Update" (**"ComReg Document No 16/11"**).[24]

(i) ComReg Document No 17/70[25] along with four appendices.

(j) ComReg Document No 17/70a [26] (**"the 2017 DotEcon Report"**)

(k) ComReg Document No 17/70b[27], (**"the B&A Consumer Survey"**)

(l) ComReg Document No 17/70c[28] (**"the B&A Organisation Survey"**) and;

(m) ComReg Document No 17/70d[29]) (**"the Materials Cost Survey"**)

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[21] Please see https://www.comreg.ie/publication/wholesale-charges-for-non-geographic-numbers-extension-to-submission-date-for-comreg-1423/

[22] Please see https://www.comreg.ie/publication/update-on-treatment-of-non-geographic-numbers/

[23] Please see https://www.comreg.ie/publication/call-for-input-wholesale-charges-for-non-geographic-numbers-development-of-a-mobile-cost-model/

[24] ComReg Document No 16/11 "*Strategic Review of Non-Geographic Numbers - Project Update*" – published on 11 February 2016. Please see https://www.comreg.ie/publication/strategic-review-of-non-geographic-numbers-project-update/

[25] Please see https://www.comreg.ie/publication/review-non-geographic-numbers/

[26] ComReg Document 17/70a – *Non-Geographic Numbering – Report from DotEcon on non-geographic numbers in Ireland* – published 16 August 2017. Please see https://www.comreg.ie/publication/report-dotecon-non-geographic-numbers-ireland/

[27] ComReg Document 17/70b – *Non-Geographic Numbers: Consumer Survey* – published 16 August 2017. Please see https://www.comreg.ie/publication/ba-consumer-study-non-geographic-numbering/

[28] ComReg Document 17/70c – *Non-Geographic Numbers: Organisation Survey* – published 16 August 2017. Please see https://www.comreg.ie/publication/ba-organisation-study-non-geographic-numbering/

[29] ComReg Document 17/70d – *Non-Geographic Numbers: Materials Cost Survey* – published 16 August 2017. Please see https://www.comreg.ie/publication/ba-materials-cost-study-non-geographic-numbering/

(n) ComReg Document Number 18/65[30] (**"the 2018 NGN Consultation"**) and its accompanying DotEcon Report "*Review of Non – Geographic Numbers – DotEcon Response to Consultation 17/70*"[31] (**"the 2018 DotEcon Report"**).

(o) Submissions to the 2018 NGN Consultation.[32]

(p) ComReg Document No 18/106 (D15/18)[33]- "Review of Non-Geographic Numbers - Response to Consultation 18/65 and Decision" (**"the NGN Decision"**).

(q) Submissions received in response to ComReg's Information Requirement (**"the 13D(1) Request"**) under Section 13D(1) of the Communications Regulation Act 2002 (**"the Act"**)[34].

(r) the Termination Markets SMP Decision.

(s) the Termination Markets Pricing Decision.

(t) ComReg Document Number 19/46b: "*Report for ComReg - Additional cost modelling for mobile voice origination*" (**"the AM Report"**).

(u) ComReg Document Number 19/46c: "*Assessment of Fixed Voice Call Origination to Non-Geographic numbers in Ireland – Specifications and results*" (**"the TERA Report"**).

(v) ComReg Document Number 19/46a "*A price control for regulation of wholesale charges for non-geographic numbers – A DotEcon Report for ComReg*" (**"the DotEcon Report"**).

(w) Submissions received in response to ComReg Document 19/46[35]

2.5 Structure of this Decision Document

2.25 The key issues and ComReg's final positions are set out in a similar structure to the Consultation.

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[30] Please see:

https://www.comreg.ie/publication/response-to-consultation-review-of-non-geographic-numbers/

[31] Please see:

https://www.comreg.ie/publication/dotecon-response-to-consultation-review-of-non-geographic-numbers/

[32] Please see: https://www.comreg.ie/publication/submissions-to-consultation-18-65/

[33] Please see: https://www.comreg.ie/publication/review-of-non-geographic-numbers-response-to-consultation-18-65-and-decision/

[34] The Communications Regulation Act 2002 (No. 20 of 2002), as amended

[35] ComReg Document No: 19/46s - Submissions to Consultation 19/46

2.26 Annex 7 sets out in detail Respondents' views on the questions raised in the Consultation, together with any other issues/concerns raised. This is then followed by an assessment by ComReg, concluding with ComReg's final response to the issues/concerns raised in the Submissions.

2.27 Where appropriate, a summary of Respondents views and ComReg's assessment of such is contained in the main body of the Decision. Cross references to the relevant paragraphs of Annex 7 is also made where a more detailed assessment of the views of specific Respondents is set out. ComReg's final position on the questions raised in the Consultation is also set out in the main body of the Decision.

2.28 The remainder of this Decision Document is structured as follows:

Chapter 3: This Chapter provides a background to the relevant NGNs, summarises the harm identified in the current NGN regime, provides the legal basis and refers to previous ComReg Consultations and Decisions.

Chapter 4: This Chapter considers the appropriate form of regulation of wholesale charges for NGNs, and outlines the current and future charging arrangements for each of the NGN ranges in scope

Chapter 5: This Chapter sets out the final regulatory remedies to address problems with calls to 1800 from Mobile networks

Chapter 6: This Chapter sets out the final regulatory remedies to address problems with calls to 1800 from Fixed networks.

Chapter 7: This Chapter sets out the Regulatory Impact Assessment (**"RIA"**) of the proposed approaches to regulate the wholesale NGNs under review

Annex 1: Glossary

Annex 2: Worked Examples

Annex 3: Non-confidential Submissions to the 2018 NGN Consultation (ComReg Document Number 18/65).

Annex 4: DotEcon Annex(s)

Annex 5: Analysys Mason Annex(s)

Annex 6: TERA Annex(s)

Annex 7: Review of Submissions to Consultation 19/46

Annex 8: Consideration of European Commission (**"EC"**) Comments.

Annex 9: Final Decision Instrument which specifies, in legal form, the decisions made arising from this Decision in respect of Mobile networks

Annex 10: Final Decision Instrument which specifies, in legal form, the decisions made arising from this Decision in respect of Fixed networks.

2.29 This is a non-confidential version. Certain information within has been redacted for reasons of confidentiality, with such redactions indicated by the symbol✂. Should an individual operator wish to review its own redacted information, it should make a request for such in writing to ComReg and indicate, where possible, the specific paragraph numbers within which the redacted information being requested is contained. ComReg will consider requests for redacted information and will, subject to the protection of confidential information, respond accordingly.

Chapter 3

Background

3.1 In the following sections, ComReg will discuss the following:

(a) What are NGNs?

(b) Description of NGNs and associated terms

(c) Summary of the harm identified

(d) Legal basis and regulatory framework

(e) The NGN Decision

(f) ComReg's Fixed Voice Call Termination (**"FVCT"**) and Mobile Voice Call Termination (**"MVCT"**) market review

3.1 What Are NGNs?

3.2 NGNs are telephone numbers that are not linked with any particular geographic location. This contrasts with Geographic numbers on the fixed network where the prefix indicates a particular location (for example '01' for Dublin).

3.3 NGNs are defined in the Universal Service Regulations as:

> *"…a number from the national numbering scheme that is not a geographic number and includes, among other things, a mobile, freephone and premium rate number."*

3.4 Premium rate numbers were not considered in the context of this Decision.

3.5 NGNs provide an important platform for the delivery of a wide variety of services. They are mainly used by various SPs such as businesses, charities and public bodies to offer services to end-users. For example, private companies, public sector bodies and charities use these numbers to deliver teleconference services, help lines, customer support numbers and response numbers to support marketing campaigns, product help desks, information services and international calling services.

3.6 NGNs generally allow calls to be placed at the same cost to the end-user regardless of the end-user's location within Ireland. This Decision is solely concerned with the five ranges of NGNs listed in Table 4 below:

Table 4: The five classes of NGNs under review

NGN class	Description
'1800'	Freephone
'1850'	Shared Cost (fixed charge)
'1890'	Shared Cost (per minute charge)
'0818'	Universal Access
'076'	Nomadic

3.7 The 1800 access code allows a called party to be reached at no charge to the caller, as the total cost of the call is borne by the called party (i.e. the Receiving Party Pays principle)[36]. These are often referred to as 'Freephone' numbers.

3.8 NGNs with the access codes of 1850 and 1890 allow the cost of the call to be shared between the caller and the called party. The caller is charged for the call at a fixed rate regardless of the call duration (1850) or at a fixed per minute rate (1890). These are often referred to as 'Shared Cost' numbers.

3.9 The cost of the call for NGNs with the access codes 0818 and 076 is paid by the caller and there should be no contribution from the called party (i.e. the Calling Party Pays principle)[37].

3.10 A simple example of the NGN supply chain between an end-user and a SP was shown in Figure 1 in Chapter 1.

3.11 These categories of NGNs are mainly used by businesses to direct their customers' calls to a customer service area such as a helpdesk. Usually businesses will engage a telecommunications operator to handle the telecommunications aspects of the service and terminate the call. These telecommunication operators may be fixed network operators (**"FNOs"**) or mobile network operators (**"MNOs"**). In some cases a call may transit more than one network before arriving at the SP and the question arises as to how these additional operators are to be compensated for the use of their networks. This will be explained in Section 3.2, specifically sub-section 3.2.1.

3.2 Description of NGNs and associated terms

3.12 In the following sub-sections, ComReg will describe the parties in the NGN value chain, a number of terms commonly used in the context of NGNs and the relevance of these terms for this Decision:

(a) The NGN Value chain

[36] Please see Section 3.2.2 of this Decision.

[37] Please see Section 3.2.2 of this Decision.

(b) Calling Party Pays and Receiving Party Pays

(c) Shared Cost

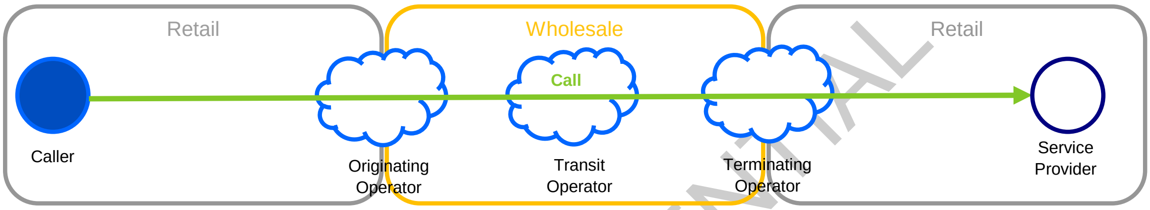
(d) The Deemed-to-be Regime

3.2.1 The NGN Value Chain

3.13 There are a number of parties involved in making a call to a NGN. This section will briefly describe each party and their role in the NGN Value Chain.

3.14 Figure 3 below considers the wholesale and retail interactions that facilitate a NGN call between a caller and a SP.

Figure 3: Expanded NGN value chain



3.15 The parties in the expanded NGN Value chain are as follows:

(a) **"Caller"** means the end-user that initiates the call to the NGN.

(b) **"Service Provider"** or **"SP"** (e.g. a business or charity) which uses the NGN to receive calls and deliver services to the caller. The SP is the party being called.

(c) **"Originating Operator" or "OO"** means the operator of the fixed or mobile network to which the caller is connected. The OO is responsible for call origination.

(d) **"Terminating Operator" or "TO"** means the operator of the fixed or mobile network to which the SP is connected. The TO is responsible for call termination.

(e) **"Transit Operator" or "TrO"** means an intermediary operator that may be used if the OO and TO are not directly connected. The TrO is responsible for call transit.

3.16 There is a retail relationship between the caller and the OO, and separately between the TO and the SP. This is often referred to as the 'retail level'. There is a wholesale relationship between the OO, the TO and TrO often referred to as the 'wholesale level'. This Decision considers the circumstances where a call leaves the OO network, and is delivered to another network to reach the SP (an **"off-net call"**). Where a call originates and terminates on the same network (an **"on-net call"**) there are no wholesale level interactions between operators.

3.17 ComReg would note that as call transit is no longer a regulated market it was not referenced in the Consultation except where necessary. There was feedback from a number of operators in the Consultation responses in relation to transit issues. These have been covered in detail in Annex 7, paragraphs A7.21 to A7.42

3.18 To provide a call from the caller to the SP, the infrastructure of the operators in the NGN value chain is used, generating incremental cost for each operator:

(a) OOs, being responsible for call origination, incur an Origination Cost

(b) TOs incur a Termination Cost.

3.19 Operators must recover these costs and have options to do so at either the wholesale or the retail level. By way of a very simple example operators can recover at the retail level via a retail rate, the wholesale level through a wholesale rate or a combination of both. This Decision focuses on wholesale rates taking into account activity at the retail level to ensure that operators can fully recover all of their costs.

3.2.2 Calling Party Pays and Receiving Party Pays

3.20 For Geographic calls and for 0818 and 076, it is the caller that is responsible for the cost of the call (the SP is not charged). For 1800, it is the SP that is responsible for the cost of the call (the caller is not charged). This follows two well established retail principles that determine the party responsible for paying for the cost of the call, namely the Calling Party Pays (**"CPP"**) principle and the Receiving Party Pays (**"RPP"**) principle. The CPP principle is applicable to 0818 and 076, and the RPP principle applies to 1800.

3.21 The Calling Party Pays and Receiving Party Pays Principles were explained in ComReg's Termination Markets SMP Decision[38] as follows:

> *"Under the Calling Party Pays principle, the subscriber initiating the call ('the calling party') incurs the cost of the call (charged either as a monetary amount, or as a deduction from the subscriber's allocation of bundled minutes). The subscriber answering the call ('the called party') incurs no cost in doing so."*
>
> *"Freephone (1800) numbers allow the called party to be reached at no charge to the calling party. The costs of a call to a freephone number are borne entirely by the called party - the Receiving Party Pays ('RPP'), rather than the CPP, principle applies."*

3.22 As discussed in Section 3.2.3 of this Decision, the 1890 and 1850 numbers are a hybrid of CPP and RPP principles in that both the caller and the SP pay for some part of the call. They are known as "Shared Cost" numbers. All numbers in the Irish numbering range follow either the CPP, RPP or Shared Cost principle.

[38] Footnote 8 and paragraph 5.45. Please refer to Section 3.4.4

3.23 The CPP and RPP principles are retail principles, in that they determine whether it is the caller or the SP that is charged for the call at the retail level:

(a) Under the CPP principle the caller pays to make the call. The operative retail relationship is that of charges and payments between the caller and the OO. The retail relationship between the SP and the TO is limited to the rule that the TO must not charge the SP to receive the call.

(b) Under the RPP principle, the SP pays to receive the call. The operative retail relationship is that of charges and payments between the SP and the TO. The retail relationship between the caller and the OO is limited to the rule that the OO must not charge the caller to make the call.

3.24 The CPP and RPP principles therefore determine at which end of the NGN Value chain are all retail charges levied for the call, and thereby who collects any retail revenue.

3.25 As discussed further below, while the CPP and RPP principles operate at the retail level, they have an impact at the wholesale level. The CPP and RPP principles limit how operators in the NGN value chain (OOs and TOs) charge for services, for example :

(a) Under the CPP principle, it is the Calling party that pays the retail charge for the call, not the receiving party. Consequently, a TO may not levy a retail charge on the SP. Under the CPP principle, a TO can only charge at the wholesale level.

(b) Under the RPP principle, it is the Receiving party that pays the retail charge for the call, not the Calling party. Consequently an OO may not levy a retail charge on the caller. Under the RPP principle an OO can only charge at the wholesale level.

3.2.3 Shared Cost

3.26 Shared Cost numbers are defined in the 2018 Numbering Conditions as those NGNs with a prefix of 1890 or 1850[39].

3.27 For the period up to 1 December 2019, a maximum retail rate that the OO could charge to the caller for a call to 1850 or 1890 NGNs was set at the equivalent of a call to a 'Local' Geographic number[40]. If a call was not 'Local' (i.e. it was a 'National' call[41]) any difference between the retail Local Geographic call charge and the retail

[39] As noted at paragraph 2.22.2 of this Decision, 1890 and 1850 are referred to as Standard Rate Numbers in the 2019 Numbering Conditions.

[40] A 'Local' call to a Geographic number is a call originated and terminated within the same area code.

[41] A 'National' call to a Geographic number is a call originated in one area code and in a different area code.

National Geographic call charge was charged to the SP. This arrangement "shared the cost" of a National rate call between the caller and the SP.

3.28 In this case, Shared Cost numbers are a combined application of the CPP and RPP principles for a national rate call. The Calling Party Pays the OO local rate for the call the Receiving Party Pays the remainder.

3.29 The caller and the OO have a retail relationship, meaning that the caller can easily be charged by the OO for the local part of the call. While it is possible that the SP may be on the same network as the caller (i.e. both the caller and the SP have a retail relationship with the OO, i.e. an on-net call) it not always the case.

3.30 For the OO to charge the SP for the remainder of an off-net Shared Cost call, a charge at the wholesale level is required from the OO, ultimately to the TO. The TO then passes this wholesale level charge through to the SP as a retail charge to receive the call.

3.31 Shared Cost is applicable at the retail level in that it dictates the arrangements for caller and SP charges. However the RPP element of a Shared Cost call results in a charge at the wholesale level. The sum of the OO wholesale and retail charges for a Shared Cost call should not exceed that of the OO's retail rate for a call to a National Geographic number. The maximum wholesale charge that an OO may levy for a Shared Cost call is determined by the difference between two retail rates, the retail national rate and a retail local rate. Therefore, much like the retail level CPP and RPP principles, Shared Cost is a retail level measure that has a wholesale level impact and should be considered in this Decision.

3.32 On 28 November 2019, ComReg published the 2019 Numbering Conditions. These updated conditions reflected changes resulting from the Geo-Linking Condition[42] that became effective on 1 December 2019. The maximum retail rate for calls to 1890 or 1850 NGNs was increased from a Local Geographic call charge to a National Geographic call charge. While this effected the retail rate charged by the OO, it placed no constraint on the wholesale charges levied by the OO for calls to 1890 or 1850 NGNs.

3.2.4 Possible retail and wholesale charging options for NGN calls

3.33 In the Consultation ComReg considered the possible charging options for calls to NGNs.

[42] The Geo-linking Condition requires that, from 1 December 2019, the retail tariff for a call to any of the four ranges 1850, 1890, 0818, and 076 shall not exceed the retail tariff for a call made by the same end-user for a national call made to a Geographic number. The Geo-Linking Condition applies from 1 December 2019 to these four NGNs and once the 1850, 1890, and 076 ranges are withdrawn it will continue to apply to the remaining 0818 range.

3.34 To carry a call (either NGN or Geographic) from the caller to the SP, the operators in the NGN Value Chain will incur an incremental, per call, cost. Operators are entitled to recover these costs and can do so at either the retail or the wholesale level typically through a 'per minute' charge. Below are a number of examples as to how the operators in the NGN Value chain could levy charges to recover such costs:

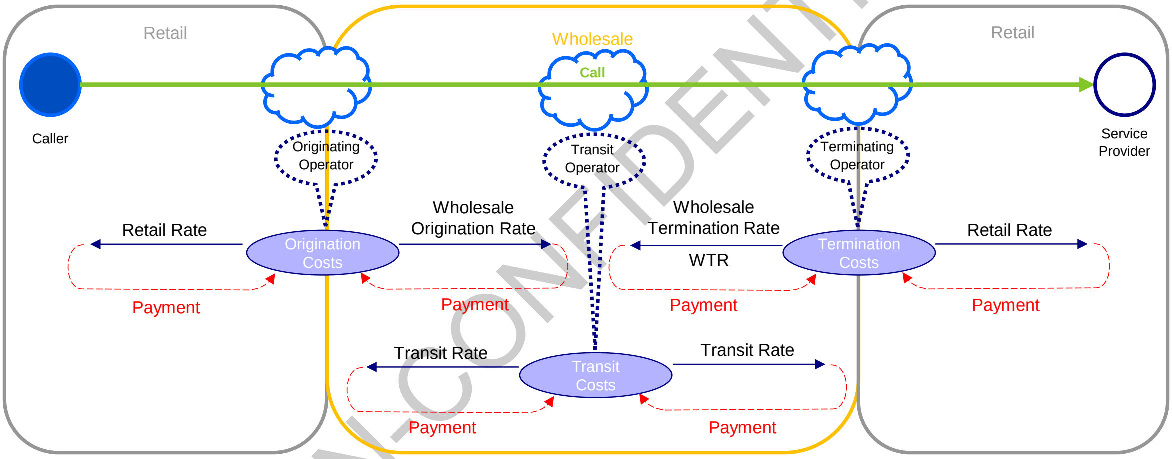
(a) An OO could impose a charge at the retail level on the caller and/or at the wholesale level on the TrO or TO.

(b) A TrO could impose a charge at the wholesale level on the OO and/or the TO.

(c) A TO could impose a charge at the retail level on the SP and/or at the wholesale level on the TrO or OO.

3.35 Figure 4 below shows the different theoretical charging options available to the OO, TrO and TO in the NGN value chain:

Figure 4: Theoretical charging options



3.36 In theory, each operator in the NGN Value chain has the option to charge up to two parties for a call. However, some of these options are not always available. In particular, the retail tariff principles described in the 2018 Numbering Conditions and also industry custom and practice developed over a number of years mean that, for the numbers in scope, certain charging choices are not available or are not used. For example, for a call to a number in a range where the CPP principle applies:

(a) The TO may not charge the SP: the TO has only one charging option i.e. a WTR.

(b) The OO charges the caller and no WOR is charged. There is no rule prohibiting a WOR, but it is generally observed that a WOR is not charged on CPP principle numbers.

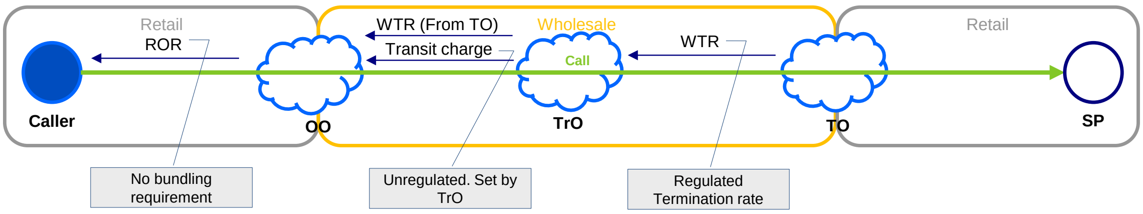
3.37 At Section 4.2 of this Decision, ComReg will describe the charging options for Operators for the NGNs in scope considering the effect of general industry practice and the 2018 Numbering Conditions and other ComReg Decisions.

3.2.5 Charges for calls to Geographic numbers

3.38 In Section 4.5 of the Consultation, ComReg discussed how the charging regimes for some NGNs will change to follow that of calls to Geographic numbers.

3.39 Figure 5 below shows the flow of wholesale and retail level charges for an off-net Geographic call.

Figure 5: Charges for Geographic Numbers



3.40 Calls to Geographic numbers follow the CPP principle. In terms of retail charges, the OO charges the caller, the SP is not charged. The OO charges the caller a retail origination rate (**"ROR"**) at an appropriate geographic rate (if out-of-bundle) or deducts the duration of the call from any available bundle minutes. There is no requirement for the call to be included in a bundle.

3.41 At the wholesale level, the OO is subject to two charges: a WTR from the TO and, where relevant, a Transit charge from the TrO.

3.42 In 2015, ComReg concluded that regulation of the Transit Market was not warranted (See 2015 Wholesale Fixed Voice Call Origination and Transit Markets Response to Consultation and Decision (Decision D05/15), (**"the 2015 FACO and Transit Decision"**))[43]. In paragraph 1.14 of the 2015 FACO and Transit Decision, ComReg concluded that:

> *"With respect to the Transit market, ComReg has decided to maintain its preliminary position as set out in the Consultation. ComReg has concluded that regulation of that market is no longer warranted given that barriers to entry have been overcome, and that the market is tending towards effective competition. In particular, there is evidence of existing competition within the Transit market, and that a number of service providers have increased the degree to which they interconnect directly with each other (thereby avoiding or reducing the need to purchase Transit from a third-party)."*

3.43 This means that the transit element of calls is competitive and has not had *ex ante* regulation or other forms of regulation applied since the expiry of the sunset period

[43] Please see ComReg Document No 15/82 (D05/15) at https://www.comreg.ie/publication/market-review-wholesale-fixed-voice-call-origination-and-transit-markets/

as set out in the 2015 FACO and Transit Decision[44]. The transit charge is not subject to any price control regulation.

3.44 As noted at paragraph 3.17 above several operators commented on transit related issues in their Submissions to the Consultation. Please refer to Annex 7, paragraphs A7.21 to A7.42.

3.45 The WTR for calls to Geographic numbers are subject to a price control which sets a cost based maximum rate that the TO may charge to other operators in the NGN Value chain. Typically the OO pays this WTR.

3.46 ComReg has included at Annex 2 of this Decision worked examples of how current and revised charges under review are applied and compares these to the payment flows between operators for Geographic numbers.

3.2.6 The "Deemed-to-be Regime"

3.47 For many years a voluntary arrangement of symmetric rates was in place for calls to NGNs. Under this arrangement (the **"Deemed-to-be Regime"**) the WORs for calls to 1800, 1890 and 1850 numbers levied by Operators of fixed networks were Deemed-to-be the same as the rates levied by Eircom.

3.48 Pursuant to Eircom's designation of Significant Market Power (**"SMP"**) in the market for wholesale interconnection services[45] Eircom's rates were set via a cost-based model and were published in the Eircom Switched Routing and Transit Price List (**"the Eircom STRPL"**). Operators of fixed networks taking part in the Deemed-to-be Regime charged the same cost based rate as Eircom. As a result the WORs charged by all participants in the Deemed-to-be Regime were cost based albeit using Eircom's costs.

3.49 Operators of mobile networks did not join the voluntary Deemed-to-be Regime and charged their own WORs. These WORs were not cost based.

3.50 The WORs charged by Operators of mobile networks were significantly higher than the WORs charged by Operators of fixed networks under the Deemed-to-be Regime. For example on 1 October 2014 the WOR levied by an Operator of a fixed network (under the Deemed-to-be Regime) for a peak-time call to a 1800 number was 0.8 c per minute. The WOR levied by an Operator of a mobile network for the same call to a 1800 number was 34 c per minute, 42.5 times greater than the 'cost-based' Deemed-to-be WOR.

[44] The sunset period expired in January 2016.

[45] ComReg Decision No. D04/07.

3.51 In November 2014, BT left the Deemed-to-be Regime and began setting its own higher WOR for calls to 1800, 1890 and 1850[46]. During 2015, four other fixed operators also left the Deemed-to-be Regime. Operators leaving the Deemed-to-be Regime cited frustration that excessive WORs, significantly above cost, continued to be levied by Operators of mobile networks for calls to NGNs while Operators of fixed networks under the Deemed-to-be Regime charged a cost-based rate. These fixed operators remain outside the Deemed-to-be Regime.

3.3 Summary of the harm identified

3.52 Despite the development of other forms of communication services, voice services remain an essential aspect for the connection between individuals across society. This is particularly important for NGNs which provide an important platform for the delivery of a wide variety of services. As noted above, NGNs are used by various SPs such as businesses, charities and public bodies to offer services to end-users.

3.53 ComReg Document No. 17/70 and the 2018 NGN Consultation and the NGN Decision stated how ComReg intended to implement a wholesale price control mechanism on NGN call origination charges[47] in order to address the bottleneck control, at the wholesale level, resulting in excessive charges for wholesale services associated with NGNs to the ultimate detriment and harm of end-users. A detailed assessment of harm is contained in Chapter 3 of the 2018 NGN Consultation (supported by the DotEcon Reports) and is summarised below.

3.54 The DotEcon Report, has been updated to include a new Annex which covers some of the issues raised by Respondents in their Submissions. The revised non-confidential version of this report has been published as ComReg Document 20/04a[48]. It recognises that although Eircom's WORs (which includes those for NGNs) are regulated, other fixed and mobile operators are not subject to any regulation for NGNs. In its reports to ComReg, DotEcon presented evidence of the significant differences between regulated, cost-oriented WORs charged by Eircom and the WOR imposed by other fixed and mobile operators.

3.55 In the 2018 NGN Consultation ComReg considered the proposed intervention under the following headings:

(a) "Rationale for harm arising from existing wholesale interconnect regime". See Sections 3.8 - 3.21 of the 2018 NGN Consultation.

[46] BT's peak 1800 WOR increased from 0.8c per minute under the Deemed-to-be Regime to 2.73c per minute, 3.4 times greater.

[47] Pursuant to Regulation 6(2) of the Access Regulations and/or Regulation 23(1) of the Universal Service Regulations

[48] ComReg Document No 20/04a.

(b) "Evidence of harm arising from the existing wholesale interconnect regime" See sections 3.22 - 3. 46 of the 2018 NGN Consultation.

(c) "*Wholesale intervention and potential approaches*". See sections 3.47 - 3. 79 of the 2018 NGN Consultation.

3.56 ComReg has summarised these sections of the 2018 NGN Consultation in sections 3.3.1 to 3.3.3 of this Decision.

3.3.1 Rationale for harm arising from existing wholesale interconnect regime

3.57 At sections 3.8 - 3.21 of the 2018 NGN Consultation, it was noted that each OO exerts a significant degree of bottleneck control over access to its customers for the purposes of making NGN calls. In particular, OOs are free to set retail (for all numbers other than 1800) and WORs at the level that they each choose. There is little within the NGN sphere that SPs or TOs can do in terms of taking any countervailing action where WORs are set at excessive levels. In effect, OOs can exploit their position of control, to a significant degree and to the detriment of end-users, because SPs are unable to take countervailing action to deter or prevent such behaviour (other than deciding not to use an NGN at all, which may be more detrimental to some SPs than using an NGN under a less than optimal pricing structure).

3.58 As summarised in the 2018 NGN Consultation,[49] the supporting DotEcon Report[50] identified and described three main reasons[51] why OOs have been able to set WORs at an excessive level:

(a) SPs require end-to-end connectivity in order to be accessible by all callers – i.e. each OO's subscribers must be able to access all NGNs. This is reflected in the regulatory principle that regulatory authorities shall encourage end-to-end connectivity;

(b) The procedure for charging SPs is not transparent, making weak incentives for TOs and SPs to force down OOs charges; and

(c) TOs have weak incentives to change the existing wholesale regime as some of the excess returns are passed through in the form of a more generous termination rate.

3.59 In particular, as explained in the 2018 NGN Consultation,[52] end-to-end connectivity is the mechanism through which all consumers can access services provided by all

[49] Paragraphs 3.9 of ComReg Document 18/65, p. 55.

[50] ComReg Document 18/65a – DotEcon: Response to Consultation 17/70 – Published 11 July 2018.

[51] Section 6.3 – ComReg Document 18/65a – DotEcon: Response to Consultation 17/70 – Published 11 July 2018.

[52] Paragraphs 3.11ff of ComReg Document 18/65, pp. 55-56.

SPs, regardless of operators and it requires that all operators are interconnected with each other in order that they can provide full service to their respective customers. In this context, an SP providing a service using an NGN where a WOR is levied would rely on that service being accessible to all potential callers, across every OO. If an SP rejected calls from a particular OO with a 40% market share, the SP would be cut off from 40% of its potential customers. It is accordingly very difficult for SPs to threaten to reject calls in response to an increase in WORs.

3.60 Furthermore most SPs are not charged a separate individual call origination charge for each individual NGN call received, but rather are charged a weighted average of the WOR of different operators, according to their relative traffic. This means that the impact, in terms of lost volumes, of an increase of the WOR charged by an OO on that OO is greatly diluted in the traffic mix so that that OO benefits from increased revenues while the volume impact is spread amongst all OOs. For the same reasons, an OO would benefit little from lowering its WORs as any increase in volumes would be shared amongst all OO traffic. The NGN regime accordingly encourages, rather than discourages, high WORs.

3.3.2 Evidence of harm arising from the existing wholesale interconnect regime

3.61 Sections 3.22 - 3.46 of the 2018 NGN Consultation noted that access to services provided by SPs using NGNs, and the provision of end-to end connectivity, can be restricted through retail and wholesale origination charges:

(a) if an OO increases its retail charges to such extent as to effectively foreclose its customers from accessing an SP's services, the SP will not receive calls which the OO's customers would otherwise have made.

(b) an OO's high wholesale NGN call origination charges may discourage SPs from providing services on NGNs that cost less or are free of charge for callers. This could also effectively foreclose certain SPs' services to consumers.

3.62 In relation to bullet (a) above, the 2018 NGN Consultation identified and described the consumer harm identified as resulting from high NGN retail charges and the manner in which access to services was provided. In relation to bullet (b) above, ComReg's assessment of how high WORs reduces access to services provided over NGNs was divided into two sources of harm, namely (i) Existing wholesale harm; and (ii) Potential wholesale harm arising from retail remedies absent concurrent wholesale remedies.

3.3.3 Wholesale intervention and potential approaches

3.63 At sections 3.47 - 3.79 of the 2018 NGN Consultation, ComReg noted that in light of the identified consumer harm described in the 2018 NGN Consultation, it was of the preliminary view that wholesale intervention in relation to NGNs to protect consumers would be a justified and proportionate measure, specifically as it should improve consumers' ability to access voice-based services provided over NGNs, including by increasing the range of NGN services and/or by reducing or removing the retail charges for accessing such services.

3.64 ComReg was of the preliminary view that intervention is justified, proportionate and necessary to ensure end-to-end connectivity, interconnection and interoperability in relation to NGNs and services and to ensure end-users access to numbers and services.

3.65 Amongst other things, ComReg remains of the view that:

(a) existing WORs[53] are excessive, especially for mobile originated calls, and have likely reduced consumers' access to services provided over NGNs;

(b) wholesale intervention is required to complement the proposed retail remedies (the Geo-linking Condition and NGN Consolidation);

(c) in the absence of any corresponding wholesale interventions, OOs may seek to recover lost retail margins (resulting from the Geo-linking Condition) by introducing[54] or increasing WORs, thereby increasing the charges faced by SPs and further discouraging SPs from offering services provided over NGNs;

(d) wholesale intervention would likely increase the extent to which SPs provide access to services over NGNs and in particular increase access to Freephone services.

3.66 ComReg's view, supported by DotEcon, is that wholesale intervention is justified given that each OO has bottleneck control, and charges levied by OOs cannot be avoided by SPs who need to be accessible to all callers regardless of the network which the caller may subscribe to.[55] The potential approaches are summarised in Section 4.1 of this Decision.

3.67 ComReg considers that wholesale intervention aligns with its statutory objectives to promote competition, and to promote the interest of end-users and its statutory functions with regard to access and interconnection, to promote efficiency, sustainable competition and efficient investment and innovation and to give the maximum benefit to end-users. Further analysis of how the proposed approach specifically meets ComReg's obligations and regulatory policies is set out throughout this Decision document when discussing the detail of the proposed obligations and the associated justification (i.e. in the regulatory impact assessment contained in Chapter 7 of this Decision).

[53] Currently WORs are only observed on 1850, 1890 and 1800 NGN ranges.

[54] Currently WORs are not observed on 076 and 0818 NGN ranges.

[55] The DotEcon Report, Chapter 1, 2 and 5.

3.68 ComReg has assessed the wholesale measures for the relevant NGNs separately in Chapter 4 of this Decision. Section 4.6 of this Decision will look at the Freephone NGNs and Sections 4.3, 4.4 and 4.5 will look at the Non-Freephone NGNs, in particular the 0818 NGN range.

3.4 Regulatory framework

3.4.1 Legal basis

3.69 The Access Directive[56] (transposed by the Access Regulations) harmonises the way in which Member States regulate access to electronic communications networks and services as well as their interconnection[57]. The aim is to establish a regulatory framework, in accordance with the internal market principles, for the relationship between suppliers of networks and services that will result in sustainable competition, interoperability of electronic communications services and consumer benefits. ComReg's role, as a National Regulatory Authority, is to take all reasonable measures aimed at promoting competition in the provision of electronic communications services, ensuring that there is no distortion of competition in the electronic communications sector and removing remaining obstacles to the provision of those services at European level.[58]

3.70 The Framework Regulations and the Act set out the objectives assigned to ComReg, while the Access Regulations specifically address ComReg's functions and powers in relation to access and interconnection. In coming to this Decision, ComReg has also taken full account of these objectives and functions.

3.71 Regulation 6(1) of the Access Regulations provides that (acting in pursuit of its objectives[59]) ComReg is to encourage and, where appropriate, ensure, in accordance with the Access Regulations, adequate access, interconnection and the interoperability of services in such a way as to:

(a) promote efficiency,

[56] Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive) (2002/19/EC, OJ L 108, 24.4.2002, p. 7) as amended (**"the Access Directive"**).

[57] Article 1(1) of the Access Directive (Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities).

[58] See Case C-227/07, EU: C2008:620, *Commission v Poland*.

[59] Set out in Section 12 of the Act and Regulation 16 of the Framework Regulations (European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011).

(b) promote sustainable competition,

(c) promote efficient investment and innovation, and

(d) give the maximum benefit to end-users.

3.72 In this context, in accordance with Regulation 6(2) of the Access Regulations, ComReg may, to the extent that it is necessary to ensure end-to-end connectivity, impose obligations on undertakings that control access to end-users. Regulation 6(4) of the Access Regulations allows ComReg to exercise its powers on its own initiative where justified to secure the policy objectives and regulatory principles.[60] Any intervention must be done in accordance with the Access Regulations and the relevant procedures of the Framework Regulations.

3.73 The Universal Service Directive[61] also entitles ComReg to intervene where required to ensure effective access by end-users to numbers. Access by end-users to all numbering resources in the internal market is, as set out in Recital 38 of the Universal Service Directive, a *'vital pre-condition for a single market'* and should include Freephone and other NGNs. Regulation 23 of the Universal Service Regulations in particular empowers ComReg, where technically and economically feasible, to specify requirements for compliance by undertakings operating a public telephone network or providing publicly available telephone services to ensure that end-users are able to access and use services using NGNs within the European Union. Regulation 23 of the Universal Service Regulations transposes Article 28 of the Universal Service Directive which requires Member States to ensure that relevant national authorities "*take all necessary steps"* to ensure end-users' access to and use of NGNs.

3.74 In terms of the obligations and requirements which ComReg may impose under Regulation 6 and Regulation 23, they include, as clarified by the Court of Justice of the European Union in the *KPN v AMC* case[62], the types of obligations listed in Regulations 9 to 13 of the Access Regulations which ComReg may impose on operators who have not been designated with market power where they control access to end-users and the obligations are necessary and proportionate in the circumstances.

3.75 Accordingly, the obligations and requirements which ComReg may impose pursuant to Regulation 6(2) of the Access Regulations and Regulation 23(1) of the Universal Service Regulations include, among others, the full range of the obligations set out

[60] Set out in Section 12 of the Act and Regulation 16 of the Framework Regulations.

[61] Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) (2002/22/EC, OJ L 108, 24.4.2002, p. 51) as amended (**"the Universal Service Directive"**).

[62] See Case C-85/14, EU:C 2015: 610 KPN BV v ACM and Case C-397/14, ECLI:EU:C:2016:256 Polkomtel sp. z o.o. v. Prezes Urzedu Komunikacji Elektronicznej.

in Regulation 9 (transparency), Regulation 10 (non-discrimination), Regulation 11 (accounting separation), Regulation 12 (access to and use of specific network facilities) and Regulation 13 (price control) of the Access Regulations. According to Regulation 6(3) of the Access Regulations, any obligations imposed under Regulation 6(2) must be objective, transparent, proportionate and non-discriminatory.

3.76 Furthermore, in accordance with Regulation 8(6) of the Access Regulations any such obligations imposed must:

(a) be based on the nature of the problem identified;

(b) be proportionate and justified in light of the objectives laid down in Section 12 of the Act, and Regulation 16 of the Framework Regulations; and

(c) only be imposed following consultation in accordance with Regulations 12 and 13 of the Framework Regulations.

3.77 Chapter 4 of this Decision considers what obligations, if any, ought to be imposed in order to ensure that end-users are able to access NGNs and achieve maximum benefit from access and interconnection arrangements.

3.78 ComReg notes that a number of Respondents questioned the legal basis that ComReg is relying on, with some Respondents suggesting that it would have been more appropriate for ComReg to carried out a market review under Regulation 27 of the Framework Regulations and designate, where appropriate, relevant undertakings with SMP. The 2018 Consultation did consider the options available to ComReg and set out the view that intervention via Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations are the more effective and appropriate tools to address the problems identified (namely the potential for excessive WORs which ComReg considers constitute a barrier to effective end-to-end connectivity that, in turn, create a non-technical obstacle to end-users from being able to access NGNs and related services). ComReg is of the view that the proposed approach better achieves the objectives of the Access Regulations and Universal Service Regulations (as elaborated upon in Chapter 7 which contains the RIA and Section A.7.15 of Annex 7 which considers, in greater detail, the responses to the Consultation).

3.4.2 Consultation requirements

3.79 Regulation 12(3) of the Framework Regulations provides that, except in cases falling within Regulation 13(8) (i.e. exceptional cases involving urgency), before taking a measure which has a significant impact on a relevant market, ComReg must publish the text of the proposed measure, give the reasons for it, including information as to which of ComReg's statutory powers gives rise to the measure, and specify the period within which submissions relating to the proposal may be made by interested parties.

3.80 Regulation 12(4) states that ComReg, having considered any representations received under Regulation 12(3), may take the measure with or without amendment.

3.81 Regulation 13(3) of the Framework Regulations provides that, upon completion of the consultation provided for in Regulation 12, where ComReg intends to take a measure which falls within the scope of Regulation 6 or 8 of the Access Regulations, and which would affect trade between Member States, it shall make the draft measure accessible to the EC, BEREC and the NRAs in other Member States at the same time, together with the reasoning on which the measure is based. Regulation 13 implements Article 7 of the Framework Directive[63].

3.82 Apart from conducting a public consultation in accordance with Regulation 12 of the Framework Regulations, ComReg is also obliged to make its draft measures accessible to the EC, BEREC and the NRAs in other Member States pursuant to Regulation 13 of the Framework Regulations.

3.4.3 The NGN Decision

3.83 ComReg has previously consulted on and subsequently imposed a number of measures to address issues identified with NGNs at the retail level. This was done in the NGN Decision. The issues are discussed in the previous ComReg publications[64] but the core issues addressed are:

(a) End-users do not know how NGN calls are charged and/or do not know the different designation and tariffs of each of the five classes of NGNs. OOs do not announce tariffs for NGN calls by recorded message when a call is made. This retail price confusion discourages many end-users from calling NGNs;

(b) Many callers have a bundle[65] which includes minutes of free calls. Calls to NGNs are currently excluded from these bundles and are charged at ‘out-of-bundle’ prices.

(c) High NGN out-of-bundle prices deter a significant number of end-users from calling NGNs and/or cause a significant number of end-users to call NGNs only when absolutely necessary (i.e. when they have no alternative means of contact).

3.84 ComReg found that these factors caused a reduced level of end-user utilisation of the NGN platform and reduced the use of services provided by SPs through NGNs to the detriment of end-users and SPs.

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[63] Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (2002/21/EC, OJ L 108, 24.4.2002, p.33) as amended (**“the Framework Directive”**).

[64] ComReg Document Nos 17/70 and 18/65, the NGN Decision and the external reports and surveys appended to these documents.

[65] Please refer to footnote no. 3

3.85 To address these observed problems, ComReg decided to implement the following:

(a) **Geo-linking Condition** –from a retail pricing perspective, OOs are required to treat calls to NGN ranges where the caller pays (in whole or in part) (1890, 1850, 0818 and, 076) in the same way as they would treat calls to Geographic numbers. Specifically, calls to NGNs must be included in bundles of national rate call minutes and treated as in-bundle calls when dialled. If the call is out-of-bundle (i.e. the caller has no bundle of national rate call minutes or has exceeded their allocation of minutes) the charge incurred shall not exceed the National Geographic call rate.

(b) **NGN Consolidation** – ComReg decided to reduce the number of NGN ranges from five NGNs to two, namely 1800 and 0818, within a three year period.

3.86 The Geo-linking Condition and NGN Consolidation mean that, in future, there will be just two NGN ranges with principles that are clear and easily understood by callers and SPs:

(a) **0818 –** caller pays. A call is treated as an in-bundle call (if bundles minutes are available) or charged at a national call rate if out-of-bundle.

(b) **1800** – SP pays, caller pays nothing.

3.87 ComReg was of the view that this will result in a more efficient functioning of the NGN platform. The effective date for the Geo-Linking Condition was 1 December 2019 and NGN Consolidation will be in place from 1 January 2022.

3.88 In Sections 4.3 to 4.6 of this Decision, ComReg has outlined the impact of the NGN Decision on the NGNs in scope of this Decision (076; 0818; 1890; 1850 and 1800).

3.4.4 The Termination Markets Decisions

3.89 In May 2019, ComReg published ComReg Decision D10/19 (the **"Termination Markets SMP Decision"**) completing the review of the FVCT and MVCT markets. The Termination Markets SMP Decision imposed remedies on certain undertakings found to have SMP in FVCT and MVCT markets. A separate ComReg decision (ComReg Decision D11/19) published on 23 May 2019 further specified the cost orientation obligation that was imposed in those markets (the **"Termination Markets Pricing Decision"**).[66]

3.90 As outlined in the Consultation, the Termination Markets Decisions are relevant to this Decision on the basis that:

[66] The Termination Markets SMP Decision and the Termination Markets Pricing Decision are jointly referred to as '**the Termination Markets Decisions**'.

(a) Under the Termination Markets SMP Decision, the termination of calls to 076 numbers is now included in FVCT markets and a regulated fixed termination rate now applies for calls to 076 in the Termination Markets Pricing Decision.

(b) The Termination Markets SMP Decision noted that potentially, a Geo-linking Condition could have an effect on calls to 0818 numbers such that the termination of such calls may fall into the FVCT market. The Termination Markets SMP Decision noted that ComReg intends to consult on the possible inclusion of 0818 in FVCT markets within 6 months of the effective date of that Decision. Work is currently underway on this new consultation. It is expected to be finalised in Q1 2020.

(c) The pricing models used in the current Consultation and Decision to determine a cost based price for origination of calls to 1800 numbers are related to the models used to determine a cost based price for termination of calls in the Termination Markets Pricing Decision.

Chapter 4

Regulation of wholesale charges for NGNs

4.1 This Chapter considers the appropriate form of regulation of wholesale charges for NGNs including costing principles and the operators that are in scope, having regard to the NGNs' characteristics and current and future charging arrangements for each of the NGN ranges in scope.

4.2 The remainder of Chapter 4 is structured as follows:

(a) The types of regulatory intervention (Section 4.1)

(b) Wholesale Charges for NGNs (Section 4.2)

(i) Nomadic NGNs – 076 (Section 4.3)

(ii) Shared Cost NGNs – 1850 and 1890 (Section 4.4)

(iii) Universal Access NGNs – 0818 (Section 4.5)

(iv) Freephone NGNs – 1800 (Section 4.6)

(v) Costing principles (Section 4.7)

(c) Undertakings in scope (Section 4.8)

4.3 ComReg consulted on the issues outlined above and sought responses to Questions 1 to 7 set out in the Consultation in relation to these.

4.4 The Submissions received in response to the questions raised are summarised in Annex 7 of this Decision, Section A7.1 to A7.6 which includes ComReg's assessment of Respondents' views.

4.1 Types of Regulatory Intervention

4.5 In determining the appropriate proposed approach for each of the relevant NGNs, ComReg considered, in the 2018 NGN Consultation, the 2018 DotEcon Report and in the Consultation the means of intervention available to ComReg to address excessive WORs and their impact in order to ensure end-to-end-connectivity and that end-users are able to access and use services using NGNs.

4.6 In the 2018 NGN Consultation, ComReg listed a number of potential approaches, as follows:

(a) No Intervention

(b) Dispute Resolution

(c) Abuse of Dominance

(d) Negotiated Settlement

(e) Structural Change

(f) Guidance

(g) Price Control

4.7 For the reasons set out in the 2018 NGN Consultation, and in the Consultation, ComReg did not believe that any of the options listed at (a) to (f) above would be appropriate in order to address the problems identified by ComReg and ensure an effective use of the NGN platform to the benefit of End-users.

4.8 In summary, ComReg took the view that not intervening would not address the harm identified by ComReg. Availing of its Dispute Resolution powers put the matter in the hands of operators and did not allow intervention of ComReg's own volition, and may not allow an Industry-wide solution to be found. Reliance on competition law (Abuse of Dominance under Section 5 of the Competition Act 2002) would involve a difficult, lengthy and resource heavy process during which harm to consumers would continue. Voluntary action on the part of operators (a Negotiated Settlement) appeared unlikely, would be untimely and uncertain and was largely out of ComReg's hands. Similarly, the provision of guidance by ComReg as to the threshold which would trigger actual regulatory intervention would likely be ineffective in addressing the harm identified.

4.9 ComReg further took the view that imposing a structural change whereby rate setting responsibilities would be removed away from OOs to TOs, thereby removing's OOs ability to exploit their position of bottleneck control, would likely be effective but very burdensome and disproportionate for that reason. In particular, such a structural change would provide TOs, who compete for the provision of services to SPs, with the incentives to take SP interests into account when considering appropriate WORs and likely drive prices down. However the burden on all operators would be significant in terms of changes to payment/billing systems and the implementation would likely be costly and time consuming.

4.10 In the light of this, direct intervention by way of a price control (supported as the case may be by appropriate transparency obligations) appeared to be the most reasonable, appropriate and effective form of intervention. As outlined in the Consultation and the 2018 NGN Consultation, supported by the 2018 DotEcon Report, a price control allowed ComReg to address the matter of excessive WORs directly by applying a price control to all OOs in the market, while permitting for adequate cost recovery. This was also the position set out in the NGN Decision where ComReg was of the view that a price control for NGNs is justified, reasonable and proportionate as a means of addressing excessive WORs.

4.11 The Consultation also identified the options available to ComReg in terms of a price control for WORs for the relevant NGNs, where intervention was justified. They included Benchmarking, Retail Minus, Cost Orientation and Margin Squeeze. The Retail Minus and Margin Squeeze price controls were not considered to be appropriate given the complex nature of the NGN market and the difficulty in identifying specific NGN retail revenues. Benchmarking is only appropriate where there is insufficient cost data to allow an NRA to determine a suitably informed cost based price. By contrast, a cost-orientation obligation should allow an operator to ensure that its wholesale access prices recover no more than its actual incurred costs adjusted for efficiencies plus a reasonable rate of return.

4.12 In the Consultation ComReg was of the preliminary view that a wholesale price control for WORs should, where proportionate, address issues affecting SPs and operators that carry these NGN calls. ComReg remains of the view that wholesale intervention by way of a price control is necessary to ensure end-to-end connectivity for NGNs allowing continued and more effective access to SPs through the NGN platform. In combination with the measures in the NGN Decision, the price control measures would ensure that organisations are encouraged to use NGNs; that callers can access more SPs via NGNs; that all operators provide all callers with access to all NGNs and ultimately give the maximum benefit to end-users.

4.13 In making its final decision as regards the appropriate form of intervention and price control, ComReg has taken into account the characteristics of the NGNs concerned, whether or not they will remain available after 2021, and the least intrusive form of price control which will ensure that there are no obstacles to end-to-end connectivity and effective access and use of the NGN platform.

4.14 As part of the NGN Decision, ComReg also stated it would consider possible future measures to improve price transparency for NGN calls in order to better inform consumers of the cost/charging structure of NGNs and raise consumer awareness. From a wholesale perspective, ComReg, in the Consultation, was of the view that the proposed price control obligation should be supported by a transparency obligation including the obligation for each operator to make publicly available and keep updated on its website a “Reference Interconnect Offer (**“RIO”**) (setting out the contractual terms and conditions and technical basis on which SPs can obtain access to NGNs and associated facilities). ComReg also proposed to require operators to make FVCO and MVCO rates for 1800 and 0818 publicly available in an easily accessible manner on their website, and to ensure that wholesale invoices are sufficiently disaggregated, detailed and clearly presented so that that a TO or TrO can reconcile invoices to the published 1800 MVCO/FVCO Rates and 0818 MVCO/FVCO Rates. ComReg remains of the view that an obligation of transparency is required. However, ComReg has decided that instead of requiring publication of a RIO, it is sufficient to require OOs to publish and keep updated on their website their 1800 MVCO/FVCO Rates and (where applicable) 0818 MVCO/FVCO Rates with associated terms and conditions.

4.2 Wholesale charges for NGNs

4.15 The purpose of ComReg's review of NGNs is to ensure that there is end-to-end-connectivity for NGNs thus making sure that callers can continue to access SPs via an NGN platform with a transparent charging structure and that SPs will continue to offer services to callers using NGNs.

4.16 In the Consultation ComReg was of the preliminary view that a wholesale price control for WORs for calls to the relevant NGNs should address issues affecting SPs and operators that carry these NGN calls. ComReg remains of this view. In proposing these wholesale measures, in combination with the measures in the NGN Decision, it is hoped that ComReg will achieve the objectives that organisations are encouraged to use NGNs; that callers can access more SPs via NGNs; that all operators provide all callers with access to all NGNs and ultimately give the maximum benefit to end-users.

4.17 In accordance with Regulation 23 of the Universal Service Regulations 2011 ComReg may 'specify requirements' to ensure that end-users are able to access and use services using NGNs. ComReg's role is to encourage and where appropriate, ensure adequate access, and interconnection, and interoperability of services while promoting efficiency, sustainable competition, and giving the maximum benefit to end-users. ComReg may exercise its powers, under Regulation 6 of the Access Regulations, where justified, to secure its policy objectives and regulatory principles as set out in the Section 12 of the Act and Regulation 16 of the Framework Regulations. ComReg considered that in the context of the Consultation and this Decision, the primary objectives being addressed are to maximise the benefit to end-users and to promote competition by, among other things, ensuring all users derive benefit in terms of choice, price and quality.

4.18 In the Consultation, ComReg considered the wholesale charges for calls to 076, Shared Cost (1890 and 1850), 0818 and 1800 numbers under a number of headings. For each number type ComReg considered the following:

(a) Current charging arrangements – At Section 3.2.7 of the Consultation ComReg described how each operator in the NGN Value chain can recover the incremental cost of an NGN call through charges levied at the wholesale level while some operators may also recover at the retail level. For calls to each number type in scope, ComReg then described the wholesale and retail level charging arrangements in the context of current rules in place or industry practices.

(b) Future charging arrangements – ComReg then described the future wholesale and retail level charging arrangements for calls to each of the relevant NGNs. This was done in the context of future rules or industry practices.

(c) Potential harm – ComReg then described potential harm in respect the future charging arrangements for each of the relevant NGNs and detailed how any proposed measures would align with ComReg's statutory objectives.

(d) Preliminary Conclusions – ComReg then described its preliminary conclusions in respect of the type of action (if any) in relation to each of the relevant NGNs.

4.2.1 ComReg's Assessment of Question 1 and Question 2

4.19 In the Consultation ComReg asked interested parties if they agreed with ComReg's description of the current and future charge flows in Sections 4.6 to 4.9 and the associated text, and asked that if Respondents consider that the analysis is incorrect that a detailed description be provided.

4.20 Six Respondents replied directly to this question.

4.21 Three Respondents agreed. Three Respondents were in overall agreement but provided some comments.

4.22 Issues were raised regarding labelling errors/clarifications on some of the diagrams contained within Chapter 4 of the Consultation. There was also comments from Respondents in relation to transit issues.

4.23 ComReg's assessment of the issues raised and responses are detailed in Annex 7, paragraphs A7.14 to A7.42 of this Decision.

4.2.2 ComReg's Final Position

4.24 ComReg has reviewed all diagrams contained within Chapter 4 of the Consultation. These diagrams have been updated, where necessary, and the updated versions can be found in Sections 4.3 to 4.6 of this Decision document.

4.25 At paragraphs A7.21 to A7.42 of Annex 7 ComReg set out its position regarding the operation of the transit market which can be summarised as follows:

(a) The transit market is not subject to ex-ante regulation therefore transit arrangements and rates are the outcome of commercial agreements in a competitive market.

(b) ComReg supports the proposed voluntary change to 076 transit arrangements and any similar change to 0818 in the future which will result in Transit charges been charged to the OO rather than the TO

(c) For 1850 and 1890, it is ComReg's position that it is reasonable for transit to continue to follow the arrangements in place now (i.e. Transit charges continue to be charged to the TO) until these number ranges are withdrawn.

(d) For 1800 it is ComReg's position that it is expected that there will be no change to the current charging arrangements for transit for 1800 in future (i.e. Transit charges continue to be charged to the TO).

4.3 Nomadic numbers – 076

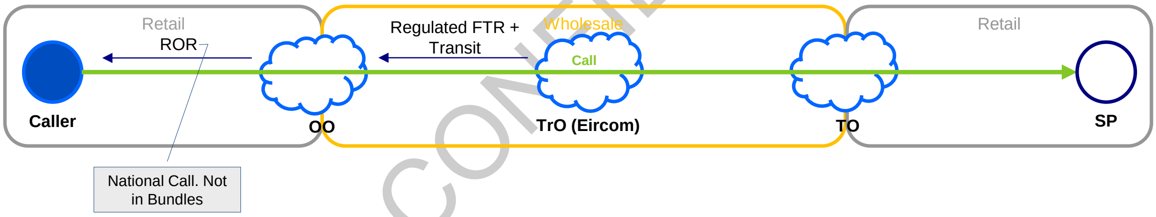
4.3.1 Current charging arrangements for calls to 076 numbers

4.26 In the Consultation ComReg described the wholesale and retail charging arrangements for calls to 076 numbers.

4.27 The characteristics of calls to 076 numbers follow the application of the CPP principle. According to the 2018 Numbering Conditions, the cost of calling such Nomadic numbers from within the State shall not exceed the originating undertaking's standard rate for a call of the same duration to a geographic number.

4.28 Figure 6 below shows the flow of wholesale and retail level charges for an off-net 076 NGN call. More detailed figures showing both charges and payments can be found in Annex 2.

Figure 6: Charges for 076 (Currently)



4.29 Calls to 076 NGNs follow the CPP principle. In terms of retail charges, the OO charges the caller and the SP pays nothing. The OO charges the caller a ROR at a rate no greater than a national call rate. Figure 6 above reflects the arrangements that existed until the introduction of the Geo-linking Condition on the 076 NGN range which came into effect on 1 December 2019. Figure 6 also assumes that the direction of Transit charging for 076 NGNs has changed to levy Transit charges on the OO as opposed to the TO. Eircom has noted that this change is effective from 1 December 2019.

4.30 At the wholesale level, it is relevant to note that Eircom is used by many OOs (Mobile and Fixed) as a TrO for calls to 076 NGNs. The Eircom STRPL[67] provides details on the payment flow for calls to 076 NGNs where Eircom is the TrO.

4.31 In the Eircom STRPL charges for calls to "VoIP" (otherwise known as calls to the 076 NGN range) are detailed at Table 208. The rates shown in Table 208 are applicable to all operators:

[67] The Eircom STRPL Version 159, 7 August 2019.

(a) 0.057 c/minute for calls to 076 at peak times;

(b) 0.057 c/minute for calls to 076 at off-peak times;

(c) 0.057 c/minute for calls to 076 at weekends.

4.32 The Eircom STRPL notes that:

> *"Table 208 list* [sic] *the payment to the terminating Operator for the services listed in that table. The same charges in Table 208 are levied by open eir on the originating operator for the services listed in that table. open eir then levies the transit fee in Table 002 on the terminating operator for the call. Rates are quoted in Euro cent"*

4.33 Table 002 in the Eircom STRPL notes that Transit fees are now detailed in Eircom's Commercial Interconnect Services Price List (**"Eircom CISPL"**). Eircom's National Transit fees are set out in Schedule 005, Table 1 of the Eircom CISPL[68] as follows:

(a) 0.345 c/minute at peak times;

(b) 0.190 c/minute at off-peak times;

(c) 0.166 c/minute at weekends.

4.34 Based on the Eircom STRPL, for calls to 076 transiting Eircom at peak times:

(a) the OO is charged 0.408 c/minute by Eircom (transit at 0.345 c/minute plus the 0.057 c/minute);

(b) Eircom retains 0.345 c/minute for transit and;

(c) Eircom pays the TO 0.057 c/minute.

4.35 As the same rate of 0.057 c/minute is charged by Eircom to the OO and paid by Eircom to the TO, it could be considered to be equivalent to a Regulated FTR. However, as set out in the Eircom STRPL Table 208, the same rate applies to all operators. Therefore the rate levied by Eircom on the OO and paid by Eircom to the TO would seem to be independent of any relevant WTR that the TO charges for 076 termination.

4.36 The Consultation also noted that an unregulated Transit fee is charged to the TO. Since the Consultation was issued the Regulated FTR became effective and Eircom has indicated they will change the direction of Transit charging for 076 NGNs to levy Transit charges on the OO as opposed to the TO from 1 December 2019. This change was voluntary but had been predicted by ComReg as shown in Figure 8 of the Consultation.

4.37 Therefore, in terms of Wholesale level charges for calls to 076 NGNs, where Eircom is the TrO (i.e. for most 076 calls), the OO will be charged a rate that includes Transit and a charge that is equal to the Regulated FTR by Eircom. Eircom will then make a payment to the TO equal to the Regulated FTR.

[68] The Eircom CISPL Version 31, 1 December 2019.

4.3.2 Future charging arrangements for calls to 076 numbers

4.38 The Consultation identified that there were two ComReg decisions that had the potential to impact the charging arrangements for calls to 076 numbers in the future:

(a) The introduction of the Geo-linking Condition in D15/18.

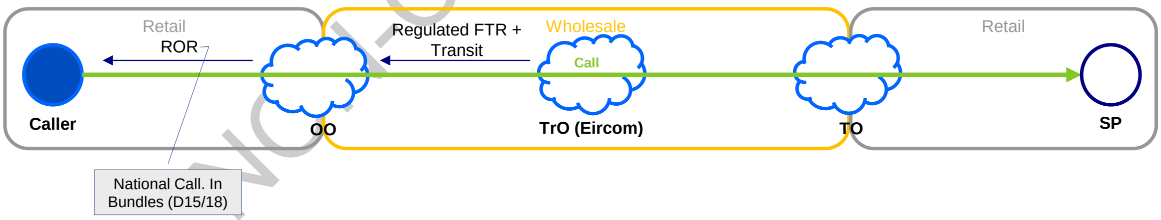
(b) The Termination Markets SMP Decision.

4.39 As previously noted in the Consultation and again in paragraph 4.29 of this Decision document, the characteristics of calls to 076 NGNs, in particular the application of the CPP principle, are broadly similar to those of Geographic numbers. Under the CPP principle, the caller pays to make the call. The operative retail relationship is that of the charges and payments between the caller and the OO. The retail relationship between the SP and the TO is only relevant, insofar as the TO must not charge the SP to receive the call.

4.40 At the time of the Consultation, the Termination Markets Decisions had not yet been imposed and the Regulated FTR was not in effect for 076 NGNs. Additionally, at the time of the Consultation the transit charges for 076 calls transiting Eircom were charged to the TO. As noted in Section 4.3.1, a Regulated FTR is now in effect for 076 NGNs and the transit charges for 076 calls transiting Eircom have been the current arrangements are shown in Figure 6 above.

4.41 In terms of the differences between the current and future arrangements for charges for calls to 076 NGNs, the final remaining change was the coming into effect of the Geo-linking Condition in the NGNs Decision on 1 December 2019.

Figure 7: Future arrangements for charges for calls to 076 numbers (post-December 2019)



4.3.3 Potential harm in relation to charges for calls to 076 numbers

4.42 In the Consultation, ComReg considered that the Geo-linking Condition may result in changes by OOs at the retail level, by way of increase in bundle prices or decrease in bundle minutes, or increase out-of-bundle rate for National Geographic calls. At the wholesale level, ComReg identified a number of scenarios where wholesale level charges for calls to 076 NGNs could be introduced. ComReg in particular was concerned that OOs may introduce a WOR (where there is currently none) with the view to limit the revenue impact of Geo-linking and/or respond to excessive wholesale charges (WTRs).

4.43 However, it was ComReg's preliminary view that, in the event that WTRs for calls to 076 numbers were subject to a cost orientation obligation, OOs would not introduce WORs for calls to 076 numbers. This view was based on current OO behaviour for calls to Geographic numbers. For calls to Geographic numbers OOs are charged a regulated termination rate and recover origination costs from retail bundle subscriptions or out-of-bundle call rates without charging a WOR.

4.44 At the time of publication of the Consultation in terms of a TO, an unregulated WTR was being charged for calls to 076 numbers. It was ComReg's view at the time that, on the basis that WTRs for calls to 076 numbers would be subject to a regulated cost based termination rate, there would be no potential for harm caused by excessive WTRs. Calls to 076 are now subject to a Regulated FTR effective from 1 August 2019.

4.3.4 Preliminary Conclusion on wholesale charges for calls to 076 numbers

4.45 It was ComReg's preliminary view in the Consultation that the appropriate price control option in relation to the 076 NGN range is Regulatory Forbearance. There is no further wholesale measure required. The presence of wholesale termination rate regulation coupled with the retail measures introduced (which include NGN Consolidation from five to two NGN ranges which means that the 076 NGN range will ultimately cease in 2021) as part of the NGN Decision are considered to be sufficient to allow OOs and TOs cover their wholesale costs. The risks associated with OOs taking advantage of their bottleneck power will be constrained by the existing NGN Decision and the presence of a Regulated FTR for this NGN range.

4.46 ComReg considered that this position meets its statutory objectives, and in particular the objective to ensure end-user benefit is maximised.

4.47 ComReg has included worked examples of current and proposed charges and payment flows for 076 NGNs at Annex 2, paragraphs A2.1 to A2.2 of this Decision.

4.3.5 ComReg's Assessment of Respondents views to Question 3

4.48 In the Consultation ComReg asked interested parties whether they agreed with the preliminary conclusion that Regulatory Forbearance was the appropriate price control option in relation to the 076 number range.

4.49 Seven Respondents replied directly to this question. Their views are set out in Annex 7, paragraphs A7.44 to A7.59 of this Decision.

4.50 Five Respondents agreed with the proposal. One Respondent while in agreement noted concern on imposing the Regulated FTR from 1 Aug 2019 until the number range is withdrawn in 2021 saying that it will not allow them to recover the Long Run

Incremental Cost (**"LRIC"**) of the network elements used, thus stranding costs until withdrawal. ComReg's assessment of this issue and response is detailed in Annex 7, paragraphs A7.52 to A7.57 of this Decision.

4.51 One Respondent gave a general comment that the 076 number range should not be withdrawn.

4.52 One Respondent did not agree with the proposal due to concerns with the risk of operators imposing high WORs over the next two years. ComReg's assessment of this issue and response is detailed in Annex 7, paragraphs A7.58 to A7.62 of this Decision.

4.3.6 ComReg's Final Position

4.53 While noting concerns raised, ComReg is of the view that no LRIC costs have been omitted in the derivation of the LRIC based cost base, and the risk of excessive WORs is limited in the short term, and therefore the proposal for 076 remains unchanged.

4.54 Having considered the view of Respondents, ComReg's final position is that Regulatory Forbearance, i.e. no wholesale price control, is the appropriate price control option for calls to 076.

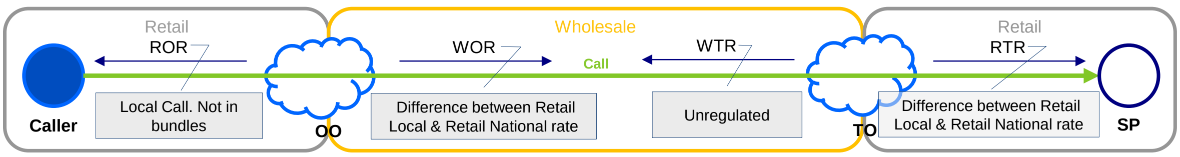
4.4 Shared Cost numbers – 1850 and 1890

4.4.1 Charging arrangements for calls to Shared Cost numbers before 1 December 2019

4.55 Shared Cost numbers are defined in the 2018 Numbering Conditions as those NGNs with a prefix of 1890 or 1850.

4.56 As noted previously in Section 3.2.3 of the Consultation, up to 1 December 2019, the 1850 and 1890 NGN ranges allowed a caller to pay a retail rate to the OO at the rate for a Local Geographic call for what would otherwise have been a National Geographic call. The difference between the retail Local Geographic call charge and the retail national Geographic call charge was instead charged to the SP. This arrangement 'shared the cost' of a national rate call between the caller and the SP. More detailed figures showing both charges and payments can be found in Annex 2.

Figure 8: Charges for Shared Cost calls (currently)



4.57 As outlined in the Consultation, Shared Cost numbers are a combined application of the CPP and RPP principles for a national rate call. The Calling Party Pays the OOs Local retail rate for the call, the Receiving Party Pays the remainder.

4.58 The caller and the OO have a retail relationship, meaning that the caller can easily be charged by the OO for the Local part of the call. While it is possible that the SP may be on the same network as the caller (i.e. both the caller and the SP having a retail relationship with the OO, or an on-net call) this is not always the case.

4.59 For the OO to charge the SP for the remainder of the off-net Shared Cost call, a charge at the wholesale level is required from the OO, ultimately to the TO. The TO will then pass this wholesale level charge through to the SP as a retail charge to receive the call.

4.60 Shared Cost is relevant at the retail level in that it dictates the arrangements for caller and SP charges. However, the RPP element of a Shared Cost call results in a charge at the wholesale level. Therefore, much like the retail level CPP and RPP principles, Shared Cost has a wholesale level impact and this was considered in the Consultation.

4.61 As outlined in the Consultation, the maximum retail rate that the OO could charge the caller for a Shared Cost Call was a Local rate. On 1 December 2019, this was increased to a National rate.

4.62 In theory, the sum of the retail and wholesale rates levied by the OO should equal the rate for a National Geographic call, however this is not typically the case. For example, one Irish mobile operator has a published retail rate for calls to Irish numbers of 38 c/minute. Calls to 1890 for all callers are charged as out-of-bundle at a minimum of 29.48 c/minute, the operator also charges 13 c/minute to the TO in the form of a WOR[69] (the TO will pass this 13 c/minute through as part of the retail charge to the SP). In total, the operator receives a minimum of 42.48 c/minute for calls to 1890. Using the cost of origination for 1800 discussed in Chapter 6 of this Decision as a guide, the cost incurred by the mobile operator to originate these 1890 calls is approximately 1.5 c/minute.

4.4.2 Current charging arrangements for calls to Shared Cost numbers

4.63 The Consultation identified that the introduction of the Geo-linking Condition on 1 December 2019 will have two effects in relation to Shared Cost:

(a) Calls to 1890 or 1850 must be treated as in-bundle calls where available.

(b) Out-of-bundle maximum rate to the caller increases from retail Local rate to retail National rate.

[69] The rate origination of calls to 1890 is published in the Eircom STRPL.

4.64 ComReg considered that the Geo-linking Condition may result in changes by OOs at the retail level, by way of increase in bundle prices or decrease in bundle minutes in the same way as for 076 NGNs and by way of increase out-of-bundle rate for National Geographic calls. ComReg also identified potential changes at the wholesale level.

4.65 The increase from retail Local rate to National rate means that an OO may now recover the full costs of a national call directly from the caller so that at the wholesale level, an OO need not levy a WOR to recover the costs. The “Shared Cost” element of the 1850 and 1890 NGNs can potentially be removed from the NGN value chain. The maximum WOR for a Shared Cost call is the difference between the OOs retail national rate and the retail Local rates.

4.66 However, the Geo-linking Condition also means that OOs will receive less retail revenue from Shared Cost calls on the basis that fewer callers will be subject to high out-of-bundle rates.

4.67 In the Consultation document ComReg included worked examples of current and proposed charges and payment flows for 1890 NGNs. These have been updated and are included at Annex 2 of this Decision document.

4.68 It should be noted that, by setting the maximum rate that the OO may charge the caller, the Geo-linking Condition has effect at the retail level only. The Geo-linking Condition has no effect on WORs. An OO that complies with the Geo-linking Condition may still charge a WOR for calls to 1850 and 1890 NGNs at any rate it chooses.

4.4.3 Potential wholesale harm in relation to charges for calls to Shared Cost numbers

4.69 In order to counter retail revenue loss on this range OOs may choose to increase WORs for calls to Shared Cost numbers rather than taking action at the retail level. In particular it appears more likely that an OO would chose to increase WORs for calls to Shared Cost numbers in response to the Geo-linking Condition rather than taking action at the retail level. However, unlike NGNs which follow the CPP principle (076 and 0818), Shared Cost numbers are a hybrid of CPP and RPP principles meaning that any increases in WORs would be passed through to SPs by the TO as an increased rate.

4.70 As outlined in the Consultation TOs subject to increased WORs would receive reduced net revenue, potentially not recovering their cost of termination. TOs would then have the choice to increase Shared Cost WTRs and/or; pass the WOR increase through to the SP. Increases in WTRs for Shared Cost would potentially result in the same cyclical rate increases between WTRs and WORs as outlined in the Consultation and at 4.103 to 4.106 of this Decision document.

4.71 The Consultation identified that if the measures proposed in the Consultation for the 1800 and 0818 NGN ranges are implemented, these two ranges will potentially offer

SPs a lower Retail Termination Rate (**"RTR"**). These ranges will therefore be more attractive to SPs and, given that these two ranges will remain after 2021 these potentially lower RTRs will further encourage SPs to move from Shared Cost NGNs to either 1800 or 0818 NGNs.

4.72 ComReg acknowledged in the Consultation that the wholesale approach needs to balance potential short term harm that may be caused to SPs who may find that their costs increase but this is balanced by the fact that the NGN consolidation has been flagged three years in advance of its implementation. ComReg was therefore of the preliminary view in the Consultation that no wholesale measure is required for the 1850 and 1890 NGN ranges.

4.4.4 Preliminary conclusion on wholesale charges for Shared Cost numbers

4.73 Having identified potential harm at the wholesale level, in the Consultation ComReg recognised that there are high WORs for calls to Shared Cost NGNs but was of the preliminary view that the appropriate option in relation to the Shared Cost ranges is Regulatory Forbearance. There is no further wholesale measure required. This is on the basis that the Shared Cost NGN ranges will ultimately cease at the end of 2021. Should these excessive WORs continue (or increase), SPs could avoid these high Shared Cost WORs by moving to NGNs with lower retail charges (1800, 0818).

4.74 ComReg considered that this position meets its statutory objectives, and in particular the objective to ensure end-user benefit is maximised. Any excessive WORs for these Shared Cost NGNs will only be temporary in nature as these NGN ranges are due to be withdrawn and in the interim will encourage SPs to migrate to either 1800 or 0818.

4.75 ComReg noted in the Consultation that one FNO has indicated that it will begin charging a higher WTR for termination of Shared Cost Calls to one particular MNO. These higher WTRs were not charged previously and commenced in May 2019. The FNO in question has noted that the new WTR that will be levied on the MNO has been introduced at a specific rate that counteracts the MNO's recent increase in the Shared Cost WOR. ComReg continues to monitor developments.

4.4.5 ComReg's Assessment of Respondents' views to Question 4

4.76 In the Consultation ComReg asked interested parties whether they agreed with the preliminary conclusion that Regulatory Forbearance was the appropriate price control option in relation to the Shared Cost number ranges.

4.77 Seven Respondents replied directly to this question

4.78 Four Respondents agreed with the proposal. While in agreement one Respondent noted that it considers that ComReg is optimistic in the assumption that customers can quickly and easily move to 1800/0818. It considers that while some customers will be able to move easily others will not. This was also raised by other Respondents. ComReg's assessment of this issue and response is detailed in Annex 7, paragraphs A7.73 to A7.78 of this Decision.

4.79 Three Respondents did not agree with the proposal. The main issues raised were in relation to migrations, harm arising due to timing of wholesale measures and the possibility of limited continuation of 1850. ComReg's assessment of these issues and response are detailed in Annex 7, paragraphs A7.69 to A7.92 of this Decision document.

4.4.6 ComReg's Final Position

4.80 On the issue of migrations while ComReg accepts that there may be issues that arise in successfully migrating SPs away from those number ranges that are to be withdrawn ComReg does not consider that any further measures need to be provided as part of this Decision. ComReg will continue to engage with industry.

4.81 In relation to issues raised around the timing of retail and wholesale measures while ComReg notes the concerns raised it is also of the view that, if the WORs for 1850/1890 continue to be excessive or increase, SPs have the option to avoid these high Shared Cost WORs by moving to NGNs with lower retail charges (1800, 0818). In any event we would reiterate that any excessive WORs for these Shared Cost NGNs will, only be temporary in nature as these NGN ranges are due to be withdrawn and, in the interim will encourage SPs to migrate to either 1800 or 0818.

4.82 Some Respondents to the Consultation commented on recent proposals by some national utilities to continue their 1850 numbers following general closure of the range in December 2021. ComReg is currently engaging with the affected utility companies and with the Commission for Regulation of Utilities in relation to this matter, and will ultimately progress the matter with industry through the industry NGN Working Group.

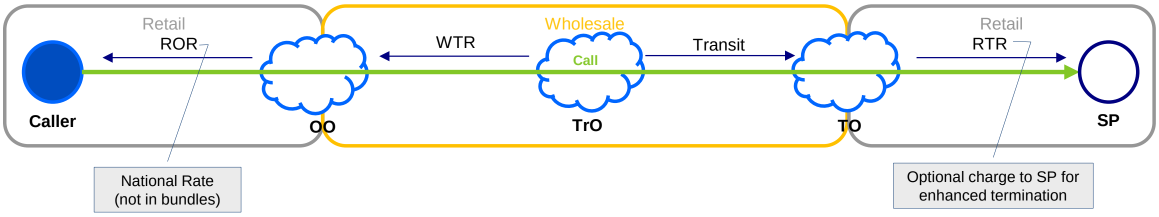
4.83 Having considered the views of Respondents, ComReg's remains of the view that Regulatory Forbearance, i.e. no wholesale price control, is the appropriate price control option for the Shared Cost number ranges.

4.5 Universal Access numbers - 0818

4.5.1 Current charging arrangements for calls to 0818 numbers

4.84 Figure 9 below shows the flow of wholesale and retail level charges for an off-net 0818 NGN call. The 0818 NGN range is currently operating under a wholesale payment flow that stems from the TrO. More detailed figures showing both charges and payments can be found in Annex 2.

Figure 9: Charges for 0818 (Currently)



4.85 As outlined in the Consultation calls to 0818 follow the CPP principle. In terms of charges at the retail level, the OO charges the caller, the TO does not charge the SP. The OO charges the caller a ROR no greater than a national call rate. Figure 9 above reflects the arrangements, before the Geo-linking Condition on 0818 numbers came into effect on 1 December 2019. SPs may make use of enhanced termination services (e.g. intelligent routing). If these services are used, the TO will charge the SP.

4.86 At the Wholesale level, the OO is subject to a WTR. As with 076, Eircom is used as a TrO for many OOs (Mobile and Fixed) for calls to 0818 NGNs. The Eircom STRPL details the payment flow for calls to 0818 NGNs where Eircom is the TrO.

4.87 In the Eircom STRPL[70] Charges for calls to "Universal Access" (0818) are detailed at Table 202. The rates shown in Table 2028 are applicable to all operators:

(a) 4.62 c/minute for calls to 0818 at peak times

(b) 2.58 c/minute for calls to 0818 at off-peak times

(c) 2.04 c/minute for calls to 0818 at weekends

4.88 The Eircom STRPL notes that:

> *"Table 202 list* [sic] *the payment to the terminating Operator for the services listed in that table. The same charges in Table 202 are levied by open eir on the originating operator for the services listed in that table. open eir then levies the transit fee in Table 002 on the terminating operator for the call. Rates are quoted in Euro cent"*

4.89 Table 002 in the Eircom STRPL notes that Transit fees are now detailed in the Eircom CISPL. Eircom's National Transit fees are set out in Schedule 005, Table 1 of the Eircom CISPL as follows:

(a) 0.345 c/minute at peak times

(b) 0.190 c/minute at off-peak times

(c) 0.166 c/minute at weekends

[70] The Eircom STRPL Version 159, 7 August 2019.

4.90 Based on the Eircom STRPL, for calls to 0818 transiting Eircom at peak times:

(a) the OO is pays 4.62 c/minute to Eircom;

(b) Eircom pays the TO 4.62 c/minute and;

(c) the TO pays 0.345 c/minute to Eircom for transit (TO therefore receives 4.275 c/minute (4.62 c/minute - 0.345 c/minute for transit))

4.91 As the same rate of 4.62 c/minute is charged to the OO and then paid to the TO, this rate could be considered to be equivalent to a WTR. However, as set out in the Eircom STRPL Table 202, the same rate applies to all operators. Therefore the rate levied by Eircom on the OO and paid by Eircom to the TO is independent of any relevant WTR that the TO charges for 0818 termination. It is also relevant to note that an unregulated Transit rate is charged to the TO. While the transit charge for Geographic calls and 0818 is the same, transit of Geographic calls is charged to the OO whereas transit of 0818 calls is charged to the TO.

4.92 Therefore, in terms of Wholesale level charges for calls to 0818 NGNs where Eircom is the TrO (i.e. for most 0818 calls), the OO is subject to a form of WTR set by Eircom. The charge levied on the OO is not set by the TO and is fixed, irrespective of the WTR levied by the TO. Eircom also levies a fixed unregulated Transit charge on the TO. This Transit charge applies to all operators, irrespective of the OO or TO originating or terminating the call.

4.5.2 Future charging arrangements for calls to 0818 numbers

4.93 In the Consultation ComReg noted that the wholesale level charges faced by OOs for calls to 0818 numbers are higher than the Regulated FTR for FVCT as described in ComReg Decision D12/12.[71]

4.94 As outlined in the Consultation unlike FVCT for 076 numbers, FVCT for 0818 numbers will not be directly impacted by the Termination Markets Decisions. In paragraph 5.61 of the Termination Markets SMP Decision ComReg concluded that FVCT for 0818 numbers should not be included in the relevant termination markets. Consequently, the associated termination rate is not regulated.

4.95 The reasons for not including 0818 in relevant termination markets were that, compared to typical Geographic Numbers, SPs receiving calls on 0818 numbers are likely to be more incentivised to have greater awareness of the WTR charged by their TO, as 0818 numbers provide SPs with indirect revenue-generating or customer management opportunities.

4.96 In particular, SPs are more likely to choose TOs with a lower WTR or switch away from TOs seeking to impose an increase in the WTR for calls to 0818 numbers on

[71] ComReg Decision D12/12, Document 12/125, “Mobile and Fixed Voice Call Termination Rates in Ireland”, 21 December 2012(**“the 2012 Pricing Decision”**).

the basis that a high WTR (or a WTR increase) may be factored into the ROR levied by the OO on the caller. Higher RORs faced by callers would impact negatively on the SPs' revenue generating or customer management potential. In the Termination Markets SMP Decision ComReg concluded that FVCT to 0818 numbers is subject to sufficiently different competitive characteristics to FVCT to Geographic Numbers more generally, and is therefore excluded from the Relevant FVCT Markets(s).

4.97 As outlined in the Consultation ComReg recognises that the NGN Decision will change how callers are charged by OOs for calls to 0818. With the introduction of the Geo-linking Condition, a high WTR (or a WTR increase) by the TO for calls to 0818 is less likely to result in a higher ROR experienced by the caller, as many callers will avail of bundled minutes for calls to 0818 under the Geo-linking Condition in the NGN Decision. SPs' sensitivity to high (or increasing) WTRs levied by TOs will be reduced as a result.

4.98 Consequently it was identified in the Consultation that a possible outcome of the Geo-linking Condition is that the competitive characteristics of the 0818 number range may more closely resemble those of Geographic Numbers and 076 numbers. ComReg noted in the Consultation that it intended to consult on whether fixed voice call termination of calls to 0818 numbers fall within the definition of the Relevant FVCT Markets. Work has commenced on this project and the new consultation is expected Q1 2020.

4.99 It is important to note that even in the presence of a Regulated FTR being charged an OO will still retain their bottleneck control on origination of calls to 0818 NGNs. OOs could exploit this control by charging a WOR in the knowledge that TOs could not respond by increasing termination rates above the Regulated FTR. For this reason the measure being imposed under this Decision will remain in place regardless of the outcome of the new market review. In the event that a future consultation concludes that FVCT for calls to 0818 numbers does fall within the definition of the Relevant FVCT Markets, a Regulated FTR may be imposed in respect of these types of calls. As a result the charge flow for 0818 will then resemble that of a Geographic call and be subject to the Regulated FTR. The potential for an excessive termination rate is eliminated as there will be no difference between the 0818 WTR and the Regulated FTR.

4.100 In the event that a consultation concludes that calls to 0818 numbers do not fall within the definition of the Relevant FVCT Market, no cost based WTR will be imposed. The measure being imposed under this Decision will remain in place.

4.5.3 Potential wholesale harm in relation to charges for calls to 0818 numbers

4.101 As noted in the Consultation, as the result of the Geo-linking Condition, OOs could exploit their bottleneck control to levy an origination charge (WOR) on the TO for the origination of 0818 calls. This was previously referred to in the NGN Decision as the "waterbed effect[72]".

4.102 Currently WORs are only observed on number ranges where there is a full RPP principle (1800) or partial RPP principle (Shared Cost). They are not observed on CPP principle numbers. WORs on CPP principle numbers are generally not observed because, under the CPP principle (applicable to 0818), the receiving party (in this case the SP) is not charged for the call. Any WOR levied by the OO on the TO could not be passed to the SP and would result in a net reduction on the WTR that the TO received. However, while no WORs are currently charged on 0818 numbers, operators are not prohibited by regulation from imposing WORs on CPP principle numbers.

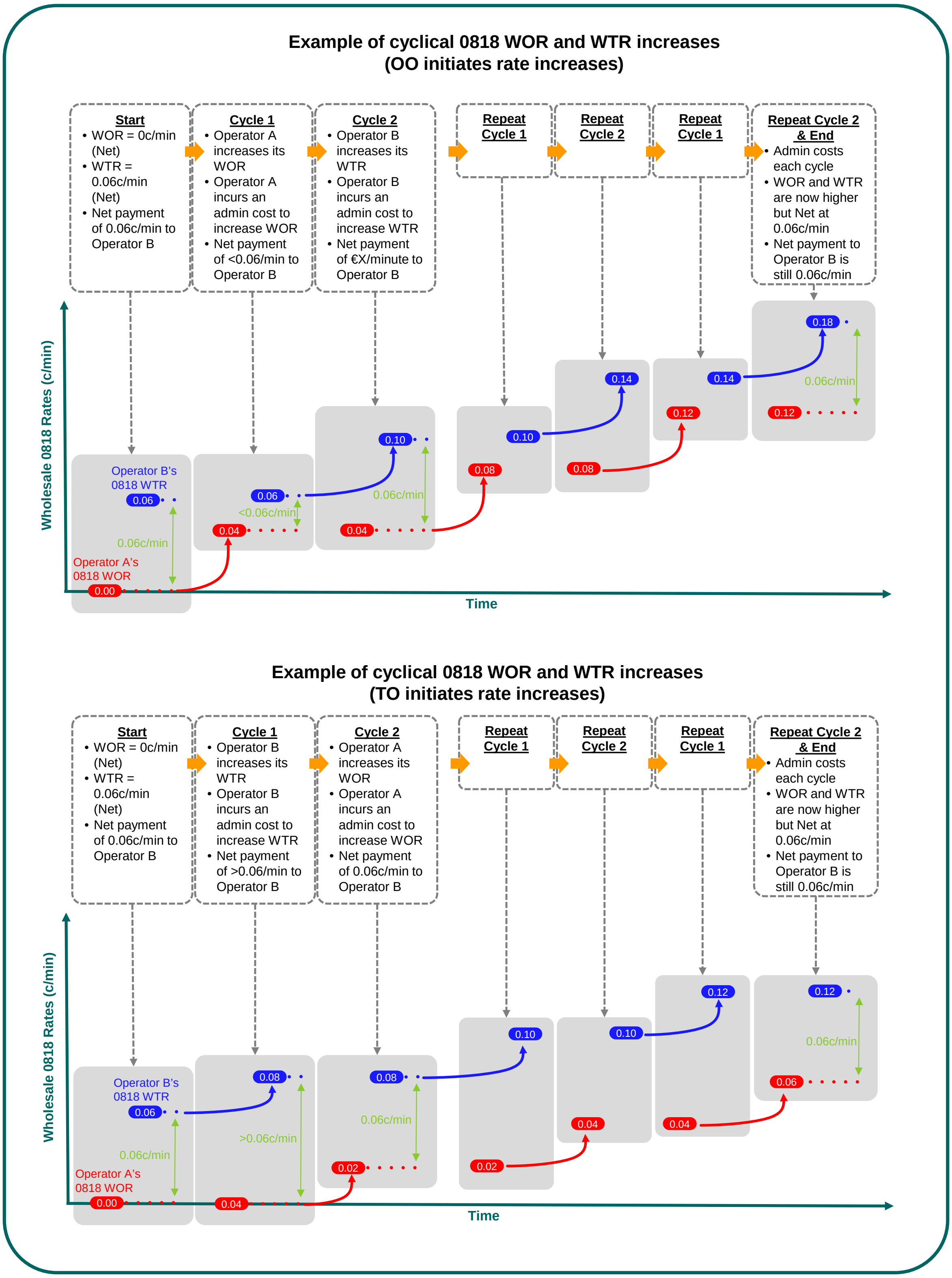
4.103 If a WOR was introduced by an OO (Operator A) in respect of 0818 numbers, the TrO would simply pass this new WOR through to the TO (Operator B). In addition to its WTR, Operator B would now also have to pay out a WOR. In this case, Operator B will now incur a net payment equal to its WTR minus the WOR. Given that Operator B cannot charge the SP, as 0818 is a CPP principle number, Operator B would have no choice but to increase the WTR by the same amount as Operator A's WOR.

4.104 This creates a feedback loop where a new WOR (or a WOR increase) by Operator A results in a corresponding increase in the WTR that Operator A must pay.

4.105 The net effect of any cyclical WOR/WTR increases for the both Operator A and Operator B is zero. However, both the Operator A and Operator B will incur operational costs to make the necessary system or contract changes required to effect the continually changing inter-operator wholesale rates with no net benefit to either party. Examples of cyclical increases in wholesale 0818 rates is shown in Figure 10.

[72] See paragraphs 48 to 52 and 297 to 301 of the NGN Decision.

Figure 10: Examples of cyclical 0818 Wholesale rate increases



4.106 The above considers a theoretical binary system, where Operator A introduces a WOR for CPP calls terminated by Operator B. Further complexity is introduced if Operator B mimics operator A and introduces a WOR for any CPP calls it originates. Both operators must now incur operational costs to manage WOR WTR increases. In reality there are multiple operators present and, to a greater or lesser extent, all will originate and terminate CPP calls. If all operators mimic the behaviour of Operator A, the operational cost for all operators would increase. Operator A would not only have to manage WOR increases; it would have to manage multiple responsive WTR increases for any call termination in reaction to the new or increasing WORs of Operators B, C and D.

4.107 Ultimately, this would discourage TOs to offer 0818 services to SPs. The potential for WORs therefore constitutes a barrier to effective end-to-end connectivity which in turn creates a non-technical obstacle to end-users accessing 0818 NGNs and related services.

4.5.4 Preliminary conclusion on wholesale charges for calls to 0818 numbers.

4.108 As a result of the Geo-linking Condition, requiring that calls to 0818 numbers are treated as calls to Geographic numbers, OOs may seek to offset any associated loss of retail revenues by introducing WORs, payable by TOs. TOs, however, will have no means to recover such a charge other than by increasing their WTRs. For the reasons explained above, significant inefficiencies and disruption to the NGN platform would likely result.

4.109 In the Consultation ComReg was of the preliminary view that the price control should reflect the characteristics of 0818 numbers and standard options such as cost orientation for example, were not suitable in the circumstances. ComReg notes that the problem that is identified is the potential for the introduction of WORs where there is currently none, and the inefficient consequences arising from that enabled by the OOs' and TOs' respective bargaining power at the wholesale level.

4.110 Not allowing charges in the form of WORs for 0818 calls, where OOs can charge callers at the retail level, appears in the regard justified and proportionate. Such a measure, together with the Geo-linking Condition, affects the bargaining power balance between OOs and TOs as any attempt to increase WTRs could no longer be met by a WOR.

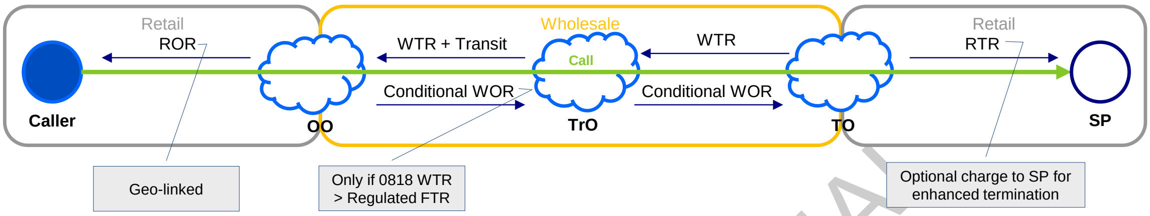
4.111 In the Consultation ComReg was of the preliminary view that absent a Regulated FTR for 0818 NGNs, a price control which requires operators not to impose a WOR or a limited WOR for 0818 (equal to the difference between the 0818 WTR and the Regulated FTR) would be a suitable remedy. From a termination perspective, there is little evidence to suggest that the costs incurred by a TO in terminating a 0818 call are significantly different to the costs incurred when terminating a National Geographic call[73]. On that basis, if a TO receives a net payment from the OO that equals the Regulated FTR, the incremental costs of terminating that call should be recovered by the TO.

[73] TOs may charge SPs for enhanced Termination services on 0818 NGNs.

4.112 ComReg considers that this position meets its statutory objectives, and in particular the objective to ensure end-user benefit is maximised.

4.113 An OO's exposure to high 0818 WTRs would be offset by permitting an OO to levy a WOR for a 0818 call if the WTR from a TO for 0818 termination is greater than the Regulated FTR for a Geographic call. In these circumstances only, the OO may charge a WOR for calls to 0818 equal to the difference between the 0818 WTR and the Regulated FTR. In the event that a TO charges a WTR for 0818 at a rate equal to the Regulated FTR, the OO may not charge a WOR for 0818 calls.

Figure 11: Charges for 0818 (January 2019)



4.114 ComReg has included updated worked examples of current and proposed charges and payment flows for 0818 NGNs at Annex 2, paragraphs A2.8 to A2.12, of this Consultation. These worked examples consider the applicable wholesale and retail charges for a 10 minute peak-time mobile originated call to the relevant NGNs under the current arrangements and also under the proposed price controls. For example, a 0818 termination rate of 4.06 c/minute is charged and the Regulated FTR is 0.057 c/minute. In such a case, the OO may charge a WOR no greater than 4 c/minute (4 c/minute is the difference between that 0818 termination rate (4.06 c/minute) and the Regulated FTR (0.057 c/minute)).

4.5.5 ComReg's Assessment of Respondents' views to Question 5

4.115 In the Consultation ComReg asked interested parties whether they agreed with the preliminary conclusion that a price control, as proposed, was an appropriate measure in relation to the 0818 number range.

4.116 Seven Respondents replied directly to this question.

4.117 Six Respondents were in overall agreement with the proposal. Four of these Respondents while in agreement noted a number of issues. These issues were in relation to the inclusion of 0818 in call termination market, transit, and set up costs. The issues and ComReg's assessment of these issues and final response are detailed in Annex 7, paragraphs A7.99 to A7.116 of this Decision.

4.118 One Respondent did not agree with the proposal. The main reason given was in relation to the costs associated with termination. ComReg's assessment of this issue and final response are detailed in Annex 7, paragraphs A7.102 to A7.103, of this Decision document.

4.5.6 ComReg's Final Position

4.119 Having considered the views of Respondents in detail ComReg remains of the view that a price control, as outlined, is the appropriate wholesale measure for calls to 0818 numbers. An OO may not charge a WOR for 0818 calls in the event that a TO charges a WTR for 0818 at a rate equal to the Regulated FTR. An OO may charge a WOR for calls to 0818 equal to the difference between the 0818 WTR and the Regulated FTR.

4.120 ComReg remains of the view (as expressed in the Consultation) that a price control is required on WORs for calls to 0818 NGNs in order to mitigate the risk of excessive bargaining power being exercised at the wholesale level. In particular, in order to address loss of retail revenues as the result of the Geo-linking condition, OOs could exploit their bottleneck control on the origination of calls to 0818 NGNs by charging WORs for which there is no justification and which would likely lead to introducing significant inefficiencies in the NGN platform. ComReg remains of the view accordingly that the introduction of WORs could result in TOs not offering 0818 services to SPs and therefore constitutes a barrier to effective end-to-end connectivity and creates a non-technical obstacle to end-users accessing 0818 NGNs and related services.

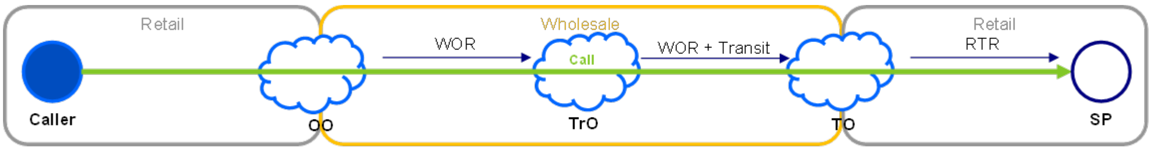
4.121 ComReg also remains of the view that no corrections are required to the calculation of termination costs to account for 0818 call termination. The measure being imposed for 0818 under this Decision will remain in place regardless of the outcome of the new termination market review. However in the event that a future consultation concludes that FVCT for calls to 0818 numbers does fall within the definition of the Relevant FVCT Markets, the potential for an excessive termination rate is eliminated as there will be no difference between the 0818 WTR and the Regulated FTR.

4.6 Freephone numbers - 1800

4.6.1 Current charging arrangements for calls to 1800 numbers

4.122 Figure 12 below shows the flow of wholesale and retail level charges for an off-net Freephone call. More detailed figures showing both charges and payments can be found in Annex 2.

Figure 12: Charges for 1800 calls (currently)



4.123 Calls to 1800 follow the RPP principle. In terms of charges at the retail level, the OO does not charge the caller and the TO charges the SP an unregulated RTR. At the wholesale level, the OO charges an unregulated WOR. TOs can charge a WTR at the wholesale level or can recover termination costs as part of the RTR to the SP. The RTR charged to the SP for a 1800 call is a combination of the per call costs incurred by all operators in the NGN value chain in carrying the call.

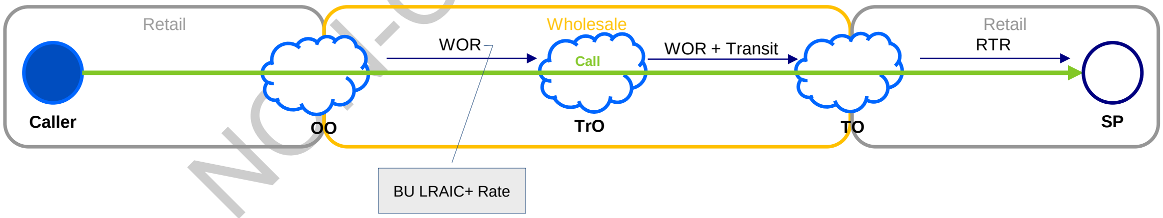
4.124 Therefore, the RTR for a RPP principle call is broadly similar to the ROR for a CPP principle call in that both are a product of the costs incurred by all operators in the NGN value chain in carrying the call. The difference being who bears the cost of the call – for RPP the SP bears the cost of the call and for CPP the caller bears the cost of the call.

4.6.2 Future charging arrangements for calls to 1800 numbers

4.125 As outlined in the Consultation, in terms of the effect of the NGN Decision on 1800 numbers, the Geo-linking Condition is not relevant. By definition in the 2018 Numbering Conditions, 1800 numbers carry no charge to the caller and would not be included in bundles. The NGN Decision does note that the 1800 and 0818 ranges will be the only NGN ranges after the consolidation from five to two NGN ranges.

4.126 In the Consultation ComReg was of the preliminary view that a price control on the WOR for 1800 will be effective in ensuring end-to-end connectivity for 1800 NGNs and access to numbers. It is expected that a 1800 WOR price control would result in a charge flow for 1800 NGNs as shown in Figure 13 below.

Figure 13: Charges for 1800 calls (January 2019)



4.127 From a termination perspective, there is little evidence to suggest that the costs incurred by a TO in terminating a 1800 call are significantly different to the costs incurred when terminating a National Geographic call with the applicable Regulated FTR. On that basis, TOs should be able to recover any termination costs via the SP.

4.128 ComReg prepared worked examples of the current and proposed charges for the Consultation. These have been updated in light of some comments received from Respondents and are included at Annex 2 paragraphs A2.20 to A2.23 of this Decision.

4.6.3 Potential wholesale harm in relation to charges for calls to 1800 numbers

4.129 As discussed at Section 3.3 of the Consultation ComReg was of the preliminary view that OOs have bottleneck control for the origination of calls to 1800 NGNs. WORs that are excessively high in respect of costs can be levied by OOs. TOs will pass these high WORs through to SPs in the form of high RTRs. SPs wishing to provide a free to call service to callers have no option but to pay the high RTRs. Moving to another TO will not reduce the 1800 RTR that the SP is subject to. OOs are able to increase 1800 WORs at will and independently of TOs, SPs, callers or other OOs.

4.130 The Consultation reached the preliminary view that absent intervention, OOs will continue to charge high WORs and SPs will continue to face high RTRs as a result. Some SPs (for example those offering services to vulnerable sections of society) will have no option but to accept these costs should they wish to continue to offer a free to call service. Other SPs may have a caller profile that is less sensitive to paying for a call and must then consider the continued high cost of offering a 1800 service versus a move to the 0818 range which, in future (based either on this decision or a future inclusion in Termination markets), will have no RTR, with the caller paying for the call.

4.131 ComReg stated in the Consultation that it was of the preliminary view that, absent intervention in respect of WORs for 1800, many SPs will no longer provide free to call services on 1800 due to the high RTRs driven by high WORs. Intervention in respect of these high WORs is required to ensure that end-to-end connectivity for 1800 NGNs is maintained and that end-users have access to services that are free to call.

4.6.4 Preliminary Conclusion on wholesale charges for 1800 numbers

4.132 ComReg was of the preliminary view in the Consultation that the appropriate form of price control for Freephone numbers is cost orientation based on detailed cost modelling.

4.133 Setting a price control of cost orientation for Freephone using modelled costs sets a cap that will allow OOs to recover reasonable costs but will avoid compensating OOs with inefficiently high costs. This measure ensures that OOs receive a reasonable return on providing Freephone services and that TOs are not faced with excessive WORs.

4.134 ComReg included in the Consultation, worked examples of current and proposed charges and payment flows for 1800 NGNs. These have been updated and are included at Annex 2 paragraphs A2.20 to A2.23 of this Decision document. These worked examples consider the applicable wholesale and retail charges for a 10 minute peak-time mobile originated call. Under the current arrangements, this example 10 minute call would cost the SP approximately €3.15. If the proposed 1800 price control is implemented and the reduced WOR is passed through to the SP by the TO, the same call would cost the SP approximately €0.25.

4.135 ComReg considers that this position meets its statutory objectives, and in particular the objectives to ensure end-user benefit is maximised and to promote competition by, among other things, ensuring all users derive benefit in terms of choice, price and quality. The measures should ultimately benefit consumers, including vulnerable consumers, and their ability to access voice based services provided over NGNs by putting in place the conditions that will promote retention of existing services and also encourage an increase in the range of services and quality of services available.

4.6.5 ComReg's Assessment of Respondents' views on Question 6

4.136 In the Consultation ComReg asked interested parties whether they agreed with the preliminary conclusion that a price control, as proposed, was an appropriate measure in relation to the Freephone number range.

4.137 Eight Respondents replied directly to this question.

4.138 Five Respondents agreed with the proposed approach of cost orientation based on detailed cost modelling. The majority of these provided additional comments for consideration. There were comments on ComReg's proposed method of intervention and on the risk of operators seeking to recoup lost Freephone revenue from other number ranges. Two operators also raised issues related to transit.

4.139 Three operators did not agree with the proposed price control.

4.140 The main issues raised were in relation to ComReg's method of intervention, the lack of a glide path, and the risk of operators seeking to recoup lost Freephone revenue from other number ranges. Two operators also raised issues related to transit. Please refer to Annex 7 paragraphs A7.123 to A7.158 for details of the issues, and ComReg's assessment and response to same.

4.141 There were some other issues raised by Respondents. These have been outlined at paragraphs A7.159 to A7.171.

4.142 ComReg has provided detailed comments in Annex 7 on the issues raised.

4.6.6 ComReg's Final Position

4.143 Several Respondents provided detailed responses and raised a number of issues and concerns.

4.144 In relation to the lack of a glide path ComReg is of the view that the current harm resulting from high WORs is sufficient to require immediate price reductions and in the circumstances, ComReg remains of the view that a glide path is not appropriate. ComReg appreciates the short term financial impact that this proposal may have on operators, and values the benefits that MVNOs and other smaller operators bring to the market in terms of competition and innovation. However implementing a glide path would reduce consumer benefits, limit 1800 availability, delay SP migration and reduce regulatory certainty. Please refer to paragraphs A7.124 to A7.151 where the above points are considered in detail.

4.145 Having considered the views of Respondents in detail ComReg remains of the view that the appropriate price control for Freephone numbers is cost orientation based on detailed cost modelling. ComReg remains of the view (as expressed in the Consultation) that if a cost orientated price control on WORs for Freephone NGNs is not imposed, end-to-end connectivity is threatened by high WORs. SPs may ultimately withdraw from the Freephone NGN platform, or make sub-optimal use of it, due to the high costs involved. As a result callers would not be able to access Freephone services or the services may be restricted. ComReg remains of the view that high WORs for Freephone NGNs constitute a barrier to effective end-to-end connectivity that, in turn, create a non-technical obstacle to end-users from being able to access Freephone NGNs and related services.

4.7 Costing Principles

4.146 In the Consultation ComReg also considered the costing approach that should be adopted to determine the costs relevant to a price control for call origination on fixed and mobile networks to Freephone NGNs. As outlined previously ComReg engaged DotEcon as external consultants to establish the principles for wholesale pricing for the NGNs under review, the findings of which were published in the Draft DotEcon Report. This report has been updated and we have received a final version of the report to be published alongside this Decision (the "**Final DotEcon Report**"). An Annex[74] to the Draft DotEcon Report set out the key parameters that ComReg should consider in developing the modelling required to establish operators' costs in originating calls to Freephone and non-Freephone NGNs. DotEcon have reviewed the issues raised by Respondents and have included any comments on these issues in the Final DotEcon Report[75] published with this Decision. They have updated Annex A where necessary. The recommended approach for each parameter is as follows:

[74] See Annex A of the 2019 DotEcon Report "A price control for regulation of wholesale charges for non-geographic numbers

[75] ComReg Document No: 20/04a – Final DotEcon Report "A price control for regulation of wholesale charges for non-geographic numbers"

(a) Model structure - DotEcon remains of the view that ComReg ought to follow a bottom-up approach to cost modelling rather than a top-down approach. Where possible, the bottom-up analysis could be checked against costs derived from an assessment of top-down data;

(b) Cost base – DotEcon remains of the view that the costs should be based on those of a Hypothetical Efficient Operator ("**HEO**") and that the modelling approach should be based on an existing HEO rather than considering a new entrant;

(c) Cost standard - DotEcon remains of the view that a Long Run Average Incremental Cost plus (**"LRAIC+"**) approach is preferred to a Pure LRIC approach, as a LRAIC+ approach should better ensure that originators earn similar margins on Non-geographic calls as they do originating Geographic calls, thereby avoiding possible regulatory-induced distortions that might affect the choice of service providers and operators regarding the treatment of different NGN number ranges and between NGNs and Geographic numbers;

(d) Scale - DotEcon remains of the view that a practical approach to addressing scale effects in the modelled networks would be to use the average of the actual number of large operators with national coverage:

  (i) For mobile, there are three such operators, so scale would be 33.3%;

  (ii) For fixed, Eircom is the only large operator with national coverage so an operator based on Eircom's scale would be appropriate;

(e) Demand forecasts - In determining future demand, DotEcon remains of the view that voice market forecasts should be consistent with forecasts used for other modelling exercises (in particular, for fixed and mobile call origination and fixed and mobile call termination), and should ensure that the forecasts are consistent across the fixed and mobile networks;

(f) Service increment - DotEcon remains of the view that the increment to be taken to identify the cost of the originated leg of the call should ideally be for all voice calls originated on the network;

(g) Depreciation method – DotEcon remains of the view that for a bottom-up ("**BU**") modelling approach, either economic depreciation or tilted annuity could be an appropriate depreciation method to use and recommend that the depreciation profile used should, where feasible, be based on economic depreciation, and any difference in approach would need to be justified;

(h) Modelled period - In order to provide a degree of certainty to the market, DotEcon remains of the view that the model should be able to calculate charges for several years, i.e. it should be a multi-year model, and also suggest that ComReg should seek maximum consistency with its modelling of other access and call prices in terms of the periods modelled;

(i) Additional mark-up – In respect of a possible additional mark-up to LRAIC+ to allow for the recovery of relevant retail costs, DotEcon's initial assessment was that there should be no provision for costs of bad debt for Freephone NGNs (given the retail price is zero), however they also suggested that operators might be given the opportunity to justify the inclusion of any additional retail costs associated with call origination to NGNs. Based on this Question 10 in the Consultation asked for the views of interested parties on the inclusion of an additional mark-up to allow for the recovery of relevant retail costs. The views of Respondents and ComReg's assessment and response to same are summarised in Annex 7, paragraphs A7.229 to A7.243. In the Final DotEcon Report, DotEcon has not changed its view on the recovery of relevant retail costs.

(j) Price path – DotEcon remains of the view that there should be no glide path for changes to origination rates for 1800 Freephone and non-Freephone NGNs and that cost-oriented 1800 WORs should come into force with immediate effect, but that a year could be appropriate for changes to origination rates for non-Freephone NGNs. DotEcon also remains of the view that allowing the prices to evolve each year to reflect the annual changes in the underlying unit costs would represent the simplest method and would ensure consistency of application within ComReg's existing pricing decisions.

4.147 Further detail of the costing principles can be found in Annex A to the Final DotEcon Report and ComReg and its advisors have given due regard to these principles when developing the models to inform cost oriented charges for MVCO and FVCO services.

4.148 In general, ComReg remains of the view that the costing principle recommendations in the DotEcon Report are consistent with the principles that ComReg has adopted in previous cost models. For example, the Termination Markets Pricing Decision included an MTR Model and a FTR Model (respectively, the "**MTR Model**" and the "**FTR Model**"[76]). Both are models that have been developed to calculate the costs of voice termination in the mobile and fixed networks and are Bottom-Up models based on a hypothetical efficient existing operator as recommended in paragraphs 4.146, (a) and (b) of this Decision. In addition, the scale effects that ComReg has adopted in the Termination Rate Models are also consistent with the DotEcon Report recommendations (see paragraph 4.146, (d)). In this regard, the FTR Model considers Eircom's scale as Eircom is the only FNO with a national network in Ireland, while the number of MNOs with national coverage in Ireland has in recent years declined from four to three and, as a result, the MTR Model assumes that the market share of the hypothetical operator is 25% up to and including the year 2013, and 33.3% from 2014 onwards.

[76] The MTR Model and the FTR Model are jointly referred to as the "**Termination Rate Models**"

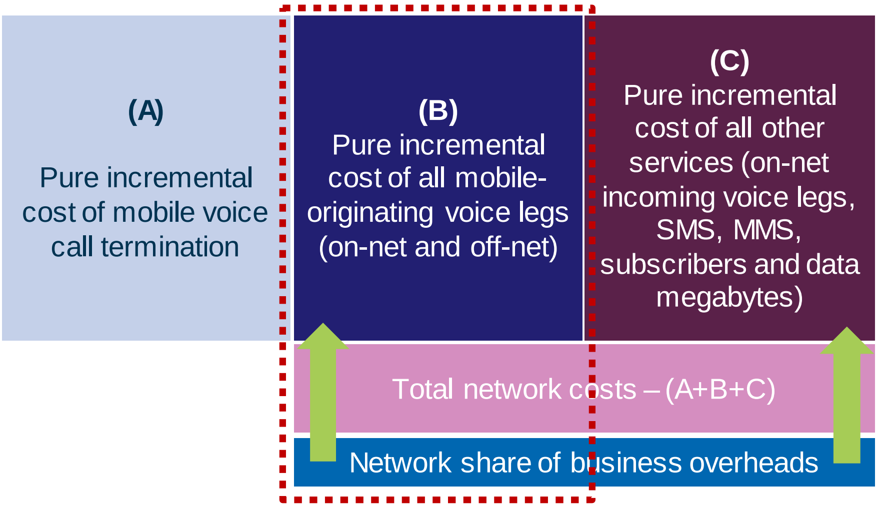
4.149 In the Consultation ComReg also agreed with the DotEcon recommendation that the voice market forecasts should be consistent with forecasts used for other modelling exercises and were of the preliminary view that basing the cost modelling for MVCO and FVCO on the Termination Rate Models was a practical way of achieving the required level of consistency.

4.150 ComReg was also of the preliminary view that, given the degree of substitutability that exists between calls originating to Geographic and Non-geographic numbers, avoiding possible regulatory-induced distortions between both types of origination call is an important consideration. It was also ComReg's preliminary view that operators would expect revenues from voice call origination services, including calls originated to NGNs, to make a contribution to the recovery of the significant common and joint network costs that are a feature of both fixed and mobile networks as well as make a contribution to the recovery of general overheads. Consequently, ComReg agrees with the DotEcon Recommendation that adopting a Pure LRIC costing approach to cost FVCO and MVCO services is not appropriate, as Pure LRIC does make any contribution to the recovery of network and business common costs. Therefore, an approach that includes an allowance for the recovery of common costs, such as either LRAIC+ or LRIC+, is preferable to Pure LRIC.

4.151 With regard to the DotEcon Report recommendation that the increment to be taken to identify the cost of the originated leg of the call should ideally be for all voice calls originated on the network in the Consultation it was ComReg's preliminary view that the definition of the service increment is primarily a concern when adopting a LRIC approach but is not as relevant a consideration when a LRAIC approach is adopted. The definition of the increment is critical in a LRIC approach because, as noted in section 3.1.3 of the Final DotEcon Report, LRIC is derived as "*the cost of* producing *a specified additional product, service or 'increment' and captures the costs directly caused by the provision of that service over and above the other services the firm produces*". Consequently, LRIC can be considered to be the costs avoided by not providing that specific increment on the network, effectively treating it as the last service in the service stack. In this respect, LRIC can be considered as a 'small increment' approach (e.g. voice origination or voice termination only) and a LRIC+ would be calculated by first determining the Pure LRIC costs for each of the defined increments (e.g. call termination, call origination and other services) and then applying one or more mark-ups to the Pure LRIC of the specific increment of interest to allow for the recovery of costs that are not incremental to any particular increment.

4.152 An illustration of the LRIC+ approach as it is applied in the MVCO Decision Model is shown in the following diagram:

Figure 14: Illustration of the LRIC+ approach

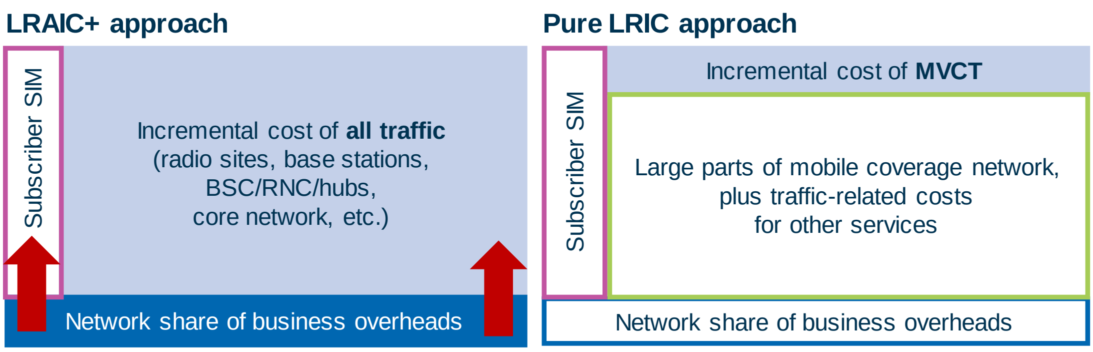


Source: Analysys Mason, 2019

4.153 If LRIC is a 'small increment' approach then LRAIC is the equivalent of a large increment approach (i.e. all traffic services provided by the network rather than, e.g. calls originating on the network) as LRAIC allocates the cost of the traffic increment between the relative volumes of all the network traffic services, using 'average traffic routing factors'. Hence, under a LRAIC approach each service, including voice call origination, receives a share of intra-traffic network common costs. LRAIC+ is calculated in the same way as LRAIC, except that one or more mark-ups are applied to the network costs to capture other costs (typically joint and common costs at the enterprise level, such as business overheads, that are common across all services provided).

4.154 The functionality to cost on both a Pure LRIC and a LRAIC+ approach has been implemented in the MTR and the FTR Models as this allows a comparison to be made between the cost recovered when the service is costed using Pure LRIC and the costs recovered when a LRAIC+ approach is used. For illustrative purposes, a comparison of the LRAIC+ approach and the Pure LRIC approach as they apply in the MTR Model is shown in the following diagram.

Figure 15: Comparison of LRAIC+ with the Pure LRIC Approach



Source: MVCO Decision Specification Document, Figure 9.3

4.155 Consequently, although LRAIC+ is closely related to LRIC+, how each individual small increment is defined will only affect the LRIC+ calculations and not the LRAIC+ calculations. Nonetheless, adopting a LRAIC+ approach should ensure that the allocation of costs to voice call origination services is consistent in principle with a LRIC+ approach that is based on an increment that includes all voice calls originated on the network. Therefore, ComReg remains of the view that a LRAIC+ approach, that attributes the network costs to services based on the average usage of the various network components by those services, should be adopted to determine the costs for MVCO and FVCO.

4.156 Adopting a LRAIC+ approach ensures that the charges for calls originated to Freephone NGNs can make an appropriate contribution to all relevant network costs, including common network costs and general business overheads. This serves to maintain the investment incentives for operators and also helps to avoid introducing any regulatory-induced distortions that might affect the choice of service providers and operators regarding the treatment of different Non-geographic number ranges, or between NGNs and Geographic numbers, as recommended in the Final DotEcon Report.

4.157 The Final DotEcon Report also considers that either economic depreciation or tilted annuity could be an appropriate depreciation method to use and recommends that the depreciation profile used should, where feasible, be based on economic depreciation, and any difference in approach would need to be justified. The MTR Model uses economic depreciation to annualise costs and ComReg's opinion in the Termination Markets Decisions is that an economic depreciation approach is appropriate for the MVCT market, "*given that this market is capital intensive, will continue to be subject to significant changes in asset prices and is expected to experience considerable growth in service demand over the period of the proposed model*". It is ComReg's view that the MVCO Decision Model should also use Economic Depreciation as the MVCO service is delivered on the same network that delivers MVCT services.

4.158 Mobile networks are experiencing ongoing upgrades in Radio Access Network (**"RAN"**) technology from 2G to 3G to 4G and possibly 5G, with the result that asset prices fluctuate in line with the different technology choices that mobile operators are making in the access parts of their networks, while demand on a specific technology fluctuates as it transitions between those technologies. Economic depreciation is required when both the costs of the assets and the demand supported by those assets are fluctuating, as is the case with the RAN assets in the mobile networks, but a tilted annuity can be used when the rate of change in asset prices and demand is more constant. It was ComReg's view that the technology evolution is not as marked in the fixed core network as it has been in the mobile RAN and in the Termination Decision ComReg took the view "*that depreciation determined on the basis of a tilted annuity approach is appropriate for the FVCT market given that the change in demand is likely to be small and the tilt would reflect price changes in* *assets*[77]". For these reasons, ComReg's preliminary view was that the tilted annuity approach should continue to apply in the FVCO Decision Model.

4.159 In the Termination Markets Pricing Decision ComReg also considered the issue of the recovery of costs (i.e. common and joint costs) that are unrecovered due to setting the charges for termination services on a Pure LRIC basis and proposed that, in the case of MNOs and FNOs where MTRs and FTRs are the only regulated services, any unrecovered costs could be recovered from their other unregulated services. ComReg also proposed that efficient costs unrecovered from Eircom's voice termination services could be recovered from other (regulated and unregulated) wholesale and/or retail voice/non-voice services as appropriate. In the Consultation ComReg's preliminary view was to include an allowance (for a proportion of the costs that are unrecovered by the Pure LRIC-based charges for MVCT and FVCT) in the network costs associated with the charges for MVCO and FVCO. This is in line with the general principles as set out in the Termination Markets Decisions. ComReg remains of this view.

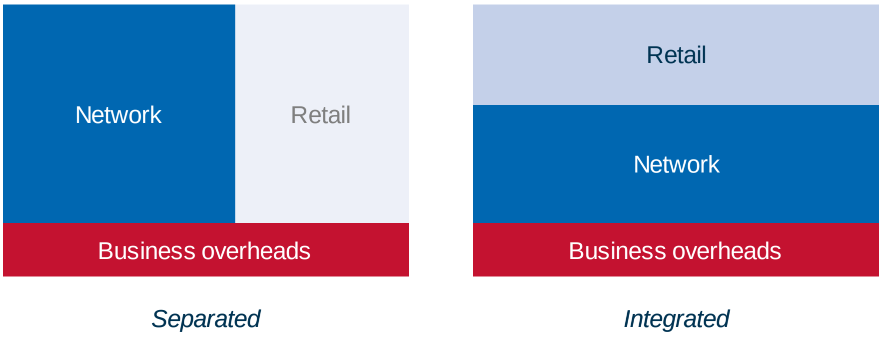
4.160 In respect of a possible additional mark-up to LRAIC+ to allow for the recovery of relevant retail costs, ComReg was also of the preliminary view in the Consultation that operators (including Virtual Network Operators ("**VNOs**") that provide network service such as call origination without owning the underlying fixed or mobile networks) would expect to recover the relevant retail costs when their retail customer base originate calls to NGNs (including Freephone NGNs) hosted on other networks. Consequently it was identified in the Consultation that additional analysis was required to identify any relevant retail costs that might be associated with call origination to Freephone NGNs as the modelling in the Consultation only identified the network costs to be recovered by the mobile and fixed operators that originate the call.

4.161 ComReg sought views from interested parties on relevant retail costs. ComReg asked a question in the Consultation to which several operators provided responses. Please refer to Annex 7, paragraphs A7.229 to A7.243. The majority agreed with ComReg's proposals. The following paragraphs explain how retail costs are modelled by ComReg.

4.162 Bottom-up cost models previously developed by ComReg have tended to focus on the network costs of the modelled operator as they consider the costs of the operator's retail activities using a separated approach rather than an integrated approach. This means that network services (such as voice traffic) are costed separately from retail activities (such as marketing, pricing, handset subsidies and billing related activities such as data collection, credit management and revenue collection) as outlined in the following diagram.

[77] Termination Decision, paragraph 4.126.

Figure 16: Options for Consideration of Retail Costs



Source: MVCO Decision Specification Document, Figure 3.13

4.163 Business overheads are then marked up between network and retail activities, so that the wholesale cost of supplying a service such as mobile call origination can consider the network costs associated with the call origination service plus a share of business overheads attributable to the network and any consideration of the retail costs associated with the call origination service is not explicitly addressed in the model. As a consequence, the LRAIC+ charge for call origination to Freephone NGNs only allows for the recovery of relevant network costs.

4.164 In the Consultation it was ComReg's preliminary view that a charge that only recovers network costs in the case of calls originated to Freephone NGNs could give rise to distortions between calls originating to Geographic numbers and Freephone NGNs as the origination revenues for calls to Freephone would be precluded from making a contribution to the recovery of relevant retail costs, whereas the charges for calls originated to Geographic numbers can be set to recover such costs. This can be particularly problematic when the call originates from a customer of a Fixed Virtual Network Operator (**"FVNO"**) or Mobile Virtual Network Operator (**"MVNO"**) as the FVNO/MVNO may receive no revenue for a call to a Freephone NGN made by one of its customers. Therefore, ComReg proposed that the cost oriented charge for calls originated to Freephone NGNs should include an allowance for the recovery of relevant retail costs.

4.165 Under the current FVCO regulation for NGNs Eircom is allowed an additional mark-up for "*reasonable billing costs associated with the service; and an additional bad debt surcharge*". This is essentially a payment to Eircom retail to allow it recover relevant retail costs and establishes the precedent that the cost oriented charges for calls to NGNs should also allow for the recovery of relevant retail costs. It was also noted in the Consultation at paragraph 4.136 that the DotEcon Report also recommends that operators are given the opportunity to justify the inclusion of any additional retail costs associated with call origination to NGNs. Consequently, in modelling the costs of MVCO and FVCO charges, ComReg has also modelled the level of retail cost relevant to calls originated to Freephone NGNs from mobile and fixed networks. Note that this modelling is based on limited information provided by network operators and VNOs.

4.166 In conclusion, the models that were previously developed to inform cost-oriented charges for MVCT and FVCT services have been amended by ComReg to calculate the costs of voice call origination on mobile and fixed networks, including retail costs. ComReg's approach has been guided by the costing principle recommendations outlined in the Final DotEcon Report and the model amendments have been undertaken with assistance from AM in the case of the MVCO Decision Model and TERA in the case of the FVCO Decision Model. In the course of amending the Models ComReg has also sought to maintain an appropriate level of consistency with the cost modelling principles and parameters that have previously been adopted when determining other cost-oriented charges for services that share the mobile and fixed networks with MVCO and FVCO services.

4.167 The next chapter provides an overview of the models that ComReg is proposing to use to determine the costs relevant to a price control for call origination on fixed and mobile networks to Freephone NGNs.

4.7.2 ComReg's Assessment of Respondents views to Question 7

4.168 In the Consultation ComReg asked Respondents if they agreed with the costing principles proposed for modelling the costs to inform a cost oriented wholesale charge for call origination to Freephone NGNs.

4.169 Seven Respondents replied directly to this question.

4.170 One Respondent agreed with the approach, the majority disagreed with some element of the proposal. One Respondent stated that it disagreed with the overall proposal but stated that they accept that, if they did, LRAIC+ would likely be the most relevant. Another Respondent noted that they do not agree with the overall pricing approach but provided no further comment.

4.171 The main issues raised were in relation to modelling approach/parameters and comments on technology considerations. The issues with modelling approach and ComReg's assessment and response to same have been outlined at Annex 7, paragraphs A7.178 to A7.193. The comments regarding technology and ComReg's assessment and response to same have been outlined at Annex 7, paragraphs A7.194 to A7.197.

4.7.3 ComReg's Final Position

4.172 Having considered the views of all Respondents ComReg remains of the view that the costing principle recommendations in the DotEcon Report and as outlined in the Consultation remain appropriate.

4.8 Undertakings in scope

4.173 This Decision imposes a wholesale price control (and supporting transparency obligation) for origination of calls to 1800 and 0818 NGNs. The Decision Instruments, at Annex 9 and Annex 10, list the six mobile and thirty-one fixed operators that have the ability to originate calls to 1800 and 0818 NGNs.

4.174 Following publication of the Consultation on 22 May 2019, ComReg, on 6 June 2019 issued a the 13D(1) Request to the FVCT and MVCT SMP Operators and asked each operator to confirm the list of operators that they charged for call termination to 0818 NGNs in the previous 12 months. We also asked operators to confirm the list of operators that had charged them for call origination to 1800 NGNs. This led to an additional 10 Fixed Undertakings to be included in the Decision Instrument at Annex 10. No additional Mobile Undertakings were identified.

4.175 As per Appendix 1 of Annex 9 the list of six mobile Service Providers is as follows:

(a) Lycamobile Ireland Limited

(b) Meteor Mobile Communications Limited

(c) Tesco Mobile Ireland Limited

(d) Three Ireland (Hutchison) Limited

(e) Virgin Media Ireland Limited

(f) Vodafone Ireland Limited

4.176 As per Appendix 1 of Annex 10 the list of thirty-one fixed Service Providers is as follows:

(a) Airspeed Communications Unlimited

(b) BT Communications Ireland Limited

(c) Blue Face Limited

(d) Colt Technology Services Limited

(e) Conduit Enterprises Limited

(f) Dialoga Servicios Interactivos SA

(g) Eircom Limited

(h) Equant Network Services International Limited

(i) Finarea SA

(j) Goldfish Telecom Limited

(k) IFA Telecom

(l) Imagine Communications Ireland Limited

(m) Intellicom Ireland Limited

(n) In2com Limited

(o) Internet Protocol Telecom Limited

(p) Magnet Networks Limited

(q) Magrathea Telecommunications (Ireland) Limited

(r) Minutebuyer Corporate Services Limited

(s) Modeva Networks Unlimited

(t) Oxygen8 Communications Ireland Limited

(u) Phone Pulse Limited

(v) PlanNet 21 Communications Limited

(w) Pure Telecom Limited

(x) Procom Voice Solutions Limited

(y) Telcom Limited

(z) TSFY Limited

(aa) Verizon Ireland Limited

(bb) Viatel Ireland Limited

(cc) Virgin Media Ireland Limited

(dd) Vodafone Ireland Limited

(ee) Voxbone SA

4.177 ComReg will carry out a periodic review of undertakings originating calls to 1800 and 0818 and will update the operators in scope as appropriate.

4.178 Tesco Mobile Ireland Limited **(“TMI”)** in its response stated “*In relation to section 4.11 (undertakings in scope), Postfone should be included.*” ComReg has considered the point raised by TMI and is of the view that “Postfone” (Postmobile) is not included for the following reasons:

(a) Postmobile[78] is a reseller or “Light” MVNO. These MVNOs simply resell their hosts minutes, and have no infrastructure or billing capacity and use host’s numbers and do not charge (or have the ability to charge) MTRs. They may however, own and operate their own customer care, marketing and sales operations.

[78] www.postmobile.ie

(b) Postmobile has entered into a commercial arrangement with Vodafone. Postmobile does not have any network, switching or interconnect infrastructure. Postmobile's wholesale activities are controlled and managed by Vodafone which charges its MTR to other networks for supplying mobile call termination and hands over the relevant calls to Postmobile's subscribers. Postmobile does not therefore have the ability to set an MTR or charge one.

4.179 ComReg notes that 0818 NGNs are internationally accessible and therefore, calls to these numbers may originate on the network of an operator outside Ireland or indeed, outside the EU. These operators are outside ComReg's jurisdiction (i.e. they are not Authorised Undertaking registered with ComReg pursuant to Regulation 4 of the Authorisation Regulations[79]). As these non-Irish operators are not within ComReg's jurisdiction the origination of calls to 0818 NGNs would not be subject to the price control for 0818 call origination. Similarly these operators would not be subject to the Geo-linking Condition and may charge the caller any retail rate they wish. It is likely that these operators will treat these 0818 NGN calls as a standard international call with the applicable retail international call charge levied on the caller.

[79] European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011), as may be amended from time to time or replaced with equivalent effect. **(“the Authorisation Regulations**”).

Chapter 5

Price control for wholesale NGN calls originated by MNOs

5.1 Overview

5.1 In this chapter, ComReg discusses the model used to determine the appropriate level of costs associated with calls to NGNs originating from mobile networks. In Chapter 5 of the Consultation ComReg set out its preliminary view on the cost modelling approach to determine the appropriate mobile WOR for Freephone numbers.

5.2 ComReg was of the preliminary view in the Consultation that cost oriented charges for calls to NGNs should be informed by an analysis of network costs based on a Long Run Average Incremental Cost Plus Plus (**"LRAIC++"**) approach with an initial mark-up to include the recovery for network-related overheads and a further mark-up to allow for the recovery of a proportion of common costs that were not recovered by the Pure LRIC approach used to set MTRs in the Termination Markets Pricing Decision. ComReg was also of the view that cost oriented charges should also allow for the recovery of retail costs that are considered relevant to the different categories of NGNs.

5.3 ComReg consulted on its initial views in Questions 8, 9 and 10 of Chapter 5 of the Consultation. The Submissions from Respondents to those questions are dealt with in detail in Annex 7. Having considered the Submissions ComReg now sets out its final position on the issues raised.

5.4 ComReg appointed AM to produce a cost model and accompanying specification document to detail the relevant inputs to a cost model capable of generating a mobile origination rate for calls to NGNs.

5.5 For the purposes of the Consultation AM prepared a model called the "Draft Mobile Voice Call Origination model". This has been reviewed for the purposes of this Decision and will now be referred to as the "Mobile Voice Call Origination Decision model" (the **"MVCO Decision Model"**) and the related specification document entitled "*Report for ComReg: Additional cost modelling for mobile voice origination*" (**"MVCO Decision Specification Document"**) for ComReg. A non-confidential version of this specification document is published on ComReg's website, ComReg Document no. 20/04b.

5.2 Mobile voice call origination modelling

5.2.1 Background

5.6 ComReg has previously appointed AM to develop a cost model to determine the costs of MVCT. This cost model (the **"MTR Model"**)[80] is a bottom-up model of a generic hypothetical existing efficient operator based on the costs, volumes and technologies faced by MNOs active in the Irish market. As outlined in paragraph 4.146(a) of the Costing Principles in Chapter 4 of this Decision, ComReg proposed to use a LRAIC+ costing approach to derive the cost for originated voice calls (to NGNs).

5.7 In the Consultation, ComReg was of the preliminary view that, in order to maximise consistency with the cost analysis underpinning the calculation of MVCT charges, the MTR Model should be updated and amended to derive the cost oriented charges to apply to mobile voice calls origination to NGNs. Consequently, ComReg proposed in the Consultation, to use the amended MTR Model to calculate costs relevant to mobile-originated voice calls (to NGNs) using a LRAIC+ approach. AM has refined the MTR Model to enable it to calculate the relevant LRAIC+ charges in the MVCO Decision Model.

5.8 The following sections provide an overview of the main modelling principles and methodologies that applied in the MTR Model that is used to model the cost of MTRs, together with an outline of the refinements to the modelling approach that have been considered specifically for the purposes of modelling the cost for MVCO (to NGNs) in the MVCO Decision Model, guided by the recommended costing principles contained in the DotEcon Report. The MVCO Decision Model also includes additional analysis to identify the relevant retail-related costs associated with such calls.

5.2.2 Overview of the MVCO Decision Model

5.9 To maintain consistency with the Termination Markets Pricing Decision, the main modelling parameters in the MVCO Decision Model have been grouped as follows:

(a) operator-related parameters – including the form of the modelled operator (hypothetical efficient existing operator), structural implementation (bottom-up model using scorched node approach reflecting actual operator data), market share assumptions and network footprint;

(b) service-related parameters – including the service set, service volumes, voice traffic, data traffic, market and operator demand;

[80] Please see the MTR Model and the accompanying ComReg documents on the European Commission website at: https://circabc.europa.eu/w/browse/28e2cc8b-d473-400d-a58d-c3819f8865e4

(c) technology-related parameters – including geotypes, points of interconnect, network nodes, RAN, network coverage, Single RAN ("**S-RAN**"), VoLTE and VoWifi, treatment of spectrum, mobile switching network, mobile transmission network and network expenditure;

(d) implementation-related parameters – including depreciation approach, LRIC and LRAIC calculations, Weighted Average Cost of Capital (**"WACC"**), modelling timeframe, modelling of relevant retail costs.

5.2.3 Operator-Related Parameters

5.10 In the Termination Markets Pricing Decision, ComReg concluded that cost modelling for the MTR Model should be based on a bottom-up model of a hypothetical efficient existing operator with 33.3% market share from 2014 onwards (and 25% in and before 2013). A forward-looking market share of 33.3% better reflects reality by capturing the network technologies currently deployed by Irish MNOs to support MVCT services and considers scale similar to the actual scale achievable in the Irish market while maximising transparency for industry. These parameters are retained in the MVCO Decision Model.

5.11 The hypothetically efficient existing operator in the model is assumed to have similar network coverage to that achieved by the three MNOs identified as having near 100% population coverage[81]. The model assumes 2G/3G coverage roll-out in the earlier years of the modelling period with 4G coverage assumed to reach 2G coverage levels in the long term.

Table 5: Input Coverage by Technology in the MTR Model

Technology	Population coverage (MTR Model)	Resulting area coverage (MTR Model)
2G (from 2003 in all geotypes)	98.7%	84.7%
3G (2100MHz, up to 2012 in all geotypes)	84.3%	35.5%
3G (900MHz, by 2019, in the two rural geotypes only)	92.6% (of Rural 1 / Rural 2)	77.3%
4G (by 2019 in all geotypes)	98.7%	84.7%

Source: MVCO Decision Specification Document, page 9, Figure 3.4

5.12 The MTR Model was also based on data provided by MNOs using a 'modified scorched node' methodology. This allows for the modelling of efficient costs and scale, whilst at the same time enabling costs and technology assumptions to be closely aligned with those actually faced by the MNOs currently in the Irish market.

[81] Meteor (Eircom Mobile), Three and Vodafone.

Modelling a hypothetical existing operator in this way also allows for past constraints to be reasonably captured and, if relevant, reflected in the chosen parameters (e.g. different levels of spectrum scarcity, different numbers of network operators, use of existing network node locations).

5.13 ComReg has constructed the MTR Model and the related MVCO Decision Model based on information sourced from actual operators in the Irish market through a 13D(1) Request. Such information includes:

(a) demand, e.g. subscriber usage, busy hour traffic profile;

(b) network design e.g. cell radii, mix of backhaul technologies, planned asset capacities;

(c) and cost e.g. unit capex, asset lives.

5.14 Certain key outputs of the MTR Model were subsequently calibrated with reference to the network and financial data of actual operator(s). This helped ensure that the MTR Model is consistent with the 2009 Termination Rates Recommendation which requires that a cost model should "*produce as robust results as possible and to avoid large discrepancies in operating cost, capital cost and cost allocation between a hypothetical and a real operator*"[82].

5.2.4 Service-Related Parameters

5.15 Service parameters are a necessary input to the model which calculates long-run costs. The MTR Model includes information on subscriber numbers, service volumes and traffic patterns. In developing the cost model, it was therefore necessary to gain an understanding of the aggregate historic and forecast traffic in the Irish mobile market over the timeframe of the model.

5.16 The provision of both voice and data services across a single infrastructure will generate economies of scale and scope (reducing the unit costs for voice and data services). As a proportion of network costs would need to be allocated to all such services and, as outlined in Figure 3.12 of the MVCO Decision Specification Document, a full list of proven services have already been included in the MTR Model.

5.17 The service volume in the MTR Model used ComReg statistics on the total market in Ireland, supplemented by information provided by Irish MNOs (in the form of their responses to statutory information requests) together with data extracted from the 2016 MTR model, to quantify historical demands and derive forecast trends for both mobile market subscribers and traffic. This was to ensure that the modelled network was dimensioned with reference to all the traffic that is carried on Irish mobile networks.

[82] 2009 Termination Rates Recommendation, Recital 11.

5.18 This market information was then rearranged to suit the categories used in the MTR Model, with voice, SMS and data traffic treated separately. Voice and SMS were further split into sub-categories: incoming, outgoing and on-net traffic. All three sub-categories were further split into the different radio technologies modelled.

5.19 Five classes of NGNs are in scope as part of this review. These are 1800 (Freephone), 1850 (Shared Cost, per call charge), 1890 (Shared Cost, per minute charge), 0818 (Universal Access) and 076 (Nomadic). Calls to these numbers constitute a proportion of the mobile-originating voice traffic assumed in the MTR model.

5.20 Furthermore, the MVCO Decision Model includes the capability to calculate a LRIC/LRIC+ for MVCO services, which follows the DotEcon Report recommendation that the increment for call origination should encompass all voice calls originated on the network (see paragraph 4.146(f) of Chapter 4 of this Decision). To facilitate this calculation, the three on-net voice services (for 2G, 3G and 4G technologies respectively) have each been split into two services: an "on-net outgoing leg" and "on-net incoming leg", with the same number of minutes under both services in each year. The network loading calculations have then been adjusted so that the network loading for each on-net minute service is now split between these two component services, so outgoing loading is associated with the "on-net outgoing leg" service and incoming loading is associated with the "on-net incoming leg".

5.21 Although the demand service volumes have been revised to identify a number of service categories specifically associated with mobile call origination, the approach taken does not affect the aggregate level of traffic carried on the mobile operator's network as the new service categories are modelled as sub-sets of previously existing service categories. Consequently, the aggregate levels of annual voice, data, SMS and MMS demands are assumed to remain unchanged from the version of the MTR Model used to cost the Pure LRIC of MVCT, and the same assumptions about busy hour service demand also apply.

5.22 Further details of the basis for determining the service volumes that the modelled operator is expected to carry, both on an annual basis and at peak times, can be found in Section 5 of the MVCO Decision Specification Document appended to this Decision[83] and the modifications to the modelling of voice services in the MVCO Decision Model are outlined in Section E.3 of the MVCO Modelling at Annex 5.

5.2.5 Technology-Related Parameters

5.23 Having determined the level of voice and data services pertaining to the hypothetical network operator it is then necessary to consider the technology parameters that will inform the types and quantities of network equipment and infrastructure that will be required to deliver those services to end-users. Basing the MVCO Decision Model

[83] Annex 5 AM Annex

on the MTR Model means that the same technology parameters apply in both network cost models.

5.24 To dimension the network, service demand from all traffic services is combined with network usage/routing factors to form aggregated cost drivers to capture the relative usage of each network element by each unit of service demand. This enables the network cost model to calculate the required deployment of appropriate network elements in order to meet the demands for capacity and coverage.

5.25 As capacity and coverage requirements are not uniform across the country the service demand has to be attributed to the different geotypes in order to capture the extent to which geographical factors can influence the costs of delivering services to end-users. In the MTR Model, AM defined 5 geotypes to allow the modelling of the different dynamics of network deployments in different geographies (for example, coverage-driven deployments in rural areas, versus capacity-driven deployments in urban areas).

5.26 The RAN comprises the base station sites and equipment required to implement a radio access technology connecting the end-user to the mobile core network. The network design for the radio layer in the new MTR model considers the three radio technologies currently deployed by Irish MNOs: 2G Global System for Mobile Communications (**"GSM"**[84]), 3G Universal Mobile Telecommunications System (**"UMTS"**[85]), and 4G LTE. This network design includes not only a layer of coverage, but also capacity upgrades, and the physical site requirements (single technology sites, co-located sites, own tower sites and third-party installations). The network design first considers sites for coverage and then considers the radio interface traffic loading to calculate the additional assets required to carry this loading.

5.27 Coverage is considered a central aspect of mobile network deployment and of the radio network in particular. All mobile networks in Ireland currently provide significant coverage using their 2G/3G networks, as required by their licences. These actual levels of coverage have been reflected in the MTR Model.

5.28 The MTR Model assumes that both 3G and 4G deployments reach the same level of coverage as the modelled 2G network in the long term. The 3G and 4G coverage deployments have been calibrated to ensure that the 2016 base station counts of the modelled operator are in the range of the asset counts of actual operators, as derived using ComReg's licence data. A similar calibration using the actual 2G base station deployments is not undertaken since they comprise both coverage and capacity base stations.

[84] The Global System for Mobile Communications (**"GSM"**) is a second generation (2G) standard for mobile networks.

[85] The Universal Mobile Telecommunications System (**"UMTS"**) is a third generation mobile cellular system for networks based on the GSM standard.

5.29 The MTR Model is also capable of considering the potential impact of VoLTE, VoWIFI and S-RAN deployments, although not all these potential deployments were active in the modelled network when determining the MTRs rates in the 2019 Decision.

5.30 In finalising the MTR Model ComReg took the view that it is unlikely that a 4G overlay would be used to deliver large volumes of wholesale mobile voice termination in the short to medium term. However, there are still economies of scale and scope associated with deploying a 4G overlay with the 2G/3G networks, due to asset sharing. ComReg recognised that while these economies are only likely to have a small impact on the Pure LRIC of wholesale MVCT they would have a larger impact on the LRAIC+ of all wholesale services. Consequently, although the MTR Model assumes that voice services are not carried on 4G technology, capturing 4G deployments in the MTR Model means that it is possible to understand the impact such economies would have on the costs of all services including the LRAIC+ of Mobile Voice Call Origination (**"MVCO"**).

5.31 Given the evidence of the increasing use of S-RAN in Ireland, AM has modelled the impact of the increased economies of scope that S-RAN can deliver by modifying the Modern Equivalent Asset (**"MEA"**) unit costs of the standalone deployments to achieve the expected levels of capex and opex savings per site over time. S-RAN is assumed to be activated from 2014 onwards in the MTR Model. Further detail on the cost modelling approach taken is described in Section 3.2.1 of the MVCO Decision Specification Document[86] .

5.32 The MVCO Decision Specification Document recognised that, in principle, a proportion of mobile-originated voice could be carried as VoWiFi in the MTR Model, with these services having routeing factors that only use the core network assets[87]. However, ComReg took the view in the Termination Markets Pricing Decision that there was still significant uncertainty both in terms of modelling the costs of VoLTE (as the next generation of mobile telephony) and of VoWiFi platforms in the Irish context and in understanding the extent of their use to carry mobile voice traffic in the long-run. Consequently the MTR Model assumes that both platforms are not deployed and that all forecast voice, including MVCO services, continues to be carried using 2G and 3G networks.

5.33 The spectrum holding of the existing MNOs in Ireland is set out in Table 6 below. Prior to 2013, the spectrum holdings for the modelled operator are consistent with the spectrum holdings from the 2016 MTR model and from 2013 onwards the modelled operator's assumed spectrum holding is based on an average of all operator holdings and aligns with its assumed market share, i.e. the modelled operator is assumed to hold one-third of the available spectrum within each band, rounded to the nearest block size of 5MHz.

[86] Please see Annex 5 of this Decision.

[87] See MVCO Decision Specification document, page 6.

Table 6: Paired Spectrum Holdings by Operator and Band

Operator	800MHz	900MHz	1800MHz	2100MHz	3.6GHz
Three	2×10	2×5 + 2×10	2×20 + 2×15	2×30	100
Vodafone	2×10	2×10	2×25	2×15	85/105
Meteor	2×10	2×10	2×15	2×15	80/85
Total	2×30	2×35	2×75	2×60	265/290
Generic operator	2×10	2×10	2×25	2×20	2×45

Source: MVCO Decision Specification Document, Figure 3.7

5.34 Each band is assumed to be used for either capacity or coverage for one of the three radio technologies and this notional spectrum holding is not assumed to differ in the modelled scenario of full traffic and the modelled scenario of traffic without mobile termination or without MVCO. As a result the spectrum licence costs will not be part of the Pure LRIC for voice services.

5.35 For a more detailed overview of spectrum allocations, please see Section 3.2.2 of the MVCO Decision Specification Document at Annex 5.

5.36 The calculation of spectrum payments in the MTR Model include the access fees and annual usage fees that are paid by Irish operators and take into account the level of payments and the time value of money. As a result spectrum fees are calculated on a year-by-year basis with upfront fees calculated as a capex and annual spectrum usage fees calculated as an opex. For each modelled year fees are allocated between 2G, 3G and 4G technologies.

5.37 Please see Sections 3.2.2, 3.2.3 and 6.10 of the MVCO Decision Specification Document for a more detailed discussion of how the costs associated with spectrum payments are derived for the hypothetical operator in the MTR Model.

5.38 The mobile switching network comprises the nodes and equipment necessary to provide the various services such as call routing, message transfer and internet access for the subscribers connected through the RAN. As all Irish operators have upgraded their networks for 4G deployments ComReg concluded that an all IP-core was a reasonable assumption for the hypothetical operator considered in the MTR Model to deploy.

5.39 To capture the upgrades necessary for a 4G network, AM assumed the use of an industry standard enhanced packet core (**"EPC"**) architecture while the introduction of VoLTE requires the deployment of an IP Multimedia subsystem (**"IMS"**[88]).

5.40 Different types of switches are necessary to ensure the network of the operator modelled is able to function as planned to offer mobile services. Figure 6.9 in the MVCO Decision Specification Document provides an overview of the different core network elements that are assumed to be deployed in the mobile switching network

[88] IP Multimedia Sub system (IMS) is a framework for delivering IP multimedia services.

together with the associated parameters such as the capacity driver and the minimum number required of each element in any network. The traffic load on the network may then require larger numbers of units to be deployed and some switches are assumed to have redundant deployments.

5.41 Please see Section 3.2.4 and Section 6.8 of the MVCO Decision Specification Document for more detailed discussion of the modelling of the mobile switching network and support systems.

5.42 Transmission infrastructure in a mobile transmission network connects the active equipment to ensure the transport of voice, message and data traffic between the different network equipment nodes. The choice of mobile network transmission architecture varies among the actual mobile operators in Ireland and can change over time. In the MTR Model, AM models a modern mobile network transmission architecture. This implies a national fibre network for collecting and carrying traffic back to the main switching sites (assumed to be located at several geographically separate locations in Dublin) and carrying traffic between these sites.

5.43 While the choice between leasing managed STM/Gbit services and self-supply of transmission equipment is likely to vary by operator, AM assumed the hypothetical operator leases dark fibre and self-supplies transmission equipment. The model also assumes that backhaul is predominantly provided using microwave links with a smaller number of leased lines (in Dublin and smaller cities).

5.44 The Last Mile Access (**"LMA"**) and hub to core transmission networks are common to all three radio network technologies. The model allows for capacity upgrades and the physical transmission infrastructure for both networks can be either leased lines or microwave links. Microwave links are deployed point-to-point but in the case of the hub to core transmission network the leased lines can be deployed in rings for increased network resilience.

5.45 Base Station Controllers (**"BSCs"**) and Radio Network Controllers (**"RNCs"**) aggregate 2G and 3G traffic respectively. In both cases, all urban radio traffic is routed through BSCs/RNCs in its own geotype, with the remaining traffic all routed through the dense urban geotype. There are capacity upgrades implemented in the MTR Model for this level as well.

5.46 Some BSCs and RNCs are co-located with core nodes, but others are remote and so require BSC or RNC to core transmission links. The core network is assumed to be a ring within Dublin, with another ring to remote BSC/RNC locations. It carries a proportion of the data traffic and a proportion of the voice traffic.

5.47 Please see Section 3.2.5 and Sections 6.3 to 6.7 of the MVCO Decision Specification Document for more a detailed discussion of the modelling of the various transmission network deployments.

5.48 The MTR Model also needs to reflect the network element unit capex and opex costs that a mobile operator in Ireland would incur. For this reason the values used in the MTR Model have been based, to the maximum extent possible, on data collected from the Irish MNOs. Where data is absent, unavailable, or incomplete, it has been necessary for ComReg and its advisers to exercise complex judgments and appreciation as to the relevant inputs and costs associated with them. Where appropriate, such judgment has also been exercised in the light of experience in other jurisdictions.

5.49 The network design algorithms in the MTR Model compute the assets (network elements) that are required to support the modelled level of demand in each year. A series of steps are then undertaken in order to arrive at the schedule of capex and opex over the modelling period. These steps include defining and quantifying the assets to be purchased in each year, deriving unit costs (capex and opex) for these assets, calculating unit cost trends over time and then applying the calculated costs to the computed network asset quantities each year to derive total capex and opex over time.

5.50 The model includes standard costs inputs for each asset category specifying an assumed lifetime, planning period, proportion of asset replaced per annum and opex as a proportion of capex for each category. The network design algorithms have to factor in a planning period to allow time for provisioning, installation, configuration and testing of the assets before they are activated.

5.51 As the cost of purchase of network assets varies over time, AM applied a MEA approach to provide the appropriate cost basis for purchase. Real-term unit asset cost trends are applied to 2017 unit asset costs to reflect the evolution of the modern technology unit asset costs over past and future time. In the MTR Model AM largely applied the cost trends assumed in the 2016 MTR Model.

5.52 Section 7 of the MVCO Decision Specification Document sets out a more detailed discussion of the approach taken in the MTR Model to calculate expenditure and ComReg is proposing this approach is maintained in the MVCO Decision Model.

5.2.6 Implementation-related parameters

5.53 A key implementation related parameter is the depreciation approach that is used to annualise costs and ComReg's view is that economic depreciation should continue to be used in the MVCO Decision Model to determine the cost recovery of capital investments for the purposes of calculating costs relevant to mobile-originated voice calls (to NGNs), thereby maintaining consistency with the depreciation approach used to determine MTR charges in the MTR Model.

5.54 Under the economic depreciation approach, the algorithm in the MTR Model assumes that the present value (**"PV"**) of expenditures equates to the PV of revenues over the model time horizon. It does this by considering not just the trends in operating and capital expenditure associated with the assets, but also the levels of economic output that can be generated by those assets each year. This methodology therefore better aligns the attribution of cost over time in line with the usage of the network, particularly in the presence of large scale up-front investment in anticipation of future capacity needs. This leads to the fundamental equation of the economic depreciation calculation that is:

$$PV\ (expenditures) = PV\ (unit\ cost \times output)$$

5.55 In the above equation, “unit cost ×output” is representative of the cost-oriented revenues that can be generated by the operator.

5.56 More details on the treatment of economic cost recovery in relation to the MTR Model can be found in Section 3.4.2 and Section 8 of the MVCO Decision Specification Document.

5.57 The calculation of the cost recovered in the MTR Model also needs to reflect the time value of money. In the MTR Model this is accounted for by the application of a discount factor on future cash flows, and ComReg’s view is that the discount factor should continue to be based on the regulated WACC (currently 8.63% as per ComReg Decision No D15/14[89]) for MNOs.

5.58 Since the MTR Model works in real 2017 Euro, the 8.63% figure for WACC was first transformed into a real-terms WACC over time by removing inflation (in the same way as in the 2016 MTR Model). AM based inflation on the consumer price index (**“CPI”**).

5.59 The MTR Model discounts costs recovered in the years after a network element is purchased by an amount equal to the WACC. This ensures that the cost of capital required for the network element is also returned to the operator.

5.60 Basing the calculation of the costs of mobile call origination in the MVCO Decision Model on the same implementation parameters as used in the MTR Model also means that the time series, namely the period of years across which demand and asset volumes are calculated in the MTR Model, is consistent with the time series used to calculate the MTR charges proposed in the Termination Markets Pricing Decision, which used a modelling timeframe of 2003–2053.

5.61 The MTR Model is also capable of deriving service costs using both LRAIC+ and LRIC principles. AM have added the capability to calculate both the LRIC+ and the LRAIC+ of MVCO in the MVCO Decision Model. This allows a comparison between the network charges for MVCO under both approaches.

5.62 ComReg derived the Pure LRIC-based MTRs in the 2019 Termination Markets Pricing Decision with reference to the increment defined for the wholesale MVCT service but, as noted in paragraph 4.136 of the Consultation, the DotEcon Report recommends that the relevant increment for the calculation of the relevant network costs for calls to NGNs is defined as all mobile-originating voice minutes, including both mobile-originating off-net voice minutes and mobile-originating legs of on-net

[89]ComReg Document No 14/136 (D15/14): “*Cost of Capital - Mobile Telecommunications; Fixed Line telecommunications; Broadcasting (Market A and Market B)*”.Please see : https://www.comreg.ie/publication/cost-of-capital/

voice minutes. This can be done using a LRIC approach by calculating the incremental costs of call origination where the increment is defined to include all calls originating on the mobile network.

5.63 However, the costs of call origination can also be calculated using a LRAIC+ approach where the call origination costs are derived with reference to all the different traffic services carried on the different parts of the network, and ComReg is of the preliminary view that a LRAIC+ approach is also consistent with the DotEcon recommendation in that the all traffic increment underpinning the LRAIC calculations includes all calls originating on the mobile network within the same increment. Therefore, the MVCO Decision Model also calculates a blended LRAIC+ for MVCO services. The services included in the blend are as follows:

(a) 2G on-net voice minutes (outgoing leg);

(b) 2G domestic outgoing from mobile voice minutes;

(c) 2G international/roaming outgoing from mobile voice minutes;

(d) 3G on-net voice minutes (outgoing leg);

(e) 3G domestic outgoing from mobile voice minutes;

(f) 3G international/roaming outgoing from mobile voice minutes;

(g) 4G on-net voice minutes (outgoing leg);

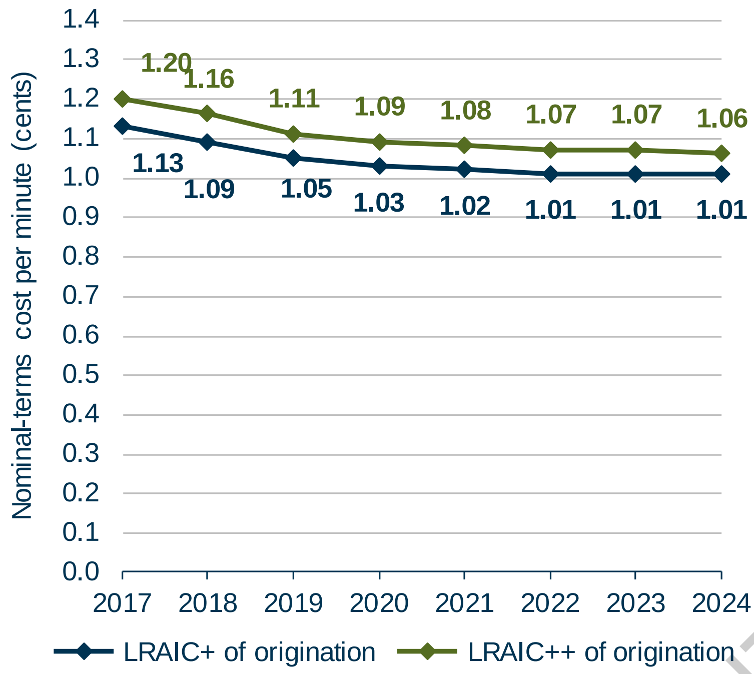
(h) 4G domestic outgoing from mobile voice minutes and;

(i) 4G international/roaming outgoing from mobile voice minutes.

5.64 Defining the increment in this way is equivalent to a large increment approach and ensures that the costs of origination are derived with reference to all mobile origination calls (including calls to NGNs), with a mark-up for common costs; that is, all origination traffic is treated as incremental, not just mobile-originated voice to NGNs, and a contribution from all common costs is also added. AM have also calculated a "LRAIC++" for mobile voice origination, by including a further mark-up for the costs unrecovered by MVCT. ComReg preliminary view is that these costs are recovered across all other services (i.e. excluding MVCT but including SMS and data services) based on an equi-proportionate mark-up calculated for each year.

5.65 The network LRAIC+ and LRAIC++ for mobile-voice-origination off-net is shown below in Figure 17.

Figure 17: Network LRAIC+ (black) and LRAIC++ (green) of mobile voice origination over time)



Source: Analysys Mason, 2019

5.66 As ComReg is of the view that cost-oriented charges for call origination to NGNs should be based on a LRAIC+ approach and that the rates should also include an additional mark-up to allow for recovery of a portion of common costs that are not recovered in the Pure LRIC-based charges for MTRs, the network costs that should be recovered in the MVCO charges to Freephone NGNs are the LRAIC++ rates represented by the green line in Figure 17. Adopting rates that recover all efficiently incurred relevant network costs (including a contribution to common costs) from calls originated to Freephone NGNs should ensure that the investment incentives for MNOs are maintained while the interests of end-users are protected.

5.2.7 Modelling of retail costs

5.67 The MTR Model was primarily concerned with deriving a wholesale cost for MVCT on a Pure LRIC basis. However, as well as being of the preliminary view that MNOs would expect to recover the network costs associated with mobile call origination to NGNs on a LRAIC+ basis, ComReg is also of the preliminary view that MNOs/MVNOs would expect to recover the relevant retail costs when their retail customer base make calls to NGNs (including Freephone numbers) hosted on other networks. The LRAIC+ derived in the MVCO Decision Model only covers the network costs (plus a mark-up for relevant common costs) associated with call origination. As a result, a retail MVNO may receive no revenue for a Freephone call made by one of its customers as the LRAIC+ rate only compensates the MNO for the cost it incurs in switching and transmitting the originating leg of the call on its network. Under the current FVCO regulation for NGNs Eircom is also allowed an additional mark-up for “*reasonable billing costs associated with the service; and an additional bad debt surcharge*”. This is essentially a payment to Eircom retail to allow it recover relevant retail costs and suggests that the cost-oriented charges for calls to NGNs should also allow for the recovery of relevant retail costs.

5.68 Consequently, in order to derive a reasonable total cost of mobile voice origination, ComReg and its advisers requested data from MNOs, including MVNOs, with a view to identifying relevant retail costs for the various originating call categories including calls to Freephone numbers and calls to other NGNs. Based on the data received from all MNOs, AM have identified retail costs that could potentially form the basis of an additional mark-up to be added to the LRAIC+ of network costs derived in the MTR Model. These are:

(a) retail billing costs

(b) an allowance for bad-debt recovery

(c) other product-related costs (such as development/IT)

(d) retail-related business overheads

5.69 Only one MNO was able to provide information on its estimated opex for its billing platform in its most recent completed financial year, and based on an analysis of these costs combined with information on traffic and subscriber volumes extracted from ComReg’s quarterly key data reports, AM estimated an average retail billing opex per retail billing event to be [✂[redacted]] cents, giving a retail billing cost of [✂[redacted]] cents per voice call (equivalent to [✂[redacted]] cents per voice minute assuming a call duration of 3.5 minutes). AM also estimated an average bad debt cost per call of [✂[redacted]] cents per minute in 2018. With respect to other retail costs, only one MNO [✂[redacted]] submitted cost data. This submission included an estimated contribution per minute of [✂[redacted]] cents for sales and marketing costs, as well as [✂[redacted]] cents for other costs (specifically, capturing product development and IT support systems). Further detail on the approach AM has taken to estimate retail related costs can be found in the Annex “*Report for ComReg: Additional cost modelling for mobile voice origination*”[90] to the MVCO Decision Specification Document (**“AM Annex”**).

5.70 In the Consultation ComReg was also of the preliminary view that not all retail costs are equally relevant to Freephone calls and calls to other NGNs. For example, as noted in Section 4.6, the DotEcon Report recognises that Freephone calls are free to the calling party, which means that the retail bad debt and revenue collection costs that are relevant to other originating calls would not be incurred in the case of Freephone calls, although some element of billing systems costs would still be relevant as the call data still needs to be collated to facilitate billing the called party hosted on the terminating network. Similarly, it could be argued that the marketing and sales costs for calls to Freephone numbers tends to be incurred by the service provider receiving the call, so the retail marketing and sales costs that are relevant

[90] Please see Figure E:7 of Annex E of ComReg Document No 20/04b

to other originated calls would not be as relevant to Freephone. Other costs such as product management or customer acquisition costs (including handset subsidies) could be considered relevant to all calls. The MTR Model also assumes an uplift of 12% to network costs for business-related overheads and ComReg was of the preliminary view in the Consultation that the same uplift should be applied to the relevant retail costs to estimate the mobile retail-related business overheads. ComReg remains of this view.

5.71 Based on the analysis undertaken by AM a summary of the retail costs identified as potentially attributable with calls originated to Freephone NGNs and calls to other NGNs is shown below:

Table 7: Summary of possible retail cost components, cents per minute [✂PARTIALLY REDACTED]

Category	Freephone numbers	Other NGNs
Billing	[✂ [redacted]]	[✂ [redacted]]
Bad debt related	–	[✂ [redacted]]
Sales and marketing	–	[✂ [redacted]
Other costs	[✂ [redacted]	[✂ [redacted]
Overheads (12% of the above)	[✂ [redacted]	[✂ [redacted]]
Total retail costs	**0.53**	**0.78**

Source: Analysys Mason and ComReg, 2019

5.3 ComReg's Final Position on Price Control for NGN calls originated by MNOs

5.3.1 ComReg's Position in the Consultation

5.72 ComReg was of the preliminary view in the Consultation that cost oriented charges for calls to NGNs should be informed by an analysis of network costs based on a LRAIC++ approach with an initial mark-up to include the recovery for network-related overheads and a further mark-up to allow for recovery of a proportion of common costs that were not recovered by the Pure LRIC approach used to set MTRs in the Termination Markets Pricing Decision.

5.73 ComReg was also of the preliminary view that, in order to minimise any distortions that might affect the choice of SPs between different NGN number ranges and between NGNs and geo-numbers, cost-oriented charges should also allow for the recovery of retail costs that are considered relevant to calls to the different categories of NGNs. Combining the LRAIC++ of network costs identified in Figure 15 of the Consultation with the possible retail unit cost categories identified in Table 8 of the Consultation gives the following cost-oriented WORs:

Table 8: WORs for calls to Freephone 1800 from mobile networks (euro cent per minute).

Year	Network Costs	Retail Costs	WOR
2019	1.11	0.53	1.64
2020	1.09	0.53	1.62
2021	1.08	0.53	1.61
2022	1.07	0.53	1.60
2023	1.07	0.53	1.60
2024	1.06	0.53	1.59

Table 9: WORs for calls to other NGNs from mobile networks (euro cent per minute).

Year	Network Costs	Retail Costs	WOR
2019	1.11	0.78	1.89
2020	1.09	0.78	1.87
2021	1.08	0.78	1.86
2022	1.07	0.78	1.85
2023	1.07	0.78	1.85
2024	1.06	0.78	1.84

5.74 In the Consultation, ComReg's preliminary view was that the schedule of tariffs for MVCO to Freephone should be applied over the period as outlined in the Table above. This also aligns with the guidance from DotEcon[91], for both the period assessed and the use of annual prices rather than a glide path. A number of Respondents to the Consultation raised issue with the lack of a glide path. Please see below.

5.3.2 ComReg's Assessment of Respondents views to Question 8

5.75 In the Consultation ComReg asked interested parties if they agreed that the Draft MVCO Model is appropriate for determining a LRAIC+ for Mobile Voice Call Origination to a Freephone NGN.

5.76 Five Respondents replied directly to this question.

5.77 Two operators agreed with the approach. One Respondent noted that it did not agree with overall pricing approach and provided no further comment. One Respondent repeated comments made in response to Question 7. One Respondent stated that it disagreed with the specific approach.

[91] See Annex A.9 of the DotEcon Report "A price control for regulation of wholesale charges for non-geographic numbers"

5.78 The issues raised were in relation to volumes and the impact on operators which was linked to the lack of a glide path. The issue in relation to volumes and ComReg's assessment and response to same have been outlined at Annex 7, paragraphs A7.205 to A7.208 . The comments regarding the impact on operators and glide path and ComReg's assessment and response to same have been outlined at Annex 7, paragraphs A7.209 to A7.216.

5.3.3 ComReg's Final Position

5.79 Having considered the views of Respondents and the concerns raised, ComReg remains of the view that the Draft MVCO Model, now the MVCO Decision Model is appropriate for determining the LRAIC+ for Mobile Voice Call Origination to a Freephone NGN.

5.3.4 ComReg's Assessment of Respondents views to Question 9

5.80 In the Consultation ComReg also asked interested parties if they agreed with the approach to include an additional mark-up to the LRAIC+ for MVCO to allow for the recovery of proportion of the common costs not recovered in the Pure LRIC for MVCT.

5.81 Six Respondents replied directly to this question.

5.82 Three Respondents agreed with the approach and provided some comments. Two Respondents referred to the responses to previous questions. One Respondent stated that it had no comment on the basis that it does not agree with overall proposal.

5.83 The main comment made in response was from an Respondent who agrees that there should be an additional mark-up, however stated that the mark-up chosen by ComReg does not cover all the costs. Please refer to Annex 7, paragraphs A7.225 to A7.228.

5.3.5 ComReg's Final Position

5.84 While ComReg notes the comments made on costs, the Respondent in question did not go into further detail or quantify any additional costs that should be included. On the basis of information available, ComReg therefore does not propose amending the additional mark-up calculation.

5.3.6 ComReg's Assessment of Respondents views to Question 10.

5.85 ComReg asked interested parties if they agreed with the approach taken to quantify the reasonable retail costs that are relevant to calls originating to Freephone numbers hosted on another operator's network.

5.86 Six Respondents replied directly to this question.

5.87 Two Respondents agreed. One Respondent stated that it had no comment on the basis that it disagreed with the overall proposal. One Respondent referred to its response to previous questions.

5.88 One Respondent provided comments that appear to be more relevant to Question 9 (on whether a retail mark-up should be included) and did not address the question of what should be included in the mark-up. Please refer to paragraph A7.236.

5.89 One Respondent stated that there were no retail costs that should, on a reasonable basis, be recovered by the operator originating a call to a Freephone service, stating that there was a strong argument that the marketing and product management costs relevant to the Freephone service were incurred by the TO rather than the OO. Please refer to Annex 7, paragraph A7.242 to A7.243 for ComReg's assessment of this issue and response.

5.90 One Respondent stated that ComReg was not capturing all of the additional costs relevant to Freephone numbers however did not provide detailed evidence in support of this statement.

5.3.7 ComReg's Final Position

5.91 Having considered the points raised by Respondents ComReg remains of the view that the approach used to quantify the reasonable retails costs is appropriate.

Chapter 6

Price control for wholesale NGN calls originated by FNOs

6.1 Overview

6.1 In this chapter, ComReg discusses the model used to determine the appropriate level of costs associated with calls to NGNs originating from fixed networks. In Chapter 6 of the Consultation ComReg set out its preliminary view on the cost modelling approach to determine the appropriate fixed WOR for Freephone numbers.

6.2 In the Consultation ComReg was of the preliminary view that, in order to maximise consistency with the cost analysis underpinning the calculation of FVCT charges, the FTR Model should be amended to derive the cost oriented charges to apply to fixed-originated voice calls to NGNs. Consequently, ComReg proposed to use the amended FTR Model to calculate costs relevant to FVCO using a LRAIC+ approach. In this regard, ComReg appointed TERA to further amend the FTR Model to calculate the LRAIC+ charges for FVCO to Freephone NGNs (referred to at the time of consulting as the **"Draft FVCO Model"**). TERA also prepared a specification document that outlined the main amendments that have been made to the FTR Model in order to calculate the LRAIC+ charges for FVCO to Freephone NGNs in the Draft FVCO Model (**"Draft FVCO Specification"**). A non-confidential version of this specification document was published on ComReg's website, document number 19/46c.

6.3 As outlined in the Costing Principles at Section 4.7 of this Decision document, ComReg is proposing to use a LRAIC+ approach to derive the cost for originated voice calls (to NGNs). ComReg has previously appointed TERA to develop a cost model to determine the costs of FVCT. This FTR Model was itself based on a model of a fixed core network developed to support cost oriented prices imposed on Eircom for broadband services in the wholesale local access (**"WLA"**) and wholesale central access (**"WCA"**) markets as part of ComReg Decision D11/18 [92] (**"2018 NGN Core Model"**).

[92] See ComReg Decision 11/18, Document 18/95, "Pricing of Wholesale Broadband Services in the WLA and WCA Markets", 19 Nov 2018, https://www.comreg.ie/publication/pricing-of-wholesale-broadband-services-in-the-wla-and-wca-markets/ for details of the finished NGN Core Model

6.4 ComReg consulted on its initial views in Questions 11, 12 and 13 of Chapter 6 of the Consultation. The Submissions from Respondents to those questions are dealt with in detail in Annex 7. Having considered the Submissions ComReg gives its final position on the issues raised.

6.5 Following consideration of the Submissions to the Consultation TERA has updated the Draft FVCO Model and specification document for the purposes of this Decision. The revised model is now referred to as the **"FVCO Decision Model"** and the updated specification document is now referred to as the **"Final FVCO Specification Document"**[93]. There was a modification applied to the FVCO Decision Model which results in slight changes in call tariffs between the Decision and Consultation. This modification resulted in increased costs per call minute of approximately 0.05 cent in each of the years up to an including 2024. The issue was in relation to call origination traffic volumes which were overstated in the Consultation version of the cost model due to inclusion of transit traffic volumes. ComReg's consideration of the Consultation Submissions are summarised in this chapter and are discussed in detail in Annex 7 of this Decision.

6.2 Fixed voice call origination modelling

6.2.1 Background

6.6 In 2018 ComReg completed its market review of the WLA and WCA markets, and in that context developed the 2018 NGN Core Model. The fixed core network supports a range of services including voice, leased lines, broadband and IPTV / multi-casting and the NGN Core Model can be used to determine the LRAIC+ costs for the provision of core network services.

6.7 The 2018 NGN Core Model ComReg has also been used as the basis of the FTR Model[94], which is the cost model that ComReg has used to set prices for voice services in the wholesale market for the provision of FVCT. The charges for FVCT were set on a Pure LRIC basis but the FTR Model also has the capability to determine charges for FVCT on a LRAIC+ basis.

6.8 The main difference between the FTR Model and the 2018 NGN Core Model is that the FTR Model includes additional modelling of voice specific costs including additional analysis of the transmission costs associated with voice services to facilitate the costing of sub sets of voice services such as call origination, transit or termination. ComReg has further adapted the FTR Model to determine the costs

[93] See ComReg Document 20/04c

[94] FTR Model is included in the Termination Markets Pricing Decision

relevant to FVCO on a LRAIC+ basis to inform the cost-oriented charges for calls originated to Freephone NGNs.

6.9 The following sections provide an overview as per the Consultation, of the main modelling principles and methodologies that applied in the FTR Model that is used to model the Pure LRIC cost of FTRs, together with an outline of the refinements to the modelling approach that have been considered specifically for the purposes of modelling the LRAIC+ cost for FVCO in the FVCO Decision Model, guided by the recommended costing principles contained in the DotEcon Report.

6.3 Overview of the FVCO Decision Model

6.10 To maintain consistency with the overview of the MVCO Decision Model in Chapter 5 of the Consultation, the main modelling parameters in the FVCO Decision Model have been grouped as follows:

(a) operator-related parameters – including the form of the modelled operator (hypothetical efficient existing operator), structural implementation (bottom-up model using scorched node approach reflecting actual operator data), market share assumptions and network footprint;

(b) service-related parameters – including the service set (voice, broadband, leased lines, IPTV), service volumes per customer, average usage/routing factors;

(c) technology-related parameters – including, transmission network and network expenditure;

(d) implementation-related parameters – including depreciation approach, WACC, LRAIC calculations, recovery of common costs, modelling timeframe.

6.11 This chapter also provides an overview of a number of amendments that have been made in the FVCO Decision Model to facilitate the calculation of a LRAIC+ charge for FVCO to Freephone NGNs, including the analysis undertaken by ComReg to identify the level of retail costs that should be recovered from FVCO to Freephone NGNs. Additional insight into the cost model structure and design can be found in the specification document provided by TERA Consultants.

6.3.1 Operator Related Parameters

6.12 In the Termination Markets Pricing Decision, ComReg concluded that cost modelling for the FTR Model should be based on a bottom-up model of a hypothetical efficient existing operator with Eircom's scale. Eircom is the only fixed operator with national coverage in Ireland and so Eircom's scale best represents the actual scale achievable in the Irish market. The model also follows a scorched node approach as the hypothetical efficient existing operator is assumed to operate an NGN network that is located in Eircom's exchanges and serving Eircom's customer base.

6.13 Therefore, ComReg has constructed the 2018 NGN Core Model and the related FTR Model and MVCO Decision Model, based on information sourced from Eircom. Such information includes:

(a) demand, e.g. customer numbers and location, traffic volumes per customer, busy hour traffic profile;

(b) network design e.g. exchange location, choice of modern technologies, efficient engineering rules, planned asset capacities;

(c) and cost e.g. unit capex, asset lives.

6.14 The operating cost data used in the model is based on data extracted from Eircom's cost accounting systems but adjusted to reflect the fact that the modelled network design is more efficient than Eircom's actual core network. Eircom still operates a number of legacy platforms alongside the Next Generation technologies it is deploying in its core network and this requires that some efficiency adjustments are applied to the operating costs processed in the 2018 NGN Core Model and the related FTR and MVCO Decision Models.

6.15 The fact that the model recognises the technology choices and network locations that are evidenced in Eircom's fixed core network helps ensure that the bottom-up modelling of the fixed core network costs of the hypothetical efficient existing operator is consistent with the recommendation outlined in the DotEcon Report and also with the 2009 Termination Rates Recommendation which requires that a cost model should "*produce as robust results as possible and to avoid large discrepancies in operating cost, capital cost and cost allocation between a hypothetical and a real operator*". It will also ensure that the cost oriented prices produced by such models will suitably inform operator's 'build or buy' decisions and help promote efficient investment and innovation.

6.3.2 Service Related Parameters

6.16 A bottom-up model dimensions the network based on the level of demand that the network is designed to support so it is first necessary to gain an understanding of the aggregate historic and forecast traffic that is assumed to be supported by the network over the timeframe of the model. Service parameters in the 2018 NGN Core Model includes information on customer numbers and location, the volumes of the different services supported on the fixed core network (voice, leased line, broadband and IPTC services) and the associated traffic patterns. The FVCO Decision Model assumes the same level of traffic demand that is modelled in the FTR Model and the 2018 NGN Core Model thereby ensuring that the same economies of scale and scope (reducing the unit costs for all services) are recognised in all three models.

6.17 To determine the network capacity demands for voice services, the 2018 NGN Core Model first calculates the number of voice channels active at the busiest hour of the year in Erlang[95] as a percentage of the total customer base. The number of busy hour channels is augmented with a cell blocking probability formula before being converted to the number of equivalent links of STM-1 capacity, then all voice traffic is converted in Mbps. Peak traffic demands for broadband and leased lines (using exchange sites) are also calculated based on the usage of the different parts of the fixed core network, and voice capacity demand is further split between the various call types i.e. local, national, primary termination etc. as each call type can use the network assets in different ways.

6.18 Average usage factors measure how each of the services modelled uses the various network components in the fixed core network and, when combined with service volumes, capture the usage of the various network components by each service. This, in turn, informs both the network dimensioning algorithms that determine network asset quantities in the bottom-up model and the subsequent allocation of the associated network costs to services. The FVCO Decision Model uses the similar usage factors as the 2018 NGN Core model and the FTR Model, but which reflect more detailed routing factor information for FVCO services as outlined in the Final FVCO specification (in sections 2.2 and 2.3) document. Consequently the modelling approach in the FVCO Decision Model adheres to the principle of using demand forecast data consistent with other relevant modelling exercises, such as those employed in the determinations within the proposed FTR cost model.

6.19 In order to categorise the traffic between the different traffic topologies (voice, broadband and leased lines), the model uses a list of the exchanges (access nodes) based on information provided by Eircom with:

(a) The site code of the aggregation node to which it is connected;

(b) The region of the site (the NGN core network is divided in 17 regions);

(c) If the site is connected to an APT.

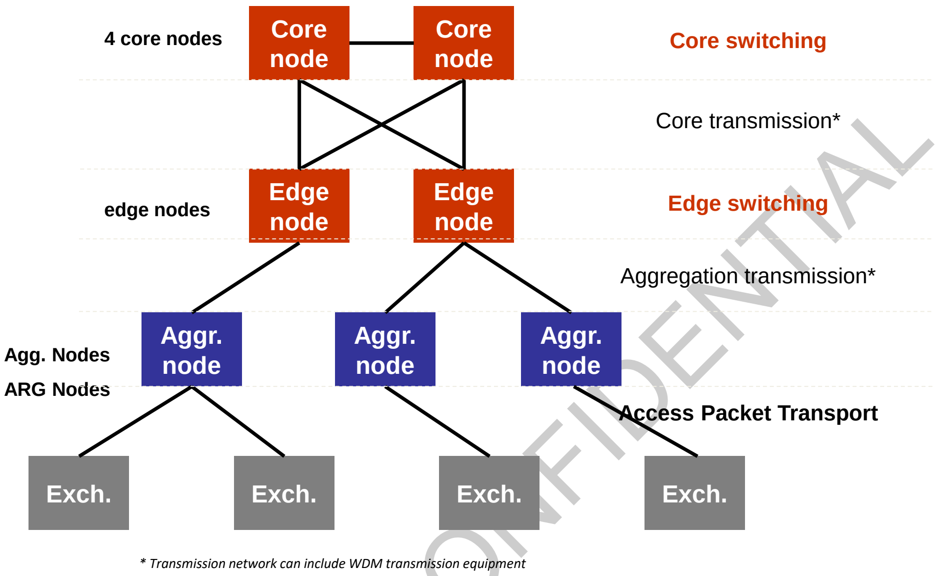
6.20 This process, permitted the allocation of network costs to all services using the core NGN including voice products. The more detailed analysis of the voice traffic demands and routing factors associated with each variant of voice services ensures that the FVCO Decision Model is capable of determining the LRAIC+ charges for call origination to Freephone Non Geo numbers. Therefore the modelling approach adheres to the principle of using demand forecast data consistent with other relevant modelling exercises, such as those employed in the determinations within the proposed FTR cost model.

[95] An Erlang is a measurement of telecommunications traffic on a network and represents the continuous use of one voice path.

6.3.3 Technology Related Parameters

6.21 As noted above, the FVCO Decision Model is ultimately based on the 2018 NGN Core Model, which was developed using a scorched node approach. As a result the model references the location of Eircom's aggregation nodes, edge nodes and core nodes. It also considers when and where Eircom had deployed, or was planning to deploy, DSLAMs and other next generation technologies and the core network is organised in several hierarchical levels (APT, aggregation, core) as set out in Figure 18:

Figure 18: Overview of Eircom's NGN



Source: TERA Consultants

6.22 This network structure is considered to be representative of an efficient network topology in Ireland over which fixed voice and other core network services are delivered for the period of the proposed price control and beyond. Network components in the fixed core network includes the nodes and switching equipment necessary to provide the various services such as call routing, data transfer and internet access for the subscribers connected through the fixed access network as well as the transmission infrastructure that connects this active equipment to ensure the transport of all core network traffic between the different network equipment nodes.

6.23 To dimension the fixed core network, service demand from all traffic services is combined with network usage/routing factors to form aggregated cost drivers to capture the relative usage of each network component by each unit of service demand. The bottom-up model then applies the technology parameters of the hypothetical FNO to the derived level of network demand to determine the types and quantities of network equipment and infrastructure that will be required to deliver those services to end-users.

6.24 The 2018 NGN Core Model uses internet protocol ("**IP**') switching[96] equipment in the switching layer and the transmission layer assumes the deployment of fibre cables as well as civil engineering infrastructure (trenches, ducts) between the core nodes in the various layers of the fixed core network. The NGN Core Model assumes trench sharing between the access and core networks and the links between aggregation node and IP edge node sites also share part of the trench with the aggregation to APT node. The trench lengths are calibrated so that a similar length of trench is considered in the modelled core network as Eircom has in reality.

6.25 The 2018 NGN Core Model also has the functionality to model wavelength division multiplexing[97] (**"WDM"**) in the transmission layer but, given that the 2018 NGN Core Model includes sufficient fibre capacity between core network nodes to cater for the assumed levels of demand, CWDM or DWDM is not required to augment the fibre capacity and the costs of these technologies are not included in the cost base used to determine cost oriented tariffs for services in the 2018 NGN Core Model. However, ROADM[98] technology is assumed to be deployed for each and every EDGE to CORE link and all the AGG to Edge links that are required to support over 100 Gbps of traffic.

6.26 Interconnection facilities, which connect the transmission and signalling systems or voice platforms of FNOs, permit calls to be set up between customers of those operators. When connecting networks both use TDM for voice calls the signalling used is SS7[99]. Where voice is transported using IP then signalling via SIP or SIP-I[100] protocols may be used. Throughout Europe there is a transition (albeit quite slow) from TDM to SIP interconnection

6.27 Eircom has recently confirmed that SIP interconnection is to be made available for interconnection to its network late in the year 2019. ComReg has assessed the impact of using exclusively either TDM or SIP interconnection by modelling both options in the FVCO Decision Model and noted that the impact on tariffs for fixed voice origination services was only marginally higher when SIP interconnection was exclusively used. In addition the expectation is that during the medium term, a large share of interconnected voice traffic will still be connected over TDM technology. For

[96] The term IP Switching here refers to the conveyance of data or packetized voice at either layer 2 or 3 of the Open Systems Interconnection model.

[97] WDM is a method of combining multiple optical carrier signals at various wavelengths for transmission along a single fibre optic cable.

[98] Reconfigurable Optical Add-Drop Multiplexers are used in systems that employ wavelength division multiplexing.

[99] Signalling System No. 7 (SS7) also known as C7 is the core signalling/control protocol used within legacy fixed and mobile networks. This is used to set up and tear down most of the world's public switched telephone network (PSTN) telephone calls. It also performs number translation, local number portability, prepaid billing, Short Message Service (SMS), and other mass market services.

[100] SIP with encapsulated ISDN User Part signalling ("**ISUP**").

these reasons ComReg is of the view that the FVCO Decision Model should continue to assume that voice interconnection should be based on TDM only.

6.28 Regardless of the form of interconnection for voice services, the voice platform cost base that was included in the FTR Model and now in the FVCO Decision Model reflects the use of an IMS IP based network, with facilities such as Media Gateways which can be leveraged to interconnect via TDM or SIP. In that context the voice platform cost base reflects that of a modern efficient network design. Other network related costs such as buildings, power and network management systems are included in the 2018 NGN Core Model. The process of calculation of such costs is set out in the Final FVCO Specification Document.

6.29 Before finalisation, a calibration exercise was undertaken to ensure the asset count in the model was comparable to the asset count in Eircom's core network after efficiency adjustments had been considered. ComReg is therefore of the opinion that the technological parameters that are applied in the 2018 NGN CORE Model and also inform the FVCO Decision Model, are appropriate for a hypothetical efficient network operator's with Eircom's scale and can support the delivery of the modelled level of core network services, including fixed voice, for the duration of the proposed price control and beyond.

6.3.4 Implementation Related Parameters

6.30 TERA proposed that depreciation be based on a tilted annuity approach. This has been consistently applied by ComReg for modelling of Eircom's core network and is regarded as a reasonable proxy for economic depreciation as recommended in the DotEcon Report. TERA also address this point in the specification document, noting that a titled annuity mechanism is good proxy for economic deprecation in a mature network where fluctuations in demand are relatively stable.

6.31 A nominal pre-tax weighted average costs of capital[101] (**"WACC"**) rate of 8.18% is used in the tilted annuity equations applied in the Draft FVCO Model. This is consistent with the rate set out in ComReg Decision D15/14[102] for the fixed line telecommunications sector.

6.32 Operating costs in the model are based on the core network operating costs contained in Eircom's cost accounting systems that are used to produce the audited regulatory accounts[103]. Efficiency adjustments are applied to these operating costs

[101] A weighted average cost of capital is the rate that a company is expected to pay on average to all its security holders to finance its assets.

[102] ComReg Decision D15/14, Document 14/136,"Cost of Capital – Mobile Telecommunications – Fixed Line telecommunications – Broadcasting (Market A and Market B)" Response to Consultation and Decision" 18/12/2014, https://www.comreg.ie/media/dlm_uploads/2015/12/ComReg14136.pdf

[103] See https://www.comreg.ie/media/2018/12/Note1a.pdf for auditing information

to reflect the fact that Eircom continue to operate a legacy core network in parallel with its NGN core network[104].The 2018 NGN Core Model attributes the operating costs from Eircom's accounts (net of efficiency adjustments) to each part of the NGN network by category (e.g. exchange to Aggregation links, Aggregation node, Edge node, Core node and all other relevant links connecting the locations of the routers). The cost of each network asset is then allocated to each of the NGN network regions using allocation keys based on the capital cost for equipment and trench length. The NGN Core Model allocates the operating costs between the three services its supports, including Broadband, Voice and Leased Lines. This process is set out in greater detail in ComReg Decision D11/18[105].

6.33 Basing the FVCO Decision Model on the 2018 NGN Core model also means that the LRAIC+ approach adopted to determine the costs of FVCO should also be consistent with the LRAIC+ approach previously adopted to cost other services carried on the core NGN, such as broadband services. ComReg D11/18 determined that a revenue per user approach (referred to as Option 3) adjusted to take account of the use of each of the network layers by a given service (as discussed at paragraphs 8.89-8.91) is the appropriate basis for allocating the fixed costs across the various services in the NGN Core Model. Applying the revenue per user approach means that the level of fixed and common costs that are attributed to voice services is higher than it would be if an alternative such as a capacity based approach is adopted. Further discussion of the treatment of fixed costs in NGN Core model can be found in Section 8.3 of ComReg D11/18.

6.34 As the FVCO Decision Model is a bottom-up model using a tilted annuity approach the network is dimensioned each year based on the assumed level of demand from all services in that year and the model time-frame covers the period 2017 to 2024.

6.3.5 Further amendments in FVCO Decision Model

6.35 In the following sections we outline the amendments to the FTR Model that ComReg considers are appropriate for determining the LRAIC+ cost of FVCO. These include the amendments necessary:

(a) to calculate the network costs of FVCO on a LRAIC+ basis;

(b) the additional mark-up to allow for the recovery costs (i.e. common and joint costs) that are unrecovered due to setting the charges for termination services on a Pure LRIC basis and;

(c) the allowance to recover relevant retail costs of the originating operator in the FVCO to Freephone NGNs charge.

[104] See Annex A, ComReg D11/18, Sections A1.146 to A1.156

[105] ComReg D11/18: Pricing of wholesale broadband services (WLA and WCA Markets) "*Response to Consultation Document 17/26 and Final Decision*"

6.36 The FTR Model has the capability to calculate FTR charges using either a Pure LRIC or a LRAIC+ approach and a key requirement of the FVCO Decision Model is to calculate the LRAIC+ charges for FVCO traffic. While the 2018 NGN Core Model and the FTR model include the demands from all services, including all call traffic types based on a combination of historic data and forecast service demands, further analysis was undertaken in the FVCO Decision Model to isolate the traffic volumes and routing factors associated with FVCO services to facilitate the calculation of the FVCO services' share of the general NGN transmission and node costs.

6.37 Modelling the LRAIC+ of FVCO services also has to consider the costs in the NGN Core Network that is specific to voice services, which include the costs associated with the voice platform in the core network. The voice services platform costs worksheet was an add-on that was introduced to the 2018 NGN Core Model during the development of the FTR Model in support the calculation of FTRs and the same worksheet is now leveraged in the FVCO Decision Model to identify the allocation of the voice platform costs to FVCO services.

6.38 TERA Consultants have added two further sheets to the FTR Model called "FVCO Variable Platform Costs" and "FVCO LRAIC Analysis". The worksheets compile the costs associated with the various cost components that are derived elsewhere in FVCO Decision Model to derive the LRAIC+ costs for FVCO services. This is done by deriving LRAIC+ costs that includes the general NGN transmission and equipment costs that are shared between voice, broadband and other core network service categories as well as the voice specific platform costs, including fixed costs associated with the IMS platform. The fixed costs of the IMS platform are the capital costs that are annualised in the FVCO Decision Model using a tilted annuity based on the original capital expenditure and an assumed price trend. As the costs are fixed they do not form part of the Pure LRIC cost of FVCT but are relevant to the LRAIC+ calculation of FVCO.

6.39 The operating costs for the voice platform are analysed in more detail in the FVCO Decision Model to facilitate the calculation of the LRAIC+ charges for FVCO. Eircom provided information on the various licence and support costs for the IMS platform and the level of costs included in the FVCO Decision Model is based on the assumed level of demand for voice services. Mark-ups for the recovery of associated indirect costs are also included and checks are undertaken to ensure that there is no double-recovery of costs and that the overall level of operating costs recovered against all services using a LRAIC+ approach in the FVCO Decision Model is consistent with the costs of a hypothetical efficient operator.

6.40 In the Termination Markets Pricing Decision, ComReg also considered the issue of the recovery of costs (i.e. common and joint costs) that are unrecovered due to setting the charges for FVCT services on a Pure LRIC basis and decided that efficient costs unrecovered from Eircom's voice termination services could be recovered from other (regulated and unregulated) wholesale and/or retail voice/non-voice services as appropriate. Therefore, ComReg's preliminary view is to include an allowance (for a proportion of the costs that are unrecovered by the Pure LRIC-based charges for FVCT) in the network costs associated with the charges for FVCO to Freephone NGNs. The level of unrecovered costs is first identified as the differential between the revenues that are generated based on the Pure LRIC based charges for FVCO when compared with revenues that would be generated if a LRAIC+ charge for FVCO was use. This differential is then derived as a percentage of the total wholesale/network costs in the most recent set of its separated accounts, excluding fixed voice terminations to determine the approximate percentage mark-up. As a result, the inclusion of this additional mark-up increases the LRAIC+ for FVCO service by less than 1%.

6.3.6 Modelling of retail costs

6.41 In the Consultation, ComReg was also of the preliminary view that there is a need to include a mark-up to allow for the recovery of relevant retail costs in the charges for FVCO to Freephone numbers. This approach is consistent with the existing FVCO regulation that applies to Eircom's tariffs for Non Geo Number call origination, which permits such a mark-up. In this context ComReg sought information from FNOs and FVNOs on the retail costs that relate to calls originated to Non-geographic number services including calls to Freephone numbers. The data provided by FNO/FVNOs was limited but based on an analysis of this data, ComReg and its advisors have identified retail costs that could potentially be added to the network-related costs derived in the FVCO Decision Model.

6.42 The retail cost data provided to ComReg as part of the Consultation was presented in terms of a number of different functional cost categories including product management, marketing and sales, billing and credit management and IT, as well as general and central overheads such as accommodation, finance, personnel and general management costs. However, the cost data was not specific to calls originated to Freephone NGNs and so ComReg has had to make a judgement call, as to the extent that each cost category might be relevant to calls originating to Freephone NGNs.

6.43 For example, the fact that Freephone calls are free to the calling party should minimise the risks associated with revenue collection and bad debt exposure to the originating operator, as the Freephone related revenues are collected by the network operator from the terminating party. Therefore, ComReg was of the preliminary view, that relevant billing costs for call origination to Freephone NGNs should not be expected to make a contribution to bad debt/credit management activities and only the costs associated with collating call records are relevant. ComReg remains of this view.

6.44 Similarly, the marketing and sales costs related to Freephone NGNs tend to be incurred by the service provider receiving the call. Therefore, the level of marketing and sales costs incurred by the originating operator would not be of relevance for calls originated to Freephone NGNs. However, other retail related costs such as product management and/or, a share of IT and central/general overheads could be considered relevant to all originating calls.

6.45 ComReg was of the preliminary view in the Consultation that the analysis of retail costs it has undertaken with TERA, provides a basis for determining the level of retail costs that are relevant to call origination to Freephone NGNs and, consequently, an allowance for retail cost recovery, has been included in the average per minute FVCO charge for Freephone NGNs.

6.4 Derived FVCO to Freephone charges

6.46 The total charges, including the network and retail elements, that are derived in the FVCO Decision Model for the years 2020 - 2024 are as follows:

Table 10: WORs for calls to Freephone 1800 from fixed networks (euro cent per minute).

Year	Network Costs	Retail Costs	WOR
2020	0.600	0.273	0.873
2021	0.627	0.291	0.918
2022	0.652	0.309	0.961
2023	0.670	0.329	1.000
2024	0.695	0.348	1.043

6.47 The tariffs outlined are inclusive of the costs incurred for both the establishment of the call connection and the duration of the call event, based on a 4.4 minute average duration for calls to Freephone NGNs. It should be noted that these tariffs are marginally higher than those outlined in the Consultation (ComReg Document 19/46). There was a modelling modification applied to the FVCO Decision Model which results in slight changes in network costs between the Decision and Consultation. The issue was related to call origination traffic volumes which were slightly overstated in the Consultation version of the cost model due to inclusion of transit traffic volumes. This modification, in conjunction with a given cost base, results in a slightly higher cost per minute (increase of approximately 0.05 cent in each of the years up to and including 2024.

6.48 ComReg was of the preliminary view in the consultation that the schedule of tariffs for call origination should be applied over the period as outlined in the table above. This also aligns with the guidance in the DotEcon Report, for both the period assessed and the use of annual prices rather than a glide path. A number of Respondents raised issue with this proposal. Please see below and Annex 7 (paragraph A7.124.)

6.5 ComReg's Final Position on Price Control for NGN calls originated by FNOs.

6.5.1 ComReg's Position in the Consultation

6.49 ComReg was of the preliminary view that the proposed cost model inputs and assumptions as set out above were appropriate to determine a proposed LRAIC+ cost per minute for FVCO to Freephone numbers in Ireland.

6.5.2 ComReg's Assessment of Respondents views to Question 11

6.50 In the Consultation ComReg asked interested parties if they agreed with ComReg's view that the Draft FVCO Model was appropriate for determining a LRAIC+ cost for Fixed Voice Call Origination to a Freephone NGN.

6.51 Five Respondents replied directly to this question.

6.52 Four Respondents generally agreed. One Respondent did not agree and referred to "reasons already explained". ComReg has taken this to refer to points made in response to Question 6. Please refer to Annex 7, paragraphs A7.163 and A7.170.

6.5.3 ComReg's Final Position

6.53 ComReg remains of the view that the Draft FVCO Model, now the FVCO Decision Model is appropriate for determining the LRAIC+ cost for Fixed Voice Call Origination to a Freephone NGN.

6.5.4 ComReg's Assessment of Respondents views to Question 12

6.54 In the Consultation ComReg asked interested parties if they agreed with the approach taken to include an additional mark-up to the LRAIC+ for FVCO to allow for the recovery of a proportion of the common costs not recovered in the Pure LRIC for Fixed Voice Call Termination.

6.55 Five Respondents replied directly to this question.

6.56 Three Respondents agreed with the proposed approach. One Respondent did not agree and referred again "for the reasons already explained". ComReg has again taken this to refer to points made in response to Question 6. Please refer to Annex 7, paragraphs A7.163 and A7.170.

6.57 One Respondent commented that a mark-up for recovering a proportion of common costs is already built in to LRAIC+ but did not provide any further information.

6.5.5 ComReg's Final Position

6.58 ComReg remains of the view that it is appropriate to include an additional mark-up to the LRAIC+ for FVCO to allow for the proportion of common costs not recovered in the Pure LRIC for Fixed Voice Call Termination.

6.5.6 ComReg's Assessment of Respondents views to Question 13

6.59 In the Consultation ComReg asked interested parties if they agreed with the approach taken to quantify the reasonable retail costs that are relevant to calls originating to Freephone numbers hosted on another operator's network.

6.60 Seven Respondents replied directly to this question.

6.61 One Respondent agreed. Three Respondents stated that they had no comment on the basis that they disagreed with overall proposal.

6.62 One Respondent provided comments that appear to be more relevant to Question 9 (on whether a retail mark-up should be included) and did not address the question of what should be included in the mark-up. Please refer to paragraph A7.236.

6.63 One Respondent stated that there were no retail costs that should, on a reasonable basis, be recovered by the operator originating a call to a Freephone service, stating that there was a strong argument that the marketing and product management costs relevant to the Freephone service are incurred by the TO rather than the OO. Please refer to Annex 7, paragraph A7.242 to A7.243 for ComReg's assessment of this issue and response.

6.64 One Respondent stated that ComReg was not capturing all of the additional costs relevant to Freephone numbers however did not provide detailed evidence in support of this statement.

6.5.7 ComReg's Final Position

6.65 Having considered the points raised by Respondents ComReg remains of the view that the approach used to quantify the reasonable retails costs is appropriate.

Chapter 7

Regulatory Impact Assessment

7.1 Overview

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

7.2 In the Consultation, ComReg noted that its approach to the RIA took into account ComReg's own RIA Guidelines[106], the Department of An Taoiseach's 'Better Regulation' programme[107] and international best practice.[108]

7.3 This Chapter summarises the approach to the RIA taken in the Consultation, Respondents' views on the RIA as well as ComReg's assessment of them. Finally, an updated RIA is presented, which explains the evolution of ComReg's position and takes account of Respondents' comments.

7.2 Position set out in the Consultation

7.4 In Chapter 7 of the Consultation ComReg set out the steps taken in its approach to the RIA (as set out in Section 6.3 below).

7.5 ComReg then followed these steps in assessing its proposed measures. ComReg also took into account the extent to which the proposed measures addressed ComReg's regulatory objectives, namely to:

(a) Promote competition and in particular to encourage efficient investment in infrastructure and promoting innovation;

(b) Contribute to the development of the internal market;

(c) Promote the interests of users within the Community

7.6 ComReg assessed two possible options:

[106] See ComReg Document 07/56a, ComReg, 'Guidelines on ComReg's Approach to Regulatory Impact Assessment', 10 August 2007 (the '**RIA Guidelines**').

[107] See Department of the Taoiseach, 'Regulating Better', January 2004. See also 'Revised RIA Guidelines: How to conduct a Regulatory Impact Analysis', June 2009, (the '**Revised RIA Guidelines**'): https://govacc.per.gov.ie/wp-content/uploads/RevisedRIAGuidelinesJune2009.pdf.

[108] See paragraph 7.3 of the Consultation.

(a) No Intervention

(b) Intervention in the form of a price control with supporting transparency obligations

7.7 Each option was described. The impact on stakeholders was assessed along with assessing the likely impact on competition. ComReg then came to a preliminary conclusion on the preferred approach.

7.2.1 Views of Respondents

7.8 As previously outlined there was a total of eight Submissions to the Consultation. ComReg sought views on the RIA at Question 14. Four operators made specific comments. Some operators made comments elsewhere in their submissions related to elements of the RIA. The details of the issues raised and ComReg's assessment of these issues can be found in Annex 7, paragraphs A7.273 to A7.320.

7.9 Respondents made Submissions in relation to the following: impact on competition and operators, ComReg's basis of intervention, perceived harm, negotiation processes and other issues.

7.3 Steps for assessing regulatory options

7.10 In assessing the available regulatory options, ComReg's approach to the RIA is based on the following five steps:

Step 1: describe the policy issue and identify the objectives

Step 2: identify and describe the regulatory options

Step 3: determine the likely impacts on stakeholders

Step 4: determine the likely impacts on competition

Step 5: assess the likely impacts and choose the best option

7.11 Each step is discussed in detail below.

7.3.1 Step 1: Describe the policy issue and identify the objectives

7.12 ComReg is responsible for regulating the electronic communications sector in the State, in accordance with European Union and Irish Law. This includes managing the national numbering resource which is essential to all telecommunications and thus underpins many key economic and social activities. In exercising its number management function ComReg must ensure, amongst other things, that numbers are used efficiently and in a manner that protects end-users and promotes competition.

7.13 As set out in the NGN Decision, ComReg decided to implement retail remedies with regard to the functioning of the NGN platform. ComReg noted that any issues identified at the wholesale level would be addressed in line with the preferred options identified.

7.14 Having identified the issues arising in the wholesale level in the 2018 NGN Consultation ComReg was of the preliminary view that intervention was justified and proportionate. Having assessed the possibility of No Intervention along with six options for possible intervention[109] the imposition of a price control was considered the preferred approach.

7.15 In the NGN Decision published in December 2018 ComReg reiterated its view that a price control for the regulation of wholesale charges for NGNs was necessary to ensure the effective functioning of the NGN platform.[110]

7.16 ComReg outlined two possible regulatory bases for imposing a price control, namely: a market based analysis and assessment of SMP under Regulation 27 of the Framework Regulations; or the imposition of SMP-type obligations on non-SMP operators Regulation 6(2) of the Access Regulation and/or Regulation 23(1) of the Universal Service Regulations in combination with Regulations 8(3) and 13 of the Access Regulations. ComReg was of the view that, having regard to the problems identified, an SMP-based assessment was not the most appropriate approach.

7.17 In June 2017, ComReg published an Information Notice[111] indicating that it had commenced a review of the WORs for calls to five classes of NGN. This was in tandem with the NGN Decision (and preceding consultation documents). As a result of this project (and those projects related to the NGN Decision) a large amount of evidence has been identified and considered. Having reviewed the evidence ComReg is satisfied that the identified harm is best addressed by way of intervention under ComReg's powers contained in Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations and the imposition of wholesale obligations under Regulation 8 of the Access Regulations with Regulation 9 (transparency) and 13 (price control) of the Access Regulations. ComReg maintains its position that such a control constitutes a necessary step to ensure end-to-end connectivity and ensure that end-users are able to access numbers and service using NGNs.

7.18 In this RIA Freephone and Non-Freephone numbers are considered separately. The options considered as part of this RIA for Non-Freephone numbers are concentrated on the 0818 number range. It is worth noting some points in relation to the other Non-Freephone number ranges – namely 076, 1850 and 1890, as follows.

[109] The six options were 1) dispute resolution; 2) abuse of dominance; 3) negotiated settlement; 4) structural change; 5) guidance; and 6) price control.

[110] See paragraphs 113 and 167 of ComReg Decision D15/18.

[111] ComReg Document 17/53r – Information Notice: Wholesale Charges for Non-Geographic Numbers.

(a) 076 – The introduction of NGN Consolidation and the Geo-linking Condition in the NGN Decision and the implementation of the Termination Markets SMP Decisions, have resulted in 076 numbers being treated in the same manner as Geographic numbers. ComReg is of the view that in light of these measures, no further action is required at the wholesale level for 076. The risks associated with OOs taking advantage of their bottleneck power will be constrained when all of these decisions become effective.

(b) 1850/1890 – The retail measure in the NGN Decision of increasing the maximum rate from local to national has an effect at the wholesale level in that an OO need not levy a WOR to recover these costs. ComReg is of the view that there are no wholesale measures required for 1850/1890 number ranges.

7.19 Please see Chapter 3 and Chapter 4 of this Decision for a full background and discussion in relation to the wholesale approach for all NGN number ranges.

7.20 ComReg is carrying out this RIA having regard to its statutory objectives which include, in relation to the electronic communications sector, to promote competition, to contribute to the development of the internal market and to promote the interest of users as well as the objective to encourage the efficient use and ensure the effective management of the national numbering resource. This RIA shall also have regard to the fact that ComReg, as the designated national regulatory authority for the electronic communications sector in the State, is required to take all reasonable measures which are aimed at achieving its prescribed statutory objectives while such measures must also be proportionate to those objectives.

7.3.1.1 Section 12 of the Act

7.21 As per Section 12 of the Act the objectives of ComReg are to (a) promote competition, (b) to contribute to the development of the internal market; and (c) to promote the interests of users within the community. The objectives also include to ensure the efficient use of numbers from the national numbering scheme in the State.

Promote Competition

7.22 In so far as the promotion of competition is concerned ComReg has a responsibility of:

(a) ensuring that users, including disabled users, derive maximum benefit in terms of choice, price and quality,

(b) ensuring that there is no distortion or restriction of competition in the electronic communications sector, and

(c) encouraging efficient use and ensuring the effective management of radio frequencies and numbering resources.

7.23 It was identified as part of the 2017 DotEcon Report that the relatively high wholesale charges and resulting high retail charges faced by SPs for NGNs is one of the main factors that has seen the use of NGNs decrease over time[112]. ComReg is of the view that NGNs provide a valuable service in connecting SPs to customers and that this should be preserved.

7.24 Despite the development of other forms of communication services, voice services remain an essential aspect for the connection between individuals across society. Furthermore, for some groups of consumers, particularly vulnerable groups such as disabled users, voice calls are the only practical form of contact for some services.

7.25 Implementing a price control at the wholesale level and the requirement for OOs to make publicly available the 1800 and 0818 MVCO and FVCO rates may mean that SPs become more aware of these charges and can use them as a factor in determining which operator they wish to use to provide the service.

7.26 ComReg considers that the proposed price control obligations in relation to 1800 and 0818 FVCO and MVCO are likely to lead to a more efficient pattern of prices than the status quo. The proposed obligations ensure that OOs are able to cover their efficiently-incurred costs on an incremental basis. The pricing approach for 1800 FVCO and MVCO also promotes competition through i.e. the proposed modelling structure (bottom up), cost standard (LRAIC+) and choice of cost base (hypothetically efficient operator).

Development of internal market

7.27 Further to Regulation 13 of the Framework Regulations, the draft measures will be made accessible to the EC, the BEREC as well as other NRAs in other European Member States. Article 7 of the Framework Directive (referred to in Regulation 13 of the Framework Regulations) lays down the procedure for consolidating the internal market for electronic communications. ComReg will take the utmost account of any comments received as part of the notification process referred to in Regulation 13 of the Framework Regulations.

Promote the interests of users within the community

7.28 ComReg is of the view that the NGN platform provides SPs with a valuable service, enabling them to connect with users. The measures being imposed also aim to ensure that all users, have the ability to access NGNs if required.

7.29 Furthermore, the transparency measures being imposed promote the provision of clear, publicly available information regarding pricing of NGNs. This will help create awareness among interested parties of the pricing of NGNs. As SPs become more

[112] See paragraph 3.25 – 3.39 of ComReg Document 18/65

aware of pricing it may encourage them to consider using different operators to provide their service which should increase competition.

7.30 As set out in the earlier chapters of this Decision ComReg identified that excessive WORs set by OOs may result in some SPs shifting away from the use of NGNs to numbers where the caller must cover (some or all of) the cost of the call or even ceasing to offer services altogether. ComReg observed that even where SPs continue to provide service over NGNs, the expense may diminish resources available for improving services and reduce incentives to develop such services. This is a particular issue where the services being provided are valuable to vulnerable members of society. The overall impact of high WORs is therefore to reduce the effectiveness of the NGN platform in allowing SPs to connect to callers; constituting a non-technical obstacle to access to NGNs. As a result, price, choice and quality of services ultimately delivered to end-users is undermined.

7.31 Section 12(2)(c) also highlights the requirement to address the needs of specific social groups, in particular disabled users. As noted above, Freephone numbers are often used by charitable or not-for-profit organisations to provide welfare services and for some groups of consumers, particularly vulnerable groups, voice calls are the only practical form of contact. ComReg considers that protecting and encouraging the use of Freephone numbers is consistent with the need to safeguard the interests of users.

<u>Encouraging efficient use and ensuring effective management of numbering resources</u>

7.32 ComReg must take all reasonable measures to encourage efficient use and ensure effective management of numbers from the national numbering scheme and such measures must be objectively justified, transparent, non-discriminatory and proportionate to their intended purpose.

7.33 ComReg would highlight the following:

- The Geo-linking Condition introduced under the NGN Decision should result in increased usage of the NGN platform overall, including more efficient use of the 0818 range.
- While some SPs may incur some additional costs migrating to one of the numbers being retained, a three year transition period in which to minimise costs has been allowed. Some SPs could accept these costs given the countervailing benefits to consumers and the NGN platform overall.

7.3.1.2 Regulation 16 of the Framework Regulations

7.34 Regulation 16 of the Framework Regulations also sets out ComReg's objectives. While these objectives overlap with those under the Act, there are additional more granular objectives such as the need to promote the ability of end-users to access and distribute information or use applications and services of their choice.

Furthermore, under Regulation 16(2) of the Framework Regulations in pursuit of its objectives ComReg shall apply objective, transparent, non-discriminatory and proportionate regulatory principles by, among other things:

(a) Promoting regulatory predictability by ensuring a consistent regulatory approach over appropriate review periods.

7.35 ComReg decided to initiate the NGN projects as it appeared to it that the functioning of these NGNs were not working well for consumers or for those being called. The dysfunctional nature of NGNs has persisted for a number of years (see Chapter 2, section 2.4 for a list of relevant documents concerning ComReg's previous intervention on the issue) and so needed to be addressed.

7.36 ComReg set out in this Decision, the Consultation and in the 2018 NGN Consultation[113] why intervention under Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations is the more appropriate means of addressing the harm identified (rather than under the SMP designation approach under Regulation 27 of the Framework Regulations).

7.37 As required under Regulation 6(4) of the Access Regulations, ComReg is acting in accordance with the Access Regulations and the procedures set out in Regulation 12 and 13 of the Framework Regulations. Accordingly, the measures being imposed were consulted upon and made accessible to the EC, BEREC as well as other NRAs in other European Member States. ComReg considered comments received as part of the consultation process and will also take the utmost account of any comments received as part of the notification process.

7.38 Furthermore, in its assessment of the modelling parameters for 1800 FVCO and MVCO price control, ComReg has given due regard to regulatory best practice, including EC recommendations[114] and ComReg's general approach to modelling costs of provision of other services in Ireland to ensure consistency. Cost orientation also ensures predictability of wholesale price levels for operators as cost oriented prices can be determined for the entire of the price control period allowing greater confidence in business decisions. Annex 9 and Annex 10 set out the maximum WORs for calls to 1800 numbers originating from a mobile and fixed network from 2020 to 2024. ComReg considers that visibility and certainty regarding future prices is important to promote regulatory predictability.

(b) Ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications networks and services.

[113] Paragraphs 3.76 to 3.79.

[114] COMMISSION RECOMMENDATION of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC) and COMMISSION RECOMMENDATION of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment.

7.39 As set out in Section 4.8 above, ComReg is imposing a wholesale price control (and supporting transparency obligation) for the origination of calls to 1800 and 0818 NGNs.

7.40 The obligations being imposed apply to all fixed or mobile operators that have the ability to originate calls to 1800 and 0818 NGNs. This is reflected in the Decision Instruments contained in at Annex 9 and Annex 10 which list all such operators. ComReg considers that this approach does not discriminate between undertakings.

7.41 While it is correct that mobile WORs for 1800 NGNs are an order of magnitude higher than that charged by fixed operators, ComReg remains of the view that a consistent approach should be adopted in respect of fixed and mobile operators. As set out in Section 7.3.3.3 below ComReg has adopted a consistent approach between fixed and mobile operators, which it considers appropriate.

7.42 One of the respondents to the Consultation suggested the use of a glide path for smaller operators. It would be contrary to the above requirements if ComReg imposed regulation on some operators and not on others. The other reasons for not applying a glide path have been set out in Annex 7, paragraph A7.126.

(c) Safeguarding competition to the benefit of consumers and promoting, where appropriate, infrastructure based competition.

7.43 See paragraphs 7.22 to 7.26 above.

(d) Promoting efficient investment and innovation in new and enhanced infrastructures.

7.44 Access prices should be set in such a way that OOs are encouraged to make efficient infrastructure investment decisions. Visibility and certainty regarding future prices is important so that operators can progress their investment plans.

7.45 In the current regime, all originating operators, apart from Eircom, have the freedom to set their own prices. This also means that they have the freedom to change their prices whenever they view it as necessary. The effect of this was seen when the Deemed-to-be Regime unravelled. Some operators increased prices and due to the bottleneck control exercised by these OOs the other operators were unable to respond to the price change in a meaningful way.

7.46 Furthermore, the choice of a long run incremental costing methodology for the 1800 FVCO and MVCO price control provide adequate long-term incentives by ensuring that prices are sufficient to incentivise capacity-expanding investments. It is intended that the costing models used will ensure that the cost oriented prices produced by such models will suitably inform operator's 'build or buy' decisions and help promote efficient investment and innovation. The approach is consistent with the recommendation outlined in the DotEcon Report and also with the 2009 Termination Rates Recommendation which requires that a cost model should "…*produce as robust results as possible and to avoid large discrepancies in operating cost, capital cost and cost allocation between a hypothetical and a real operator*".

(e) Taking due account of the variety of conditions relating to competition and consumers that exist in the various geographic areas within the State.

7.47 ComReg considers that in the context of this review and the nature of NGNs, differentiated competitive conditions based on geographic areas is not a relevant consideration.

(f) Imposing ex-ante regulatory obligations only where there is no effective and sustainable competition and relaxing or lifting such obligations as soon as that condition is fulfilled.

7.48 As set out in Chapter 4 above, ComReg is imposing a wholesale price control (and supporting transparency obligation) for origination of calls to 1800 and 0818 numbers. ComReg considers that these obligations address the specific harm that has been identified (as set out in Chapter 3 above). ComReg will keep the imposed 1800 WORs under review to ensure that they address this harm and where appropriate, will reassess the imposed rates. ComReg also proposes to monitor the effectiveness of the obligation relating to the 0818 NGN range. Unless otherwise required, in advance of 1 January 2025 ComReg will reassess whether intervention remains appropriate and whether the imposed WORs remain correct. For the avoidance of doubt, the WOR for calls to 1800 NGNs that applies at 31 December 2024 will continue until such time as ComReg completes a further review.

7.49 ComReg considers that regulatory forbearance is the more appropriate approach for wholesale origination of calls to 1850, 1890 and 076 numbers. This means that no price control is being imposed and operators will continue to have freedom to set their own charges for wholesale origination. ComReg will have no influence over these charges.

7.3.1.3 Regulation 23 of the Universal Service Regulations

7.50 Regulation 23 of the Universal Service Regulations provide that:

"The Regulator may, where technically and commercially feasible and except where a called subscriber has chosen for commercial reasons to limit access by calling parties located in specific geographical areas, specify requirements for compliance by an undertaking operating a public telephone network or providing publicly available telephone services for the purpose of ensuring that end-users are able to

(a) Access and use services using non-geographic numbers within the European Union, and

(b) Access all numbers provided in the European Union, regardless of the technology and devices used by the operator, including those in the national numbering plan of Member States, those from the European Telephony Numbering Space (ETNS) and Universal International Freephone Numbers (UIFN)."

7.51 Pursuant to recital 46 of the Universal Service Directive, "cross-border access to numbering resources and associated services should not be prevented, except in objectively justified cases, for example to combat fraud or abuse …, when the number is defined as having a national scope only … or when it is technically or economically unfeasible".

7.52 The regulatory framework allows ComReg to safeguard the rights and interests of End-users in all events where justified to secure policy objectives and regulatory principles and where the required procedures are adhered to. It is on this basis that ComReg considers it necessary to intervene to adopt a price control obligation (and supporting transparency obligations), as set out in this Decision, to remove the potential for excessive WORs that constitute a barrier to effective end-to-end connectivity that, in turn, create a non-technical obstacle to end-users from being able to access NGNs and related services.

7.53 Chapter 3 (with reference to ComReg's earlier analysis and supporting DotEcon Reports) sets out the specific harm that has been identified. ComReg is of the view that high wholesale charges levied by OOs on other network operators lead to high charges being faced by those organisations that want to use NGNs as a means of communicating with callers. These excessive charges result in an obstacle to access to NGNs and consequently discourage organisations from using NGNs, which is ultimately to the detriment of end-users.

7.54 It is intended that the measures being imposed in combination with the measures imposed in the NGN Decision will encourage more organisations to use NGNs and therefore increase and improve the services that callers may avail of.

7.3.1.4 Regulation 6(1) of the Access Regulations

7.55 Regulation 6(1) of the Access Regulations provides that

> *"The Regulator shall, acting in pursuit of its objectives set out in Section 12 of the Act of 2002 and Regulation 16 of the Framework Regulations encourage and, where appropriate, ensure, in accordance with these Regulations, adequate access, interconnection and the interoperability of services in such a way as to –*
>
> *(a) promote efficiency*
>
> *(b promote sustainable competition*
>
> *(c) promote efficient investment and innovation, and*
>
> *(d) give the maximum benefit to end-users*

7.56 ComReg considers each of constituent sections of 6(1) of the Access Regulations below.

Promote efficiency

7.57 A cost oriented price control aims to ensure that prices do not exceed an appropriate level of efficient costs where there is a risk that competitive pressure alone would not achieve this outcome.

7.58 The use of LRAIC+ is consistent with recommendations in the context of general costing methodologies, for example as outlined in the 2013 Non-Discrimination Recommendation[115]. If non-geographic OOs were only allowed to charge a WOR capped at LRIC, geo-linked NGN calls would be cheaper on an end-to-end basis than Geographic calls with a FVCO set at LRAIC+. This would create a regulatory distortion and should be avoided.

7.59 At the wholesale level due to the bottleneck control that OOs have over the NGN supply chain a price control is considered to be the most effective option in addressing the pricing issues identified for Freephone numbers (1800) and Universal Access numbers (0818).

Promote sustainable competition

7.60 Please see paragraphs 7.22 to 7.26 above.

Promote efficient investment and innovation

7.61 See paragraph 7.34(d) above.

Maximum benefit to end-users

7.62 See paragraphs 7.28 to 7.31 above.

7.3.1.5 Regulation 6(2) of the Access Regulations

7.63 Regulation 6(2) of the Access Regulations provides that,

"Without prejudice to any measures that may be taken in accordance with Regulation 8 in respect of undertakings with significant market power, the Regulator may –

(a) To the extent that it is necessary to ensure end-to-end connectivity, impose obligations on undertakings that control access to End-users including, in justified cases, the obligation to interconnect their networks where this is not already the case;…"

[115] Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU).

7.64 End-to-end connectivity is the mechanism through which all consumers can access services provided by all SPs regardless of operator. An SP providing a service using an NGN generally relies on that service being available to all potential callers across all OOs. An SP has few, if any, options if an OO increases the WOR charged because the SP cannot, by way of response to the increased charges, threaten to reject calls to that OO as accessibility to all potential customers is likely to be of the utmost importance.

7.65 Given the threat to end-to-end connectivity posed by the bottleneck control exercised by OOs ComReg is of the view that it is appropriate to exercise its powers under Regulation 6(2) to impose the proposed wholesale price control (and supporting transparency obligation) for origination of calls to 1800 and 0818 numbers.

7.3.1.6 Regulation 6(4) of the Access Regulations

7.66 Regulation 6(4) of the Access Regulations provides that:

> "With regard to access and interconnection referred to in paragraphs (1) and (2) the Regulator may exercise its powers under the Specific Regulations on its own initiative where justified in order to secure the policy objectives and regulatory principles set out in section 12 of the Act of 2002 and Regulation 16 of the Framework Regulations, in accordance with these Regulations and the procedures referred to in Regulations 12, 13, 31 and 32 of the Framework Regulations."

7.67 In light of the foregoing, ComReg is imposing transparency and price control obligations to remove an obstacle to calling NGNs which is not technical in nature but results from the tariffs applied. These controls are being imposed on the basis that such obligations constitute a necessary step to ensure that end-users are able to access NGNs. Where Regulation 6 is invoked, there is no requirement to carry out a market analysis with the view to identifying undertakings with SMP.

7.68 ComReg decided to initiate the NGN projects as it appeared to it, that the functioning of these NGNs were not working well for consumers or for those being called. The dysfunctional nature of NGNs has persisted for a number of years (see Section 2.4 above in Chapter 2for a list of the relevant documents concerning ComReg's previous intervention on the issue). Chapter 3(with reference to ComReg's earlier analysis and supporting DotEcon Reports) sets out the specific harm that has been identified.

7.69 In accordance with Regulation 12(3) of the Framework Regulations before imposing the proposed obligations, as part of the Consultation ComReg published the text of the proposed measure (see the draft Decision Instruments contained in Annexes 9 and 10 of the Consultation). The Consultation (with relevant documents such as the 2018 NGN Consultation and supporting DotEcon Reports) set out in detail the reasons for the proposed measures, including information as to which of ComReg's statutory powers gives rise to the measure. In the Consultation, ComReg asked a number of questions regarding ComReg's proposals and the responses to these questions have been incorporated into this final Decision.

7.70 As provided for in Regulation 12(4) ComReg has considered the representations received in response to the Consultation. Furthermore, in accordance with Regulation 13(3) of the Framework Regulations ComReg has made the draft measure accessible to the EC, BEREC and the NRAs in other Member States.

7.3.1.7 Regulation 8 of the Access Regulations

7.71 Regulation 8 (3) of the Access Regulations provides that:

"(3) Without prejudice to…. (a) Paragraphs (1) and (2) of Regulation 6, […] (e) Regulations 21, 23 and 25 of the Universal Service Regulations, […] the Regulator shall not impose the obligations set out in Regulations 9 to 13 on operators that have not been designated in accordance with paragraph (1)".

7.72 Regulation 8(6) of the Access Regulations provides that:

"(6) Any obligations imposed in accordance with this Regulations shall –

(a) be based on the nature of the problem identified,

(b) be proportionate and justified in light of the objectives laid down in Section 12 of the Act and Regulation 16 of the Framework Regulations, and

(c) only be imposed following consultation in accordance with Regulations 12 and 13 of the Framework Regulations"

<u>Based on the nature of the problem identified</u>

7.73 ComReg has identified that there is harm at the wholesale and retail level that results from excessive WORs associated with 1800 and 0818 number ranges. The price control and transparency measures being imposed seek to directly address this harm.

7.74 The harm is discussed in Chapter 3 of this Decision (see Section 3.3 which in turn, refers to ComReg's earlier analysis and supporting DotEcon Reports). In summary, ComReg considers that it is necessary to intervene and adopt a price control obligation (and supporting obligations), as set out in the Consultation and in this Decision, to remove excessive WORs which ComReg considers to constitute a barrier to effective end-to-end connectivity and that, in turn, creates non-technical obstacle to end-users from being able to access NGNs and related services.

7.75 The price control and transparency measures being imposed should lead to OOs recovering no more than their efficiently incurred cost for providing NGNs. It is anticipated that the measures should increase access to services over NGNs.

Proportionate and justified in light of objectives

7.76 ComReg is of the view that the proposed approach is justified based on the detail, reasoning and information provided in the Consultation and in this Decision. Please refer to Chapters 5, 6 and 7 of this Decision for full details. As set out above, ComReg has illustrated how the proposed measures are consistent with the objectives laid down in Section 12 of the Act and Regulation 16 of the Framework Regulations.

7.77 Chapter 4 of this Decision explains that ComReg is proposing a wholesale price control (and supporting transparency obligation) for origination of calls to 1800 and 0818 numbers only. ComReg considers that these obligations address the specific harm that has been identified (as set out in Chapter 3 of this Decision).

7.78 ComReg has established that, on the whole, the current commercially negotiated WORs are set significantly above the Eircom regulated rates and are very likely to be excessive. Mobile WORs for 1800 NGNs are an order of magnitude higher than that charged by fixed operators (either by BT or under the Deemed to be Regime), as set out in table 303 of the STRPL (v 151.0)[116] and replicated in Table 3 of the DotEcon Report these can be up to 34.2 cent per minute (peak) which is in stark contrast to the proposed cost base rate of 1.6 cent per minute.

7.79 As set out in Chapters 5 and 6 of this Decision (with support from TERA and AM) ComReg has determined that it is appropriate to apply a BU LRAIC+ cost standard to derive the modelled WORs for 1800 NGNs. Such a price control, with reference to detailed cost modelling, is transparent, provides regulatory certainty and ensures that OOs recover efficiently incurred costs but cannot over-recover costs.

7.80 ComReg will keep the imposed WORs under review to ensure that they address this harm and where appropriate will reassess the imposed measure.

7.81 In relation to 0818 numbers, rather than a cost orientated rate ComReg is imposing a price control (and supporting transparency) obligations which ensures that the net money flow between the relevant OO and TO should be such that the TO receives no more than the regulated FTR. For reasons set out in Chapter 4, ComReg considers that this is the more proportionate measure to address the harm identified.

7.82 On the other hand ComReg considers, in light of its assessment, that regulatory forbearance is the most appropriate approach for wholesale origination of calls to 1850, 1890 and 076 numbers. This means that no price control is being imposed and operators will continue to have freedom to set their own charges for wholesale origination. In light of retail regulation imposed pursuant to the NGN Decision (as of 1 January 2022 these three NGNs will be withdrawn) and the Termination Markets Decisions ComReg considers it appropriate to limit its intervention, in respect of non-Freephone NGNs, to wholesale origination of calls to 0818 numbers.

[116] 1800 Charges for Mobile - less transit fee where appropriate (Euro Cent).

7.3.1.8 Regulation 13 of the Access Regulations

7.83 Regulation 13(1) of the Access Regulations provides that ComReg may:

"…impose on an operator obligations relating to cost recovery and price controls, including obligations for cost orientation of prices and obligations concerning cost accounting systems, for the provision of specific types of access or interconnection in situations where a market analysis indicates that a lack of effective competition means that the operator concerned may sustain prices at an excessively high level or may apply a price squeeze to the detriment of end-users".

7.84 Regulation 13(2) of the Access Regulations provides that (emphasis added):

"To encourage investments by the operator, including in next generation networks, the Regulator shall, when considering the imposition of obligations under paragraph (1), take into account the investment made by the operator which the Regulator considers relevant and allow the operator a reasonable rate of return on adequate capital employed, taking into account any risks involved specific to a particular new investment network project."

7.85 Regulation 13 (3) of the Access Regulations provides that (emphasis added):

"The Regulator shall ensure that any cost recovery mechanism or pricing methodology that it imposes under this Regulation serves to promote efficiency and sustainable competition and maximise consumer benefits. In this regard, the Regulator may also take account of prices available in comparable competitive markets."

Promote Efficiency

7.86 Please see paragraphs 7.57 to 7.59 above.

Promote sustainable competition

7.87 Please see paragraphs 7.22 to 7.26 above

Maximise consumer benefits

7.88 Please see paragraphs 7.28 to 7.31 above

Reasonable rate of return on adequate capital employed

7.89 ComReg has determined that it is appropriate to apply a BU LRAIC+ cost standard to derive the modelled WORs for 1800 NGNs. Such a price control, with reference to detailed cost modelling, is transparent, provides regulatory certainty and ensures that OOs recover efficiently incurred costs but cannot over-recover costs. The BU

LRAIC+ cost standard also ensures a reasonable rate of return on adequate capital employed.

7.3.1.9 Summary of policy issues and objectives

7.90 ComReg's statutory objectives under Section 12 of the Act and Regulation 16 of the Framework Regulations have been outlined above, with a discussion of the regulatory principles that govern the pursuit of these objectives, followed by a description of the powers that ComReg can exercise under Regulation 23(1) of the Universal Service Regulations and Regulation 6 of the Access Regulations (with Regulation 8, 9 and 13 of the Access Regulations) in pursuit of these objectives.

7.91 High retail and wholesale NGN charges along with a lack of transparency around these charges have led to decreased utilisation of the NGN platform. SPs requires end-to-end connectivity in order to be accessible by all callers. Reduced utilisation of the NGN platform and consequential reduction in services available over the platform is to the detriment of SPs and consumers.

7.92 At the wholesale level the key problem to be addressed for NGN number ranges is originator control, and misuse, of access to end-users. Each OO has the potential to raise prices above cost given the end-to-end connectivity requirements and the fact that SPs need to be accessible to all callers regardless of what network they might subscribe to.

7.93 ComReg remains of the view (as expressed in the Consultation) that if a price control on WORs is not imposed, end-to-end connectivity is potentially threatened by high WORs. SPs will ultimately withdraw from the NGN platform due to the high costs involved and callers would therefore not be able to access their services (which in the case of Freephone NGNs typically affects the most vulnerable callers). This approach would not be in line with ComReg's statutory objectives as outlined above and could even contradict those of promoting competition and the interests of end-users.

7.94 ComReg remains of the view that it should address the identified harm and intervene under its powers contained in Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations and to impose wholesale obligations under Regulation 8 of the Access Regulations in conjunction with Regulation 9 and 13 of the Access Regulations.

7.3.2 Step 2: Identify and describe the regulatory options

7.95 The regulatory options considered in this Consultation are as follows:

(a) No Intervention

(b) Intervention in the form of a price control with supporting transparency obligations

7.96 While a large part of the issues are common to Freephone and Non-Freephone numbers we have considered the different number classes separately.

7.3.3 Step 3: Determine the likely impact on stakeholders

7.97 This section summarises the impact of the options above on the various stakeholders. The main stakeholders are as follows:

(a) Users of the NGN Platform:

(i) End-users

(ii) Service Providers

(b) Industry Stakeholders

(i) Fixed Line and mobile OOs[117];

(ii) Fixed Line and mobile TOs;

(iii) Transit operators

7.98 The likely impact on stakeholders is discussed under the following headings:

(a) Impact of No Intervention – Freephone (1800)

(b) Impact of No Intervention – Non Freephone (0818)

(c) Impact of Imposing Price Control/Transparency Measures – Freephone (1800)

(d) Impact of Imposing Price Control/Transparency Measures – Non Freephone (0818)

7.3.3.1 Impact of No Intervention – Freephone (1800)

7.99 ComReg has identified existing wholesale harm in the market for NGNs, specifically high WORs (particularly mobile charges). There is also potential consequences arising from the imposition of retail remedies pursuant to the NGN Decision.

7.100 For Freephone numbers failure to address the problem could lead to a worsening of the situation whereby fewer SPs will choose to offer Freephone services instead, switching to other NGNs or Geographic numbers which are less costly for them but will require End-users to pay, making the services of the SP less accessible, for example to potentially vulnerable callers.

[117] In this context the term “OOs” can include network operators who own their own network or virtual network operators that provide network service such as call origination without owning the underlying fixed or mobile networks.

7.101 As noted in the 2017 DotEcon Report[118], despite the growth of the internet, smartphones and apps as alternative means of delivering some of the traditional services provided over NGNs, there is and will remain an important role for voice-based services. A voice based service is easily accessible to anyone with a phone (fixed or mobile) and so provides largely universal accessibility to SPs in a way that other platforms cannot. Therefore the NGN platform is important, particularly for Freephone numbers, as a means of connecting SPs.

7.102 As mentioned above Freephone numbers are often used by charitable or not-for-profit organisations to provide welfare services and for some groups of consumers, particularly vulnerable groups, voice calls are the only practical form of contact.

7.103 In the absence of intervention OOs would continue to set their own WORs without limitation. This does nothing to address the excessive wholesale pricing identified by ComReg/DotEcon as part of Consultation 17/70 (and subsequently) and does not reduce the risk of OOs increasing WORs in the future to recover eliminated retail margins resulting from the Geo-linking Condition. No intervention would be inconsistent with ComReg's statutory objectives under Section 12 of the Act and Regulation 16 of the Framework Regulations as outlined at paragraphs 7.21– 7.34 above.

7.3.3.2 Impact of No Intervention – Non-Freephone (0818)

7.104 As outlined in the 2017 DotEcon Report[119] callers benefit from the services that SPs can offer through the NGN platform. However by using NGNs, SPs typically cover some (or all in the case of Freephone numbers) of the cost of being called. Therefore, SPs can be thought of as using NGNs as a means to make themselves contactable by callers, at terms chosen by the SPs. Helplines, product support lines, marketing response numbers etc. are good examples of organisations using NGNs to reach out to callers and make themselves accessible.

7.105 Evidence from surveys[120] carried out by DotEcon identified the main factors or value that SPs have for using NGNs. For Non-Freephone numbers the relevant factors are:

(a) Reduce the costs to customers of calling SPs;

(b) Provide memorable contact numbers;

(c) Offer a single contact number;

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[118] See Section 1.1 of ComReg Document 17/70a – *Non-Geographic Numbering – Report from DotEcon on non-geographic numbers in Ireland* – https://www.comreg.ie/publication/report-dotecon-non-geographic-numbers-ireland/.

[119] See Section 2.1 of ComReg Document 17/70a.

[120] See Section 6.1.1 of ComReg Document 17/70a.

(d) Avoid showing where the organisation is based, or facilitate moving without changing contact numbers.

7.106 There is accordingly value for SPs in having NGNs available, and access to an NGN platform that functions effectively.

7.107 If ComReg was not to intervene in respect of the WORs charged for the 0818 number range, the immediate risk is that the reduced retail margins on these numbers (following the introduction of the Geo-linking Condition as outlined in the NGN Decision) might lead OOs to seek increased wholesale margins. Intervention at the retail level requires corresponding wholesale measures in order to ensure that they are effective and that OOs do not compensate for lost retail margins by increasing WORs.

7.108 In the absence of a price control OOs could introduce WORs for 0818 numbers. This could result in TOs increasing their termination rates in response. In the absence of regulation TOs could ultimately decide to withdraw from the 0818 platform altogether. Not intervening would be inconsistent with ComReg's statutory objectives.

7.3.3.3 Impact of Imposing Price Control/Transparency Measures – Freephone (1800)

7.109 ComReg has considered the imposition of a price control separately for Freephone and Non-Freephone numbers.

7.110 In order to address excessive wholesale pricing as identified by ComReg intervention is required by way of a price control. A price control in the form of cost orientation will eliminate the possibility of excessive WORs. Setting a price control of cost orientation for Freephone using modelled costs sets a cap that will allow OOs to recover reasonable costs but will avoid compensating OOs for inefficiently high costs or with excessive margins. This measure ensures that OOs receive a reasonable return on providing Freephone services and that TOs are not faced with excessive WORs.

7.111 SPs are currently unable to take countervailing action against OOs to deter excessive charges for Freephone. The use of modelled costs is transparent. It provides greater cost certainty to SPs in terms of what it might cost them to use the NGN network as a means of connecting with callers. This will likely increase/improve the extent to which SPs provide access to services over Freephone numbers, which is to the ultimate benefit of End-users.

7.112 Many charities offer Freephone numbers. The bottleneck control exercised by OOs and the excessive charges faced by SPs in operating NGNs acts as barrier to access. The introduction of a price control ultimately should remove any barriers and increase and improve access to services for End-users. This will ensure that the interest of End-users (including potentially vulnerable End-users) are better protected, which is consistent with the objectives of the Universal Service Regulations.

7.113 ComReg recognises that the imposition of price control and transparency obligations on OOs increase the regulatory burden for OOs that have not previously been subject to this form of regulation.

7.114 However ComReg is of the view that the remedies it is imposing are necessary and proportionate and amount to the minimum level of regulation required to address the identified harm and protect SPs and consumers.

7.115 In respect of the proposed transparency obligations ComReg considers that the implementation of an obligation on all OOs to make MVCO/FVCO rates publicly available does not place a disproportionate burden on them. ComReg however notes that initial implementation may be slightly more burdensome for those OOs who have never been subject to formal measures previously.

7.3.3.4 Impact of Imposing Price Control and Transparency Measures – Non-Freephone (0818)

7.116 The issues with Non-Freephone are largely similar to those identified for Freephone numbers – i.e. high WORs that may make the NGN platform less attractive and reduce the effectiveness of the NGN platform as a means of SPs connecting with callers/customers.

7.117 The main difference stems from who pays for the call. As outlined at Section 3.2.2 above the CPP principle applies to calls to 0818 numbers whereas the RPP principle applies to calls to 1800 numbers.

7.118 Calls to Freephone (1800) are not impacted by the Geo-linking Condition imposed following the NGN Decision whereas calls to 0818 will be. As calls to 0818 will, in future, be included in a customer's bundled minutes OOs will likely see a reduction in retail revenues earned from this number range.

7.119 High WORs is one of the main issues identified for Freephone numbers. WORs, while not prohibited, are not currently observed on the 0818 range. There is however a risk that OOs could seek to introduce such charges at the wholesale level as a means of recovering some of the lost retail revenues that could result from the Geo-linking Condition. The introduction of WORs could be problematic for TOs and may result in TOs increasing their termination rates. The proposed price control allows OOs to mitigate against potentially high termination rates.

7.120 The proposed price control will allow OOs to cover their origination costs ensuring that they are no better or worse off from providing the service. The measure should prevent them extracting value from anywhere else in the NGN value chain by introducing WORs. However it does allow OOs to respond if they are charged a termination rate which is above the Regulated FTR.

7.121 Promotion of the use of NGN platform will enhance End-user welfare and maximise long term benefits in terms of price and quality in the provision of the SP's services.

7.3.4 Step 4: Determine the likely impacts on competition

7.122 Competition can take place at different levels of the NGN supply chain:

(a) At the retail level OOs compete to attract subscribers and callers

(b) At the wholesale level TOs compete to provide hosting services to SPs.

7.123 It is important to ensure that competition is effective at the different levels of the NGN supply chain.

7.124 The wholesale price obligation may result in an increase in the volume of NGN calls which in turn could increase revenues for TOs. This should foster greater competition because each TO should have greater incentive to compete for as many SP calls as possible to be terminated on its network.

7.125 In discussing the appropriate cost standard, the Final DotEcon Report explained that a large integrated operator (originating and terminating calls) can internalise the cost of providing NGN calls. If this operator were allowed to charge high WORs for calls originating on its own network but terminating on another network a smaller terminating operator might face significant payments to larger competitors and be at a competitive disadvantage. Excessive WORs might be used by integrated operators present in both origination and termination to compete unfairly for SPs against non-integrated operators present only on the termination side. However, once WORs are reduced to recover only LRAIC+ it is unclear that there would be any significant further improvement in terms of avoiding competitive distortions by reducing rates further to LRIC.

7.3.5 Step 5: Assess the likely impacts and choose the best option

7.3.5.1 Option not to Intervene

7.126 If there is no price control implemented for 1800 and 0818 origination, operators will continue to determine their own WORs (if any). The NGN platform is not working effectively to the detriment of End-users and SPs.

7.127 Wholesale intervention is justified given that each OO controls access to end-users and SPs need to be accessible to all callers regardless of which network the caller might subscribe to. OOs are exploiting their bottleneck control and SPs are unable to take countervailing action to deter excessive charges.

7.128 ComReg is of the view that if a price control on WORs for calls to 1800 numbers is not imposed, end-to-end connectivity will be threatened by high WORs. SPs could ultimately withdraw from the NGN platform due to the high costs involved and callers would not be able to access their services. As noted at 7.100 above, in the case of 1800 numbers, some SPs may switch to other NGNs which require end-users to pay, ultimately making the SPs service less accessible. This approach would not be in line with ComReg's statutory objectives and could possibly undermine those of promoting competition and the interest on End-users.

7.129 As discussed above, ComReg considers it necessary to intervene to adopt a price control obligation (and supporting transparency obligation) to remove the potential for excessive WORs that constitute a barrier to effective end-to-end connectivity that, in turn, create a non-technical obstacle to end-users from being able to access NGNs and related services. ComReg considered two regulatory methods of implementing a price control – (i) a market based analysis and assessment of SMP under Regulation 27 of the Framework Regulations or (ii) to intervene under Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations. ComReg was, and is, of the view that in the current context the powers under Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations address the identified problem more effectively (i.e. addressing obstacles to effective end-to-end connectivity and access to services). It is on this basis that the proposed approach is adopted.

7.3.5.2 Option to impose price control and transparency obligations for Freephone (1800) numbers

7.130 The Final DotEcon Report provides a recap on the above options that were available to ComReg to address the harm identified. Having considered all options, ComReg is of the view that the appropriate price control for Freephone numbers should be based on a cost orientation obligation using detailed cost modelling. Please see Section 4.6 of this Decision for a full background and discussion of same.

7.131 Such a price control with reference to detailed cost modelling would be transparent, provide regulatory certainty and ensure that OOs cannot over-recover costs.

7.132 ComReg considered whether there should be any differences in approach in relation to fixed operators and mobile operators. ComReg is of the view that while there are separate models for Fixed and Mobile origination the principles to be applied to regulating fixed OOs and mobile OOs should be consistent. The purpose of the price control should not discriminate against whether the call originates on a fixed line or a mobile phone and is purely intended to ensure that the originator can recover costs of origination for these calls but cannot take advantage of its bottleneck control and set higher wholesale rates.

7.133 As outlined in the DotEcon Report, applying consistent costing principles may not necessarily result in the derivation of similar costs where there are inherent cost differences between fixed and mobile services in NGN origination. However, no evidence has yet been provided of any significant differences in originating costs across fixed and mobile.

7.134 ComReg was of the preliminary view that should the decision be made to impose a cost orientation obligation on origination with reference to modelled costs, LRAIC+ is the appropriate cost standard to be used. ComReg remains of this view.

7.135 A LRAIC+ methodology is consistent with EC recommendations[121]. If non-geographic OOs were only allowed a WOR to recover (pure) LRIC, a geo-linked NGN call would be cheaper on an end to end basis than a Geographic call given that FVCO for Eircom is regulated at LRAIC+ and other fixed operators compete with Eircom in this market. LRAIC+ prices will be higher due to the inclusion of joint and common cost recovery which does not happen with a Pure LRIC approach. This would create a regulatory distortion and should be avoided.

7.3.5.3 Option to impose a price control/transparency obligations for Non-Freephone numbers

7.136 In the Termination Markets SMP Decision, ComReg decided that termination of 0818 numbers is not included in the relevant termination markets. Consequently, the termination rate for 0818 calls is unregulated.

7.137 A likely outcome of the Geo-linking Condition is that the competitive characteristics of 0818 will more closely resemble those of Geographic Numbers and 076 (see below for an explanation of why). ComReg noted in the Consultation that it intended to further consult on whether the exclusion of termination services for 0818 from the Relevant FVCT Markets remained correct in light of the implementation of the Geo-linking Condition. Work has commenced on this new consultation with publication expected Q1 2020.

7.138 When the Geo-linking Condition comes into effect OOs may be subject to a higher termination rate for 0818 calls than the regulated rate for a standard Geographic call. Additionally OOs will no longer be able to impose a retail charge for calls to 0818 numbers; which have been subject to relatively high out-of-bundle rates. OOs may take steps to counter this.

7.139 Should the future consultation on Relevant FVCT Markets conclude that 0818 does not fall within relevant FVCT markets ComReg is of the view that a differentiated approach to price control is appropriate in those circumstances. OOs exposure to high WTRs could be offset by permitting an OO to levy a WOR for a 0818 call if the WTR from a TO for 0818 termination is greater than the regulated WTR for a Geographic call. In these circumstances only, the OO may charge a WOR for calls to 0818 equal to the difference between the 0818 WTR and the regulated geographic

[121] COMMISSION RECOMMENDATION of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC) and COMMISSION RECOMMENDATION of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment.

WTR. In the event that a TO charges a WTR for 0818 at a rate equal to the regulated geographic WTR the OO may not charge a WOR for 0818 calls.

7.3.6 Monitoring and Compliance

7.3.6.1 Complying with the proposed price control and transparency obligations

7.140 ComReg is imposing price control and transparency obligations on operators for calls to certain NGNs. The price controls mean that, at certain dates the operators will need to have ensured that their wholesale prices will be priced at or below those prices set out in the decision instruments contained in Annexes 10 and 11. The transparency obligations mean that operators will have to publish relevant MVCO and FVCO rates in an accessible format on their website.

7.3.6.2 Monitoring

7.141 ComReg will seek written confirmation from the relevant operators at the dates where publication of new prices are due.

7.3.6.3 Enforcement Measures and Sanctions

7.142 Where there is *prima facie* evidence that a fixed or mobile operator has not complied with the proposed price control and transparency obligations in relation to NGNs, ComReg will initiate a compliance investigation. If necessary ComReg will take relevant action pursuant to Regulation 19 (*Enforcement – Compliance with obligations*) or Regulation 21 (*Prosecution of Offences*) of the Access Regulations and/or the equivalent provisions in the Universal Service Regulations (Regulations 31 and 35 of the Universal Service Regulations).

Annex 1 Glossary

Acronym	Full Title
AM	Analysys Mason
BEREC	Body of European Regulators for Electronic Communications
CISPL	Commercial Interconnect Services Price List
CPNP	Calling Party Network Pays
CPP	Calling Party Pays
EC	European Commission
EPC	Enhanced Packet Core
EPMU	Equi-proportionate Manner
FNO	Fixed Network Operator
FRR	Fixed Retention Rate
FTR	Fixed Termination Rate
FVCO	Fixed Voice Call Origination
FVCT	Fixed Voice Call Termination
GA	General Authorisation
GSM	Global System for Mobile Communications
HSDPA	High Speed Downlink Packet Access
HSUPA	High Speed Uplink Packet Access
IMS	IP Multimedia subsystem
IP	Internet Protocol
LRAIC+	Long Run Average Incremental Cost Plus
LRIC	Long Run Average Incremental Cost
LTE	Long Term Evolution
MEA	Modern Equivalent Asset
MNC	Mobile Network Code
MNO	Mobile Network Operator
MTR	Mobile Termination Rate
MVCO	Mobile Voice Call Origination
MVCT	Mobile Voice Call Termination

Acronym	Full Title
NGN	Non Geographic Number
NRA	National Regulatory Authority
OO	Originating Operator
PSTN	Public Switched Telephone Network
PV	Present Value
RAN	Radio Access Network
RFTS	Retail Fixed Telephony Service
RIA	Regulatory Impact Assessment
RMTS	Retail Mobile Telephony Service
ROR	Retail Origination Rate
RTR	Retail Termination Rate
RoU	Rights of Use
RPNP	Receiving Party Network Pays
RPP	Receiving Party Pays
SMP	Significant Market Power
SP	Service Provider
SIP	Session Initiation Protocol
S-RAN	Single Radio Access Network
STRPL	Switched Transit and Routing Price List
TDM	Time Division Multiplexing
TO	Terminating Operator
TrO	Transit Operator
UMTS	Universal Mobile Telecommunications System
VoB	Voice over Broadband
VoIP	Voice over Internet Protocol
VoLTE	Voice over Long Term Evolution
WACC	Weighted Average Costs of Capital
WDM	Wavelength Division Multiplexing
WiFi	Wireless Fidelity
WOR	Wholesale Origination Rate

Acronym	Full Title
WTR	Wholesale Termination Rate

Annex 2 Worked Examples

A2.1 In this Annex, ComReg considers the rates and payment flows for a number of scenarios using a mobile originated, 10 minute, peak time call.

(a) 076 Current

(b) 076 Current –vs– Geographic

(c) 0818 Current –vs– 0818 Proposed

(d) 0818 Proposed –vs– Geographic

(e) 1890 Current –vs– 1890 Future

(f) 1800 Current –vs– 1800 Proposed

(g) 1890 Current –vs– 0818 Proposed

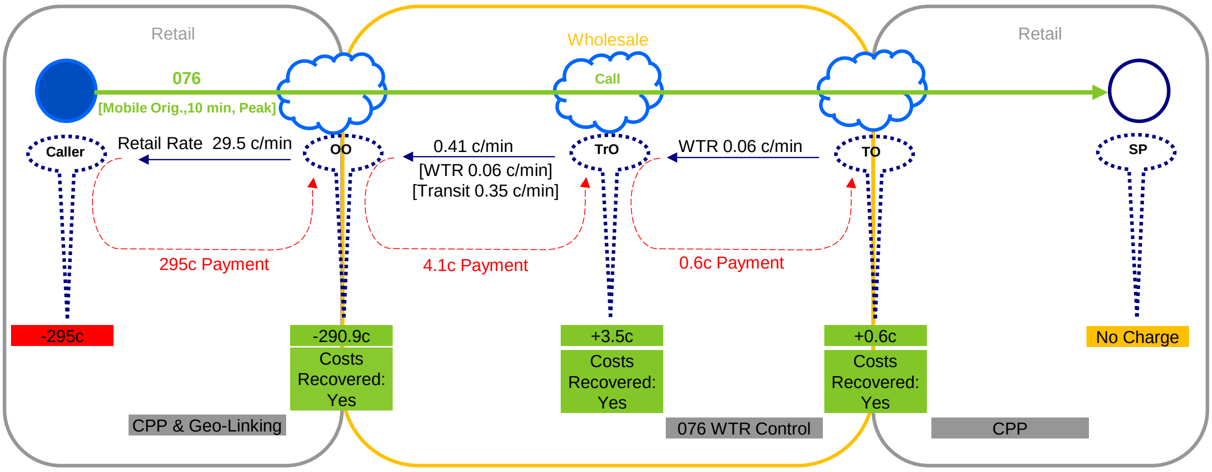
(h) 1890 Current –vs– 1800 Proposed

A2.2 The worked examples will show the flow of revenue and the cost recovery of each of the operators in the NGN Value Chain. For all worked examples, the Geo-Linking Condition is considered to be in effect (as of 1 December 2019).

A2.1 076 Current

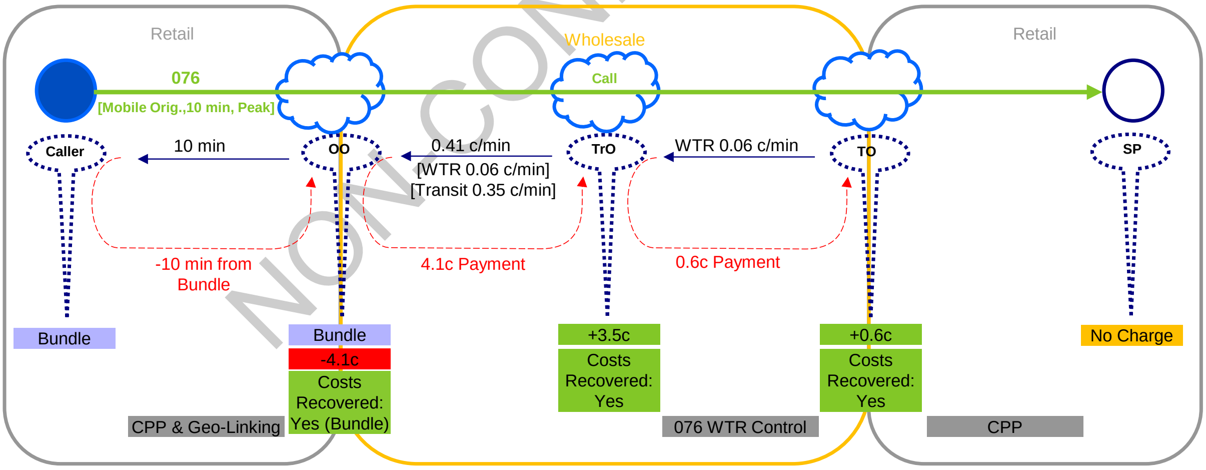
A2.3 Figure 19 below shows current sample rates and payment flows for a 10 minute, out-of-bundle peak time, mobile originated call to a 076 NGN. The caller carries much of the cost at an out-of-bundle national rate. The OO experiences a 0.41 c/minute rate as the calls transits Eircom. Transit is charged to the OO. All operators recover the incremental cost of the call from revenues received. The OO receives most of the revenue. The SP pays nothing under the CPP principle.

Figure 19: Worked example – 076 Current (Out-of-bundle)



A2.4 Figure 20 below shows sample rates and payment flows for a 10 minute, in-bundle peak time, mobile originated call to a 076 NGN. The OO experiences a 0.41 c/minute rate, being the WTR and Transit combined. Transit is charged to the OO. The TO and TrO recover the incremental cost of the call from revenues received. The OO recovers its cost from the callers bundle subscription. The SP pays nothing under the CPP principle.

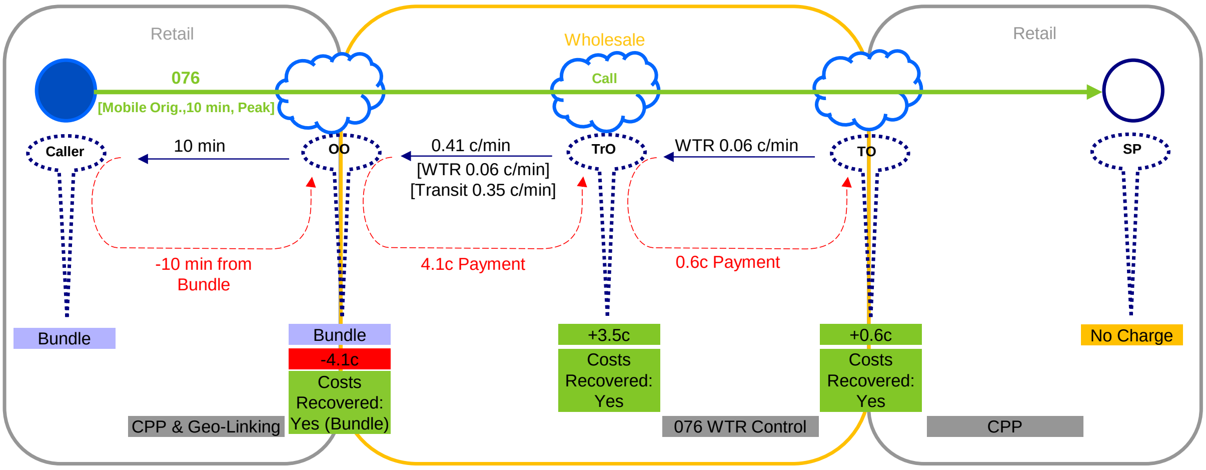
Figure 20: Worked example – 076 Current (In-bundle)



A2.2 076 Current – vs– Geographic

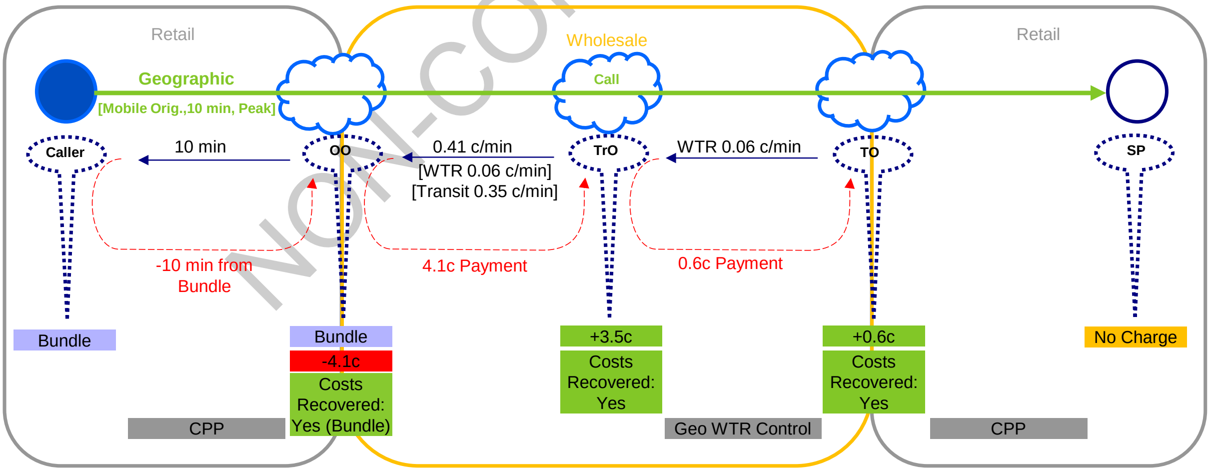
A2.5 Figure 21 below shows sample rates and payment flows for a 10 minute, in-bundle, peak time, mobile originated call to a 076. The caller has a bundle and is decremented by 10 minutes. The OO experiences a 0.41 c/minute rate, being the WTR and Transit combined. In this example Transit is charged to the OO. The TO and TrO recover the incremental cost of the call from revenues received. The OO recovers its cost from the callers bundle subscription. The SP pays nothing under the CPP principle.

Figure 21: Worked example – 076 Current (In-bundle)



A2.6 Figure 22 below shows sample rates and payment flows for a 10 minute, peak time, mobile originated call to a Geographic number (with a regulated WTR of 0.057 c/minute). The caller has a bundle and is decremented by 10 minutes. The OO experiences a 0.41 c/minute rate, being the WTR and Transit combined. Transit is charged to the OO. The TO and TrO recover the incremental cost of the call from revenues received. The OO recovers its cost from the callers bundle subscription. The SP pays nothing under the CPP principle.

Figure 22: Worked example – Geographic

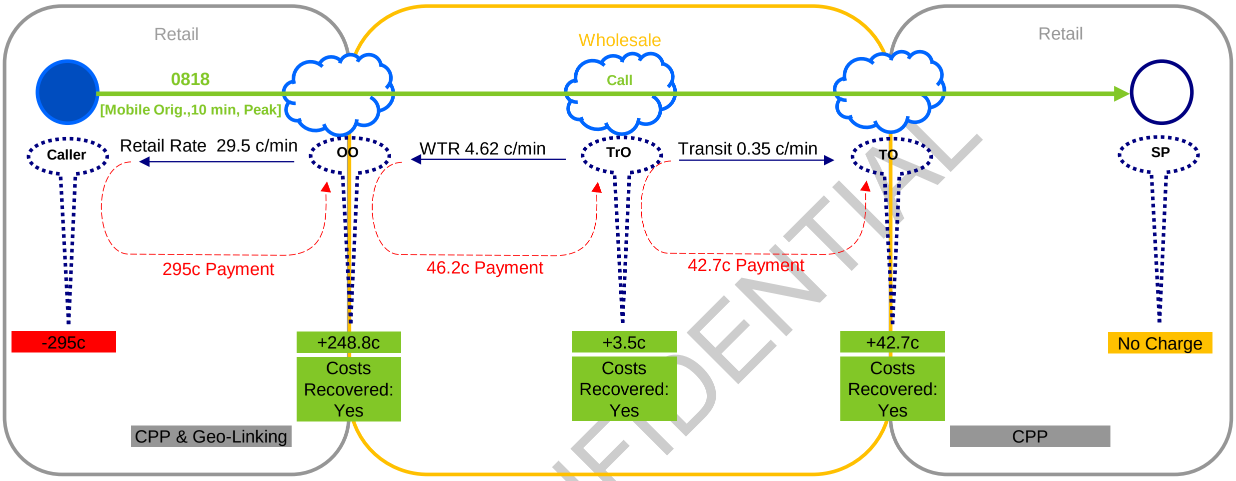


A2.7 Comparing the current arrangements for 076 NGNs with the current arrangements for Geographic numbers, shows that the rates and payment flows for a 076 call are similar to a Geographic call.

A2.3 0818 Current –vs– 0818 Proposed

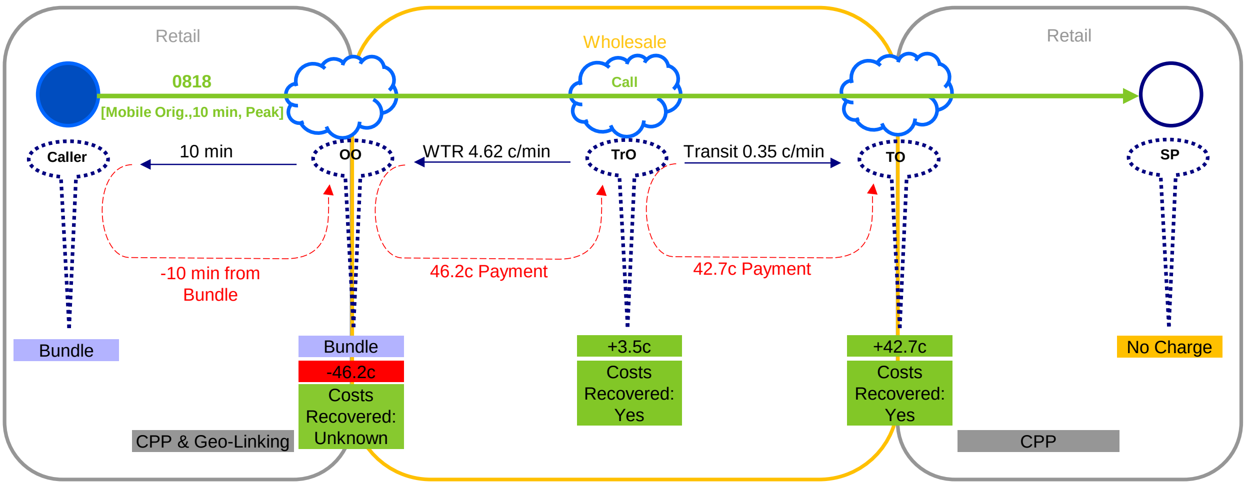
A2.8 Figure 23 below shows current sample rates and payment flows for a 10 minute, out-of-bundle peak time, mobile originated call to a 0818 NGN. The caller carries much of the cost at an out-of-bundle rate. The OO experiences a 4.62 c/minute rate as the calls transit Eircom. Transit is charged to the TO. All operators recover the incremental cost of the call from revenues received. The OO receives most of the revenue. The SP pays nothing under the CPP principle.

Figure 23: Worked example – 0818 Current (Out-of-bundle)



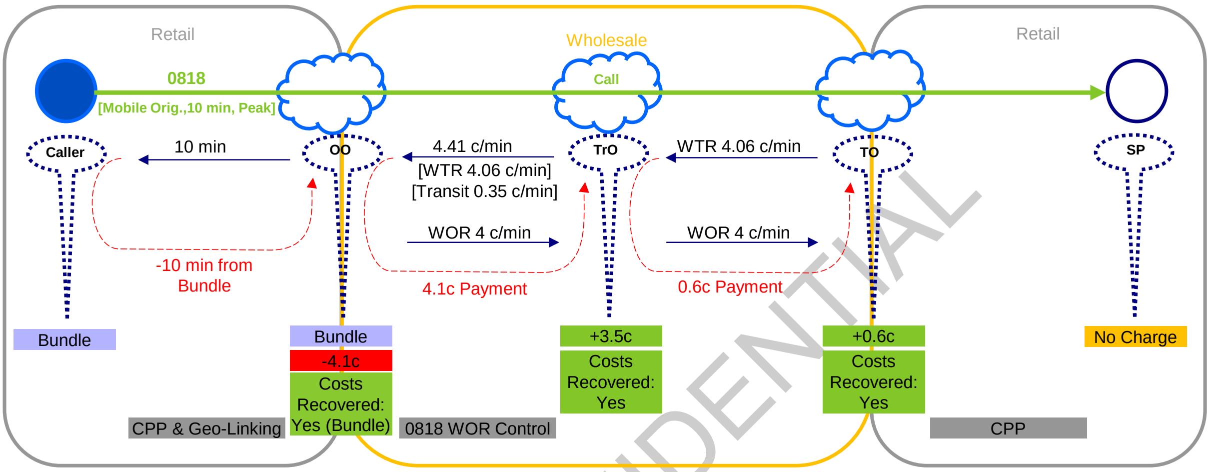
A2.9 Figure 24 below shows current sample rates and payment flows for a 10 minute, in-bundle peak time, mobile originated call to a 0818 NGN. The OO carries much of the cost as it experiences a 4.62 c/minute rate as the calls transit Eircom. Transit is charged to the TO. The OO may have difficulty recovering its costs from the caller's bundle subscription. The TrO and TO recover the incremental cost of the call from revenues received. The SP pays nothing under the CPP principle.

Figure 24: Worked example – 0818 Current (In-bundle)



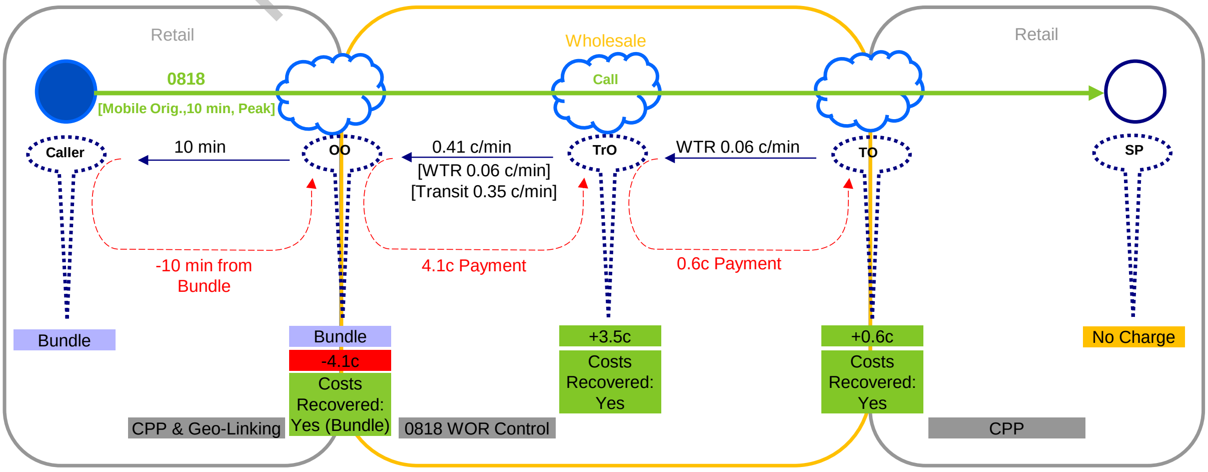
A2.10 Figure 25 below, has a 0818 WOR price control in place. The caller has a bundle and is decremented by 10 minutes. The TO charges a WTR of 4.06 c/minute, 4 c/minute above the regulated geographic Fixed Termination Rate therefore, the OO charges a WOR of 4 c/minute in response. In this example Transit is charged to the OO. The TO and TrO recover the incremental cost of the call through revenues received. The OO recovers its costs from the caller's bundle subscription. The CPP principle means that the SP pays nothing.

Figure 25: Worked example – 0818 Proposed (In-bundle with WOR)



A2.11 Figure 26 below, has a 0818 WOR price control in place. The caller has a bundle and is decremented by 10 minutes. The TO charges a WTR of 0.057 c/minute, equivalent to regulated geographic Fixed Termination Rate therefore the OO charges no WOR. In this example Transit is charged to the OO. The TO and TrO recover the incremental cost of the call through revenues received. The OO recovers its costs from the caller's bundle subscription. The SP pays nothing under the CPP principle.

Figure 26: Worked example – 0818 Proposed (no WOR)

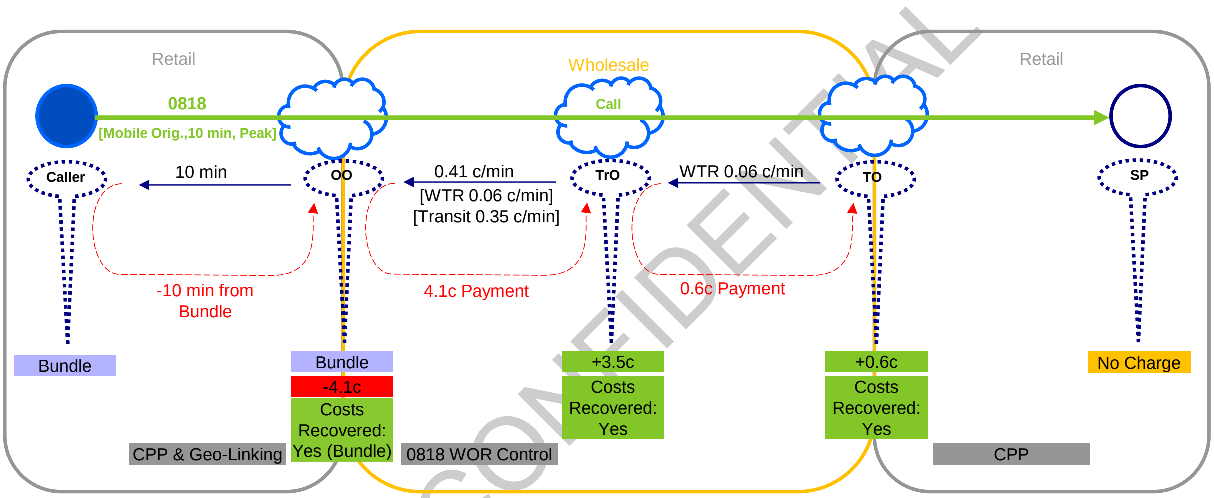


A2.12 Comparing the proposal for 0818 NGNs with the current arrangements for this number range, a 0818 WOR Control will limit OOs exposure to high WTRs.

A2.4 0818 Proposed –vs– Geographic

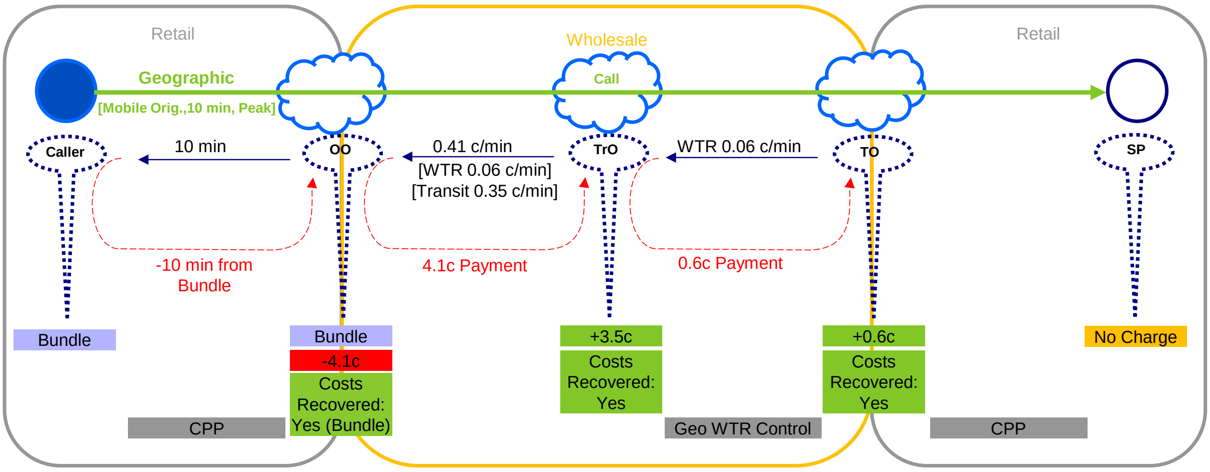
A2.13 Figure 27 below, has a 0818 WOR price control in place. The caller has a bundle and is decremented by 10 minutes. The TO charges a WTR of 0.057 c/minute, equivalent to the regulated geographic Fixed Termination Rate therefore the OO charges no WOR. In this example Transit is charged to the OO. The TO and TrO recover the incremental cost of the call through revenues received. The OO recovers its costs from the caller's bundle subscription. The SP pays nothing under the CPP principle.

Figure 27: Worked example – 0818 Proposed (no WOR)



A2.14 Figure 28 below shows sample rates and payment flows for a 10 minute, peak time, mobile originated call to a Geographic number (with Regulated FTR of 0.057 c/minute). The caller has a bundle and is decremented by 10 minutes. The OO experiences a 0.33 c/minute rate, being the WTR and Transit combined. Transit is charged to the OO. The TO and TrO recover the incremental cost of the call from revenues received. The OO recovers its cost from the caller's bundle subscription. The SP pays nothing under the CPP principle.

Figure 28: Worked example – Geographic

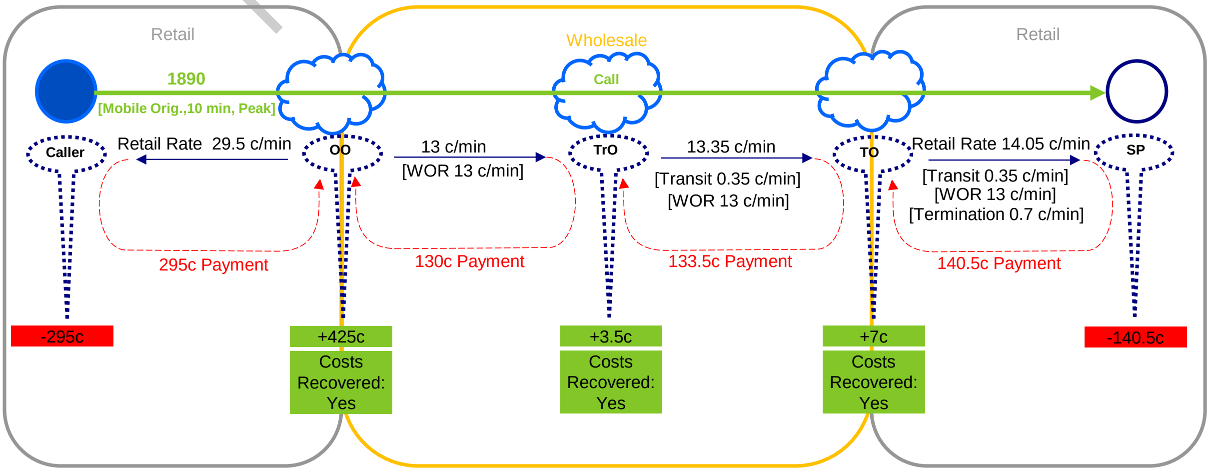


A2.15 Comparing the proposal for 0818 NGNs with the current arrangements for a Geographic call, the Geo-linking Condition and the introduction of a 0818 WOR Control will mean that the rates and payment flows for a 0818 call are broadly similar to a Geographic call.

A2.5 1890 Current –vs– 1890 Future

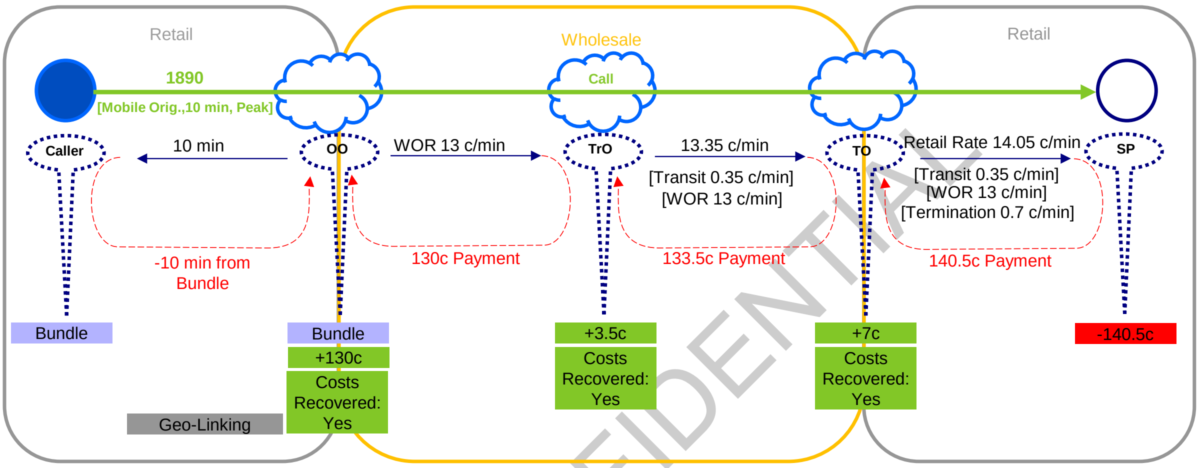
A2.16 Figure 29 below shows current sample rates and payment flows for a 10 minute, out-of-bundle, peak time, mobile originated call to a 1890 NGN. The caller carries much of the cost at an out-of-bundle rate. The SP also experiences a high charge driven by the high WOR charged by the OO. Transit is charged to the TO. All operators recover the incremental cost of the call from revenues received. The OO receives most of the revenue.

Figure 29: Worked example – 1890 Current (Out-of-bundle)



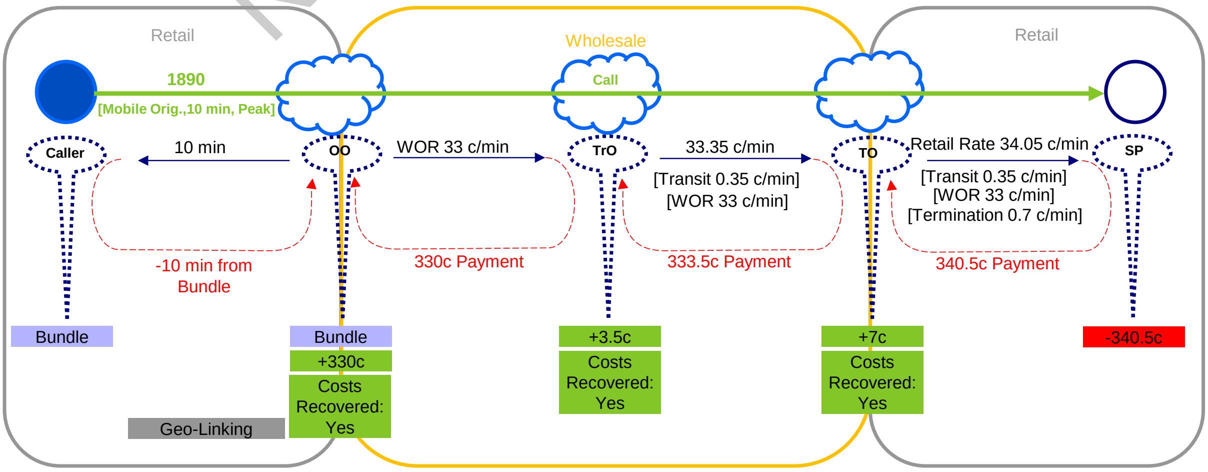
A2.17 Figure 30 below shows current sample rates and payment flows for a 10 minute, in-bundle, peak time, mobile originated call to a 1890 NGN. The caller has a bundle and is decremented by 10 minutes instead of the high out-of-bundle rate. The SP also experiences a high charge driven by the high WOR charged by the OO. . In this example, the WOR has not been increased by the OO in response to the Geo-linking Condition. Transit is charged to the TO. All operators recover the incremental cost of the call from revenues received. The OO still receives most of the revenue but less than in the previous example.

Figure 30: Worked example – 1890 Current (In-bundle)



A2.18 Figure 31 below, is similar to the example above except that the WOR has been increased by 20 c/minute by the OO in response to the Geo-linking Condition. The SP now experiences a higher charge driven by the higher WOR. Transit is charged to the TO. All operators recover the incremental cost of the call from revenues received. The OO still receives most of the revenue.

Figure 31: Worked example – 1890 Future (Increased WOR)

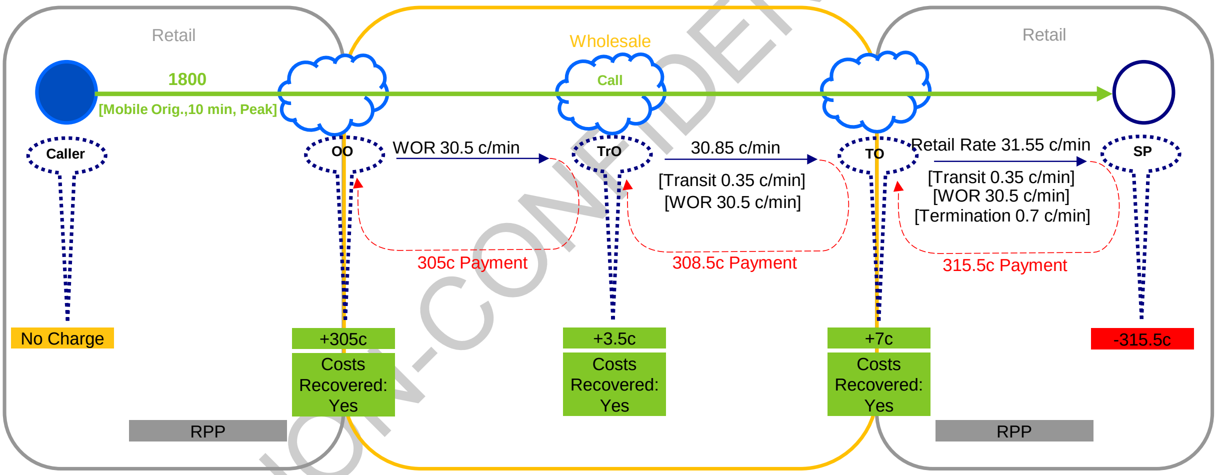


A2.19 Comparing the current and future arrangements for 1890, the Geo-linking Condition will benefit callers. OOs may continue to levy high WORs resulting in high charges to SPs. As ComReg has noted, Shared Cost ranges are being consolidated into 0818 and 1800. A comparison of this 1890 call to a 0818 or 1800 call (detailed at paragraphs A2.24 to A2.29 of this Decision) would reduce the rate to SPs to either zero (0818) or ~ 2.5 c/minute (1800) from the ~13.97 c/minute rate currently.

A2.6 1800 Current –vs– 1800 Proposed

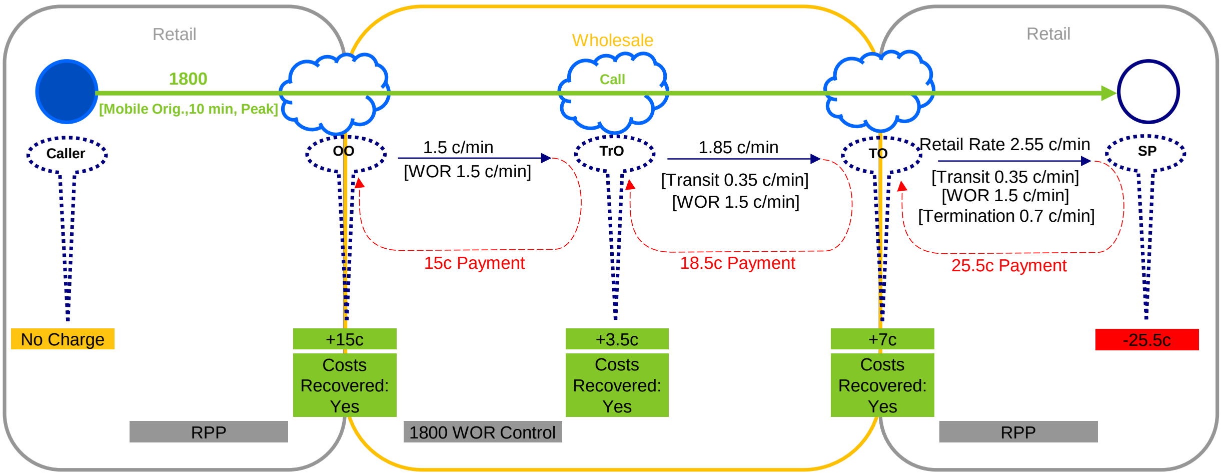
A2.20 Figure 32 below shows current sample rates and payment flows for a 10 minute, peak time, mobile originated call to a 1800 NGN. The caller pays nothing under the RPP principle. The OO levies a high WOR of 30.5 c/minute. Transit is charged to the TO. All operators recover the incremental cost of the call from revenues received. The OO receives most of the revenue. The SP experiences a high charge driven by the high WOR of the OO.

Figure 32: Worked example – 1800 Current



A2.21 Figure 33 now has a 1800 WOR Control in place. The caller still pays nothing under the RPP principle. The OO levies a reduced WOR of 1.5 c/minute. Transit is charged to the TO. All operators still recover the incremental cost of the call from revenues received. The OO receives most of the revenue. The SP experiences a lower charge driven by the lower WOR of the OO.

Figure 33: Worked example – 1800 Proposed



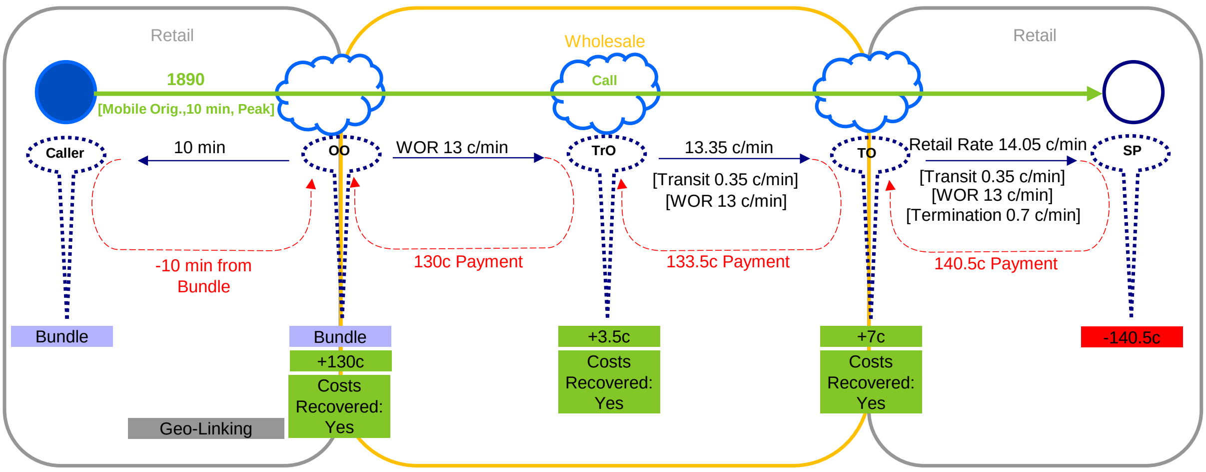
A2.22 Comparing the proposal for 1800 NGNs with the current arrangements for this number range, the 1800 WOR control will reduce the charges faced by SPs.

A2.23 ComReg notes that the examples in Figure 32 and Figure 33 assume a Retail rate from the TO to the SP close to or at the incremental costs incurred. ComReg notes that it is possible that TOs may increase retail rates negating any reduction in the charge to the SP resulting from the 1800 WOR control. ComReg is of the view that SPs can move to other TOs and that competition in between TOs for SPs using 1800 NGNs will ensure that retail rates to SPs for 1800 calls are not excessive.

A2.7 1890 Current –vs– 0818 Proposed

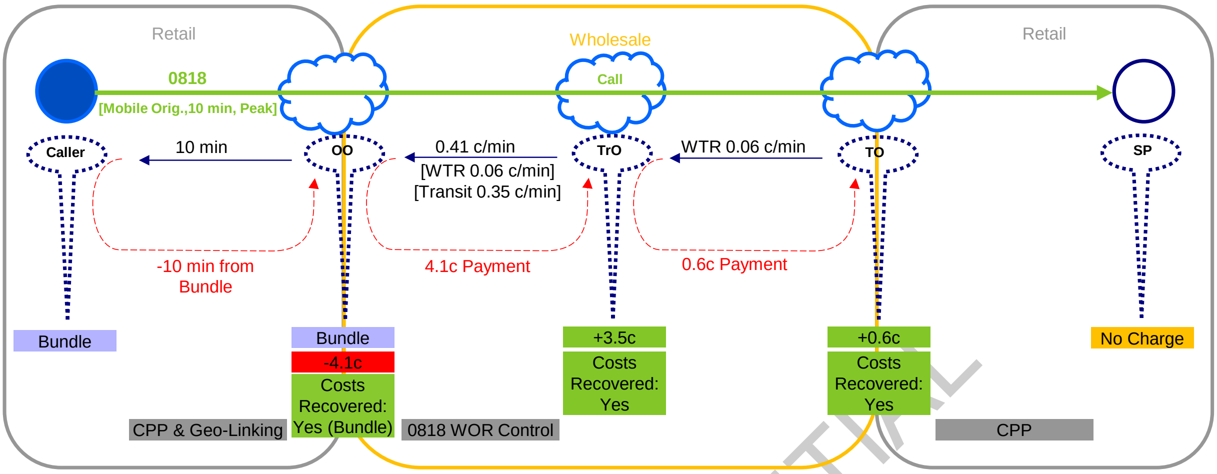
A2.24 Figure 34 below shows current sample rates and payment flows for a 10 minute, in-bundle, peak time, mobile originated call to a 1890 NGN.

Figure 34: Worked example – 1890 Current (In-bundle, no increase in WOR)



A2.25 Figure 35 below shows current sample rates and payment flows for a 10 minute, peak time, mobile originated call to a 0818 NGN with the Geo-linking Condition and a 0818 WOR control in place.

Figure 35: Worked example – 0818 Proposed (no WOR)

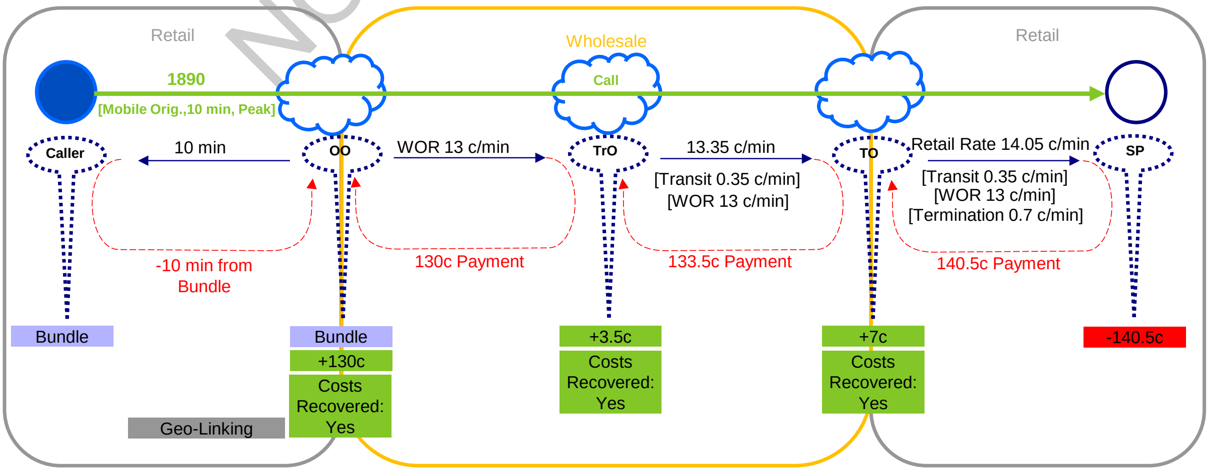


A2.26 SPs migrating from 1890 to 0818 would no longer face high charges to provide services on an NGN. Callers with bundles would benefit from the Geo-linking Condition when calling the SP.

A2.8 1890 Current –vs– 1800 Proposed

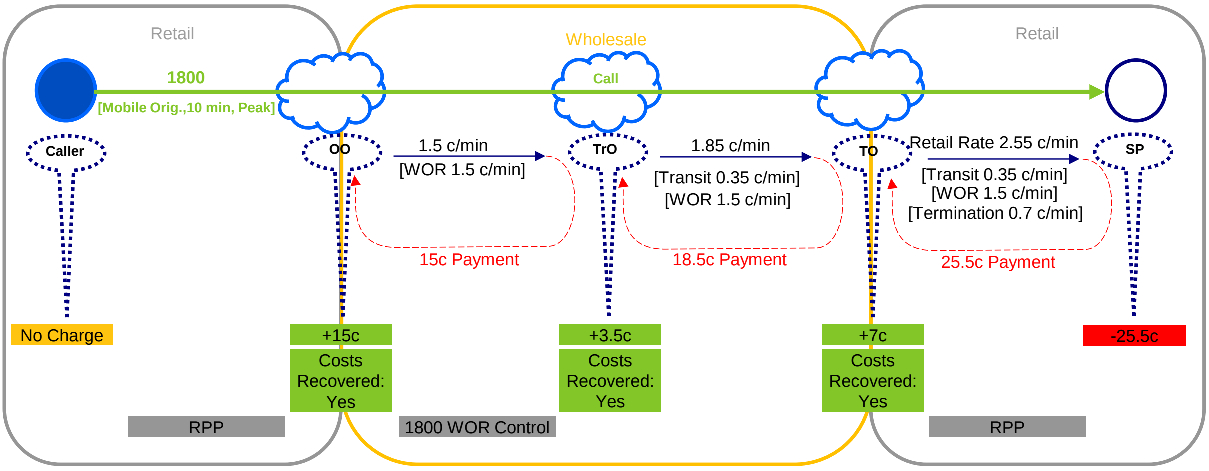
A2.27 Figure 36 below shows current sample rates and payment flows for a 10 minute, in-bundle, peak time, mobile originated call to a 1890 NGN.

Figure 36: Worked example – 1890 Current (In-bundle, no increase in WOR)



A2.28 Figure 37 below shows current sample rates and payment flows for a 10 minute, peak time, mobile originated call to a 1800 NGN with the Geo-linking Condition and a 1800 WOR control in place.

Figure 37: Worked example – 1800 Proposed



A2.29 SPs migrating from 1890 to 1800 would experience significantly reduced charges to provide services on an NGN. Calls to 1800 are free to the caller under the RPP principle.

Annex 3 Non- Confidential Submissions to ComReg Document Number 18/65

A3.1 See : https://www.comreg.ie/publication/submissions-to-consultation-18-65/

A3.2 Detailed review of these submissions was included at Annex 8 to the Consultation. See: https://www.comreg.ie/publication/response-to-consultation-further-consultation-and-draft-decision-access-to-non-geographic-numbers-imposition-of-price-control-and-transparency-obligations

Annex 4 DotEcon Annex

A4.1 See ComReg Document Number 20/04a

Annex 5 AM Annex

A5.1 See ComReg Document Number 20/04b

Annex 6 TERA Annex

A6.1 See ComReg Document Number 20/04c

Annex 7 Review of Submissions to the Consultation

A7.1 In the Consultation ComReg invited all interested parties to respond to the questions raised. ComReg said it would analyse and consider the comments received and in light of such would then review the proposals set out in the Consultation and amend them as necessary.

A7.2 This Annex provides a summary and assessment of the eight Submissions[122] received in response to the Consultation. The Respondents to the Consultation were Three Ireland (Hutchison) (**"**Three**"**) Limited, Eircom Limited (**"Eircom"**), BT Communications Ireland Limited (**"**BT**"**), Tesco Mobile Ireland Limited (**"**TMI**"**), Verizon Ireland Limited (**"**Verizon**"**) and Vodafone Ireland Limited (**"**Vodafone**"**), Colt Technology Services Limited (**"**Colt**"**) and Virgin Media Ireland Limited (**"**Virgin Media**"**).

A7.3 A total of 14 questions were posed throughout the Consultation on which input was sought from interested parties on ComReg's preliminary views in relation to the key topics discussed in the Consultation.

A7.4 The main sections in the Consultation and the associated questions on which feedback was sought were as follows:

Section of Consultation	Topic Discussed	Consultation Question
Section 4.6-4.9	NGN Charge Flows	Q.1 Do you agree with the current and future NGN charge flows detailed in Figure 7 to Figure 13 below in Sections 4.6 to 4.9 and the associated text?

[122] Please see ComReg Document 19/46s

Section of Consultation	Topic Discussed	Consultation Question
Section 4.6-4.9	NGN Charge Flows	Q. 2 ComReg requests that if Respondents consider that the analysis below in Sections 4.6 to 4.9 is incorrect that a detailed description is provided and supported, where appropriate, with sample (non-confidential) interconnection agreement(s)?
Section 4.6	Regulatory Forbearance on 076	Q. 3 Do you agree with ComReg's preliminary conclusion on wholesale charges for 076?
Section 4.7	Regulatory Forbearance on 1850/1890	Q. 4 Do you agree with ComReg's preliminary conclusions on wholesale charges for Shared Cost numbers?
Section 4.8	Price Control for 0818	Q. 5 Do you agree with ComReg's preliminary conclusions on wholesale charges for 0818 numbers?
Section 4.9	Price Control for 1800	Q. 6 Do you agree with ComReg's preliminary conclusions on wholesale charges for calls to 1800 numbers?
Section 4.10	Modelling Principles for Freephone NGNs	Q. 7 Do you agree with the costing principles proposed for modelling the costs to inform the wholesale charges for call origination to Freephone NGNs, as outlined in the DotEcon Report and summarised in Section 4.10 of this Consultation?
Section 5.3	MVCO Modelling	Q. 8 Do you agree with ComReg's preliminary view that the Draft MVCO Model is appropriate for determining a LRAIC+ for Mobile Voice Call Origination to a Freephone NGN?

Section of Consultation	Topic Discussed	Consultation Question
Section 5.3	MVCO Modelling	Q. 9 Do you agree with the approach taken to include an additional mark-up to the LRAIC+ for MVCO to allow for the recovery of a proportion of the common costs not recovered in the Pure LRIC for Mobile Voice Call Termination?
Section 5.3	Cost Modelling – Retail Costs	Q. 10 Do you agree with the approach taken to quantify the reasonable retail costs that are relevant to calls originating to Freephone numbers hosted on another operator's network?
Section 6.5	FVCO Modelling	Q. 11 Do you agree with ComReg's preliminary view that the Draft FVCO Model is appropriate for determining a LRAIC+ cost for Fixed Voice Call Origination to a Freephone NGN?
Section 6.5	FVCO Modelling	Q. 12 Do you agree with the approach taken to include an additional mark-up to the LRAIC+ for FVCO to allow for the recovery of a proportion of the common costs not recovered in the Pure LRIC for Fixed Voice Call Termination?
Section 6.5	Cost Modelling – Retail Costs	Q. 13 Do you agree with the approach taken to quantify the reasonable retail costs that are relevant to calls originating to Freephone numbers hosted on another operators network?

Section of Consultation	Topic Discussed	Consultation Question
Chapter 7	RIA	Q. 14 Do you have any comment on the Regulatory Impact Assessment and in your opinion are there other factors which ComReg should consider in completing its Regulatory Impact Assessment? Please provide reasons for your response, clearly indicating the relevant paragraph numbers to which your comments refer, along with relevant factual evidence supporting your views.

A7.5 ComReg now considers each of the above topics on a question by question basis. The approach is as follows:

(a) ComReg's preliminary view is summarised;

(b) The relevant question is then set out;

(c) The Respondents that replied directly to the question are listed;

(d) The overall response of each Respondent to the question is referenced;

(e) The main issues raised by the Respondents regarding the question are identified;

(f) For each issue, ComReg then summarises the points made by Respondents and assesses the issue and points made; and

(g) ComReg then concludes with its response to the issue.

A7.1 Questions 1 & 2 Responses – Current and Future NGN Charge Flows

A7.6 In Sections 4.6 to 4.9 of the Consultation ComReg considered the current and future charging arrangements for each category of NGN along with the potential harm that may arise in respect of future charging arrangements.

A7.7 ComReg asked the following question, Question 1, in the Consultation:

"Do you agree with ComReg's description of the current and future NGN charge flows detailed in Figure 7 to Figure 13 below in Sections 4.6 to 4.9 and the associated text?"

A7.8 ComReg asked the following question, Question 2, in the Consultation:

"ComReg requests that if Respondents consider that the analysis below in Sections 4.6 to 4.9 is incorrect that a detailed description is provided and supported, where appropriate, with sample (non-confidential) interconnection agreement(s)."

A7.9 ComReg received seven responses to Question 1 and Question 2.

Eircom	Vodafone	TMI	Colt	BT	Virgin Media	Three
✓	✓	✓	✓	✓	✓	✓

A7.10 Colt, Eircom and Three were in general agreement with the charge flows as shown. TMI stated that they did not have any comments

A7.11 Vodafone and BT were in general agreement but noted some issues to be considered.

A7.12 Virgin Media commented that the setup of the wholesale market for NGNs is quite complicated and suggested a few points requiring clarification.

Issues raised regarding NGN charge flows

A7.13 Issues were raised regarding

(a) Labelling adjustments/clarifications.

(b) Transit issues

Issue raised – Labelling adjustments and/or clarifications

A7.14 BT commented on the need to make it clear in the Decision Instrument that the direction of transit charges would change in future as shown in Figure 8 (for 076 NGNs) and Figure 11 (for 0818 NGNs) in the Consultation. BT also noted an error in referencing that paragraphs 4.44 and 4.45 in the Consultation should refer to Figure 7 not Figure 5 and Figure 6 respectively.

A7.15 Virgin Media suggested that notes should be added to relevant figures stating that the treatment of charges might differ depending on whether a call is originated on a fixed or mobile network.

A7.16 Virgin Media also stated that Figure 10 and Figure 11 need to be updated to take account of the recent decision around termination for 0818.

A7.17 Various Respondents drew attention to some incorrect references.

ComReg's Issue Assessment – Labelling adjustments and/or clarifications

A7.18 Regarding the direction of charging of transit for 076 and 0818 NGNs. The changes to the direction of charging of transit in future will be voluntary and not mandatory. This matter is considered further at paragraphs A7.24 to A7.42 of this Decision document.

A7.19 The referencing error noted by BT is accurate. Please see paragraphs 4.28 and 4.29 of this Decision document. Both paragraphs now refer to Figure 6 .

ComReg's Response to Issue – Labelling adjustments and/or clarifications

A7.20 ComReg has reviewed all of the relevant figures and made the necessary adjustments. Please refer to Sections 4.3 to 4.6 of this Decision document.

Issue raised – Transit Issues

A7.21 BT, while in agreement with proposal of forbearance for 1850/1890 number ranges, noted that there will be a transit issue for the interim operation of these number ranges. Vodafone made similar comments.

A7.22 BT and Vodafone noted for 1800 that Figures 12 and 13 in the Consultation are the same but with different titles which creates concern that the payment of transit charging remains with the TO which creates a lack of incentive for efficient routing.

A7.23 Virgin Media requested clarity on Figures 8 and 11 in the Consultation stating that both figures suggest that the flow of the transit charges is going to change for 076 and for 0818 from the TO paying to the OO paying. They state they cannot see any rationale in the paper for changing the flows.

ComReg's Issue Assessment – Transit issues

A7.24 At the time of the Consultation, the charging arrangements for transit for all NGNs in scope (0818, 1890, 1850, 1800, 076) was that transit charges were levied by the TrO on the TO (i.e. transit was charged by the TrO in the "direction" of the TO).

A7.25 In Figure 8 and Figure 11 of the Consultation in which ComReg described the future charging arrangements for transit for 0818 and 076 NGNs, the diagrams reflected a different arrangement than the current arrangements whereby transit charges were shown to be levied by the TrO on the OO. The arrangements for charging for transit (i.e. whether it is charged to the TO or the OO) or the charges themselves either currently or in future is not mandated by ComReg (transit was de-regulated by ComReg Decision D05/15[123]).

A7.26 The future transit charging arrangements shown in Figures 8 and 11 in the Consultation for 0818 and 076 NGNs were not intended to represent an outcome that was the result of a direct intervention by ComReg in relation to transit. In these diagrams ComReg anticipated that, in the event that that a price control was introduced on either of these ranges (either a termination price control for 076 NGNs or an origination price control for 0818 NGNs), there would be a voluntary change effected in transit charging arrangements.

A7.27 In respect of 076 NGNs, at the time of the Consultation, calls to these NGNs were not subject to a price control regulation. The Termination Markets Decisions had not yet been imposed. On 1 August 2019 the Termination Markets Decisions became effective, with a requirement to implement a FTR for calls to 076. In advance of the implementation of the Regulated FTR, Eircom noted that for calls to 076 NGNs that transit it's network, it intended to levy any applicable transit charges on the OO and no longer to the TO.

A7.28 In respect of 0818 NGNs, ComReg proposed an origination price control in the Consultation. While this is different to the regulation of 076, it is anticipated that that the 0818 price control will result in similar voluntary changes for 0818 transit. This view was reflected in the future transit charging arrangements for 0818 NGNs shown in Figure 11 of the Consultation. This position is now supported by the proposed change in transit charging arrangements for calls to 076 NGNs. ComReg therefore remains of the view that a voluntary change in transit charging arrangements for calls NGNs to 0818 NGNs will be an indirect outcome of this Decision. It should be noted that the proposed price control for 0818 relates to a 0818 WOR chargeable by an OO only in the event that there is a 0818 WTR greater than the Regulated FTR. Any transit charges (either charged to the TO or the OO) are separate from this measure. It would not be appropriate for any 0818 WOR to exceed the level set out in the Decision Instrument as a means to recover the cost of transit.

[123] https://www.comreg.ie/publication/market-review-wholesale-fixed-voice-call-origination-and-transit-markets/

A7.29 ComReg supports the proposed voluntary change to 076 transit arrangements and any similar change to 0818 in the future. If the NGN charging arrangements are viewed as system, it is logical that; for a call operating on the CPP principle (e.g. Geographic numbers, 0818, 076) any wholesale charges would be directed towards the end of the system where payments are made (i.e. the caller end). A wholesale charging arrangement where both termination and transit are charged to the caller (via the OO) is well established having been successfully in effect for many years on Geographic numbers.

A7.30 In respect of 1890 and 1850 NGNs, ComReg has proposed regulatory forbearance on the basis that both ranges will be withdrawn at the end of 2021. Therefore, operators may continue to negotiate and agree on charges and charging directions on a commercial basis as they do currently. For transit for calls to 1890 and 1850 NGNs in particular, this is currently charged by the TrO to the TO (as noted above). As TOs charge the SP for the call any transit charges (and other wholesale charges) will be paid for by the SP as part of the retail charge levied by the TO.

A7.31 In the diagrams figures 29, 30, 33 and 35 in the Consultation in which ComReg described the future charging arrangements for transit for 1890 and 1850 NGNs, the diagrams reflected the current arrangements whereby transit charges were shown to be levied by the TrO on the TO. This view was based on a position that current arrangements are likely to remain the same until the ranges are withdrawn. ComReg remains of this view.

A7.32 In the unlikely event that the charging arrangements for 1890 and 1850 NGNs did change, OOs would be subject to transit charges. However OOs may charge at both the retail and wholesale level for origination of calls to these ranges. OOs would therefore have options to recover this cost without experiencing significant losses.

A7.33 In respect of 1800 NGNs, ComReg proposed an origination price control in the Consultation. However, it is expected that there will be no change to the charging arrangements for transit for 1800 in future. For calls to 1800 the recipient pays for the call (RPP Principle), the caller pays nothing. As with Geographic calls and 076 the direction of call charges is towards the payment source, in the case of 1800, towards the SP (via the TO).

A7.34 As noted for a 1800 call, the OO cannot charge the caller, and may only levy wholesale charges for these calls on the TO. Transit is also charged to the TO. A voluntary change to this transit charging arrangement is unlikely on the basis that, should an OO be subject to a new transit charge, and the OOs 1800 WOR is set at the rate required by this Decision, the new transit charge would result in a net loss for the OO. Therefore, in the event that new wholesale charges arise in future that are not currently evident (i.e. a 1800 WTR from the TO to the OO or, a transit charge from the TrO to the OO) ComReg would have to re-evaluate the maximum 1800 WOR in this Decision.

A7.35 As noted, ComReg anticipates that the charging arrangements for 1800, 1890 and 1850 will remain as they are currently (transit charged by the TrO to the TO). With regard to the interconnection between operators for all calls (including NGNs), firstly, the OO and TO may each have interconnect agreements with one or more TrO. Secondly, OOs and TOs may also have separate interconnect agreements directly with each other. Thirdly, some OOs and TOs may use transit to connect (i.e. not directly connected) but have separate billing arrangements with each other for origination and termination charges. In the case of all calls involving transit, it is the OO that chooses which TrO will carry the call. As noted for certain NGN ranges the TO pays the relevant transit charge. The TO must therefore pay the charge levied by whichever TrO was selected by the OO.

A7.36 Some Respondents noted that OOs did not consider the TrO charge when selecting the TrO and consequently a TO could be subject to a certain transit rate from a chosen TrO when a cheaper alternative transit rate was available if the OO had chosen another TrO. The same Respondents expressed a preference that ComReg would require that either:

(a) transit for all calls is charged to the OO (where that is not already the case).

(b) OOs must select the TrO which has the lowest transit rate charged to the TO

A7.37 For 1850 and 1890, it is ComReg's position that it is reasonable for transit to continue to follow the arrangements in place now until these number ranges are withdrawn.

A7.38 For 1800, with regard to mandating that the direction of charging of 1800 transit change to a charge levied on the OO, it is ComReg's position (as noted above) that if transit charges were levied by the TrO on the OO, this would result in an increase in the maximum 1800 WOR. Consequently, the transit charge levied on the OO would be indirectly charged through to the TO as part of the 1800 WOR.

A7.39 Regarding requiring that the OO select the TrO with the lowest transit charge for the TO, in the first instance the transit market is not subject to ex-ante regulation therefore transit arrangements and rates are the outcome of commercial agreements in a competitive market.

A7.40 Secondly, the transit charge for a call transiting a TrO is, in general, the same whether the transit charge is levied on the OO or the TO. This is the observed case with Eircom, the largest provider of transit. OOs will originate many millions of call minutes per month to various number ranges. The bulk of these will be to numbers that, if transit is required, will result in a transit charge levied by the TrO on the OO (e.g. Mobile terminated calls; fixed terminated calls, calls to 076). To reduce these transit charges, OOs may decide to bypass transit entirely by directly interconnecting with a TO. If an OO does not wish to directly interconnect with a TO, the OO will typically use a single TrO to provide transit for all types of call. This choice of TrO by the OO, in a competitive market, will be driven by what is best for the OO from a commercial and technical perspective given that the profile of originated calls being sent to the TrO will result in charges levied on the OO that are many multiples of any charges levied on a TO for the proportionately lower volume of calls to the ranges where the TO pays for transit.

A7.41 It is ComReg's position that it would not be appropriate to require that OOs have separate transit interconnect arrangements for different number ranges.

A7.42 ComReg notes that commercially negotiated WORs and WTRs may result in disagreements between TO and OOs from time to time. In such circumstances, ComReg reminds all operators (either OO, TrO or TO) that ensuring that callers can continue to access all numbers in the Irish numbering plan is of prime importance. Blocking of calls to certain numbers by any operator will put that operator at risk of non-compliance with the General Authorisation.

ComReg’s Response to Issue – Transit Issues

A7.43 In summary on the points raised above on Transit issues:

(a) The transit market is not subject to ex-ante regulation therefore transit arrangements and rates are the outcome of commercial agreements in a competitive market.

(b) ComReg supports the proposed voluntary change to 076 transit arrangements and any similar change to 0818 in the future which will result in Transit charges been charged to the OO rather than the TO

(c) For 1850 and 1890, it is ComReg's position that it is reasonable for transit to continue to follow the arrangements in place now (i.e. Transit charges continue to be charged to the TO) until these number ranges are withdrawn.

(d) For 1800 it is ComReg's position that it is expected that there will be no change to the current charging arrangements for transit for 1800 in future (i.e. Transit charges continue to be charged to the TO).

A7.2 Question 3 Responses – Regulatory Forbearance for 076

A7.44 In Chapter 4 of the Consultation ComReg considered current and future charging arrangements for the 076 number range along with the potential harm that the introduction of wholesale charges might create. Based on this ComReg reached the preliminary view that the appropriate price control in relation to 076 is regulatory forbearance.

A7.45 ComReg asked the following question, Question 3, in the Consultation:

"Do you agree with ComReg's preliminary conclusion on wholesale charges for 076 numbers?"

A7.46 ComReg received seven direct replies to the question:

Eircom	Vodafone	TMI	Colt	BT	Virgin Media	Three
✓	✓	✓	✓	✓	✓	✓

A7.47 TMI, Virgin Media, Three and Vodafone agreed with ComReg's position.

A7.48 Eircom stated that they agreed with forbearance but noted concerns on imposing the Regulated FTR from 1 August 2019 until numbers are withdrawn in December 2021.

A7.49 Colt did not agree with the proposal. Colt stated that imposing regulated call termination as a standalone measure will not be enough to deter OOs from levying excessive WORs over the next two years.

A7.50 BT stated that while they are of the view that the 076 range should be saved, they note the finite time remaining before the closure of 076 and stated that they fully support the ComReg proposal to change the transit direction in Figure 8 as such is appropriate for the Calling Party Pays model.

Issues raised regarding 076 numbers

A7.51 Issues were raised regarding

(a) Ability to recover costs using Regulated FTR

(b) Risk of excessive WORs over next two years

Issue raised – Cost Recovery

A7.52 Eircom noted concern on imposing Regulated FTR from 1 Aug 2019 for two years until numbers are withdrawn. They stated that the Regulated FTR will not allow them to recover the LRIC of the network elements used therefore stranding Open Eir network costs until the numbers are withdrawn.

ComReg's Issue Assessment – Cost Recovery

A7.53 ComReg notes Eircom's concerns in relation to the application of FTR charges to 076 call terminations from August 1 2019, which will apply until the removal of the number range at end December 2021. Eircom has noted the risk of the under-recovery or stranding of some LRIC bas network costs associated with the termination of 076 calls. Eircom states that this arises when the Regulated FTR LRIC based charge, which is outlined in the Termination Markets Pricing Decision, is applied to 076 call terminations.

A7.54 Eircom noted that the FTR LRIC tariff charge does not consider the fact that all 076 calls must be managed at the tertiary node level, where IP voice traffic is managed, before onward conveyance to the network exchange where the 076 number is hosted. Therefore Eircom suggested that a higher FTR rate needs to be applied to the termination of such calls.

A7.55 ComReg notes that the FTR cost model used to determine the FTR rate, is based on a forward-looking bottom-up cost model, designed to reflect an IP/IMS network which already considers that all traffic must be managed at the top of the network hierarchy (or the tertiary layer). This is evident in the routing factors used for all call terminations, including those for 076 calls. In this context, the FTR LRIC based tariff derived in the FTR cost model, already reflects the LRIC based costs for 076 call terminations. Thus ComReg is of the view that no LRIC costs have been omitted in the derivation of the LRIC based cost base for call terminations to 076 numbers.

A7.56 . One issue that must be given clarification however is that up to now OOs could set any origination rate for 0818 but had not chosen to do so. There was no regulation preventing this. Similarly, for 1800, TOs did not charge a WTR. Again this was by choice, there was no obligation prohibiting this. In the event that TOs started to charge a WTR for 1800, ComReg would have to re-evaluate the 1800 WOR. The 1800 WOR proposed is based on current costs faced by the OO. Any new costs (such as a WTR) would require a re-calculation of the 1800 WOR

ComReg’s Response to Issue – Cost Recovery

A7.57 While noting concerns raised, ComReg is of the view that no LRIC costs have been omitted in the derivation of the LRIC based cost base and therefore the proposal for 076 remains unchanged.

Issue raised – Risk of excessive WORs in short term

A7.58 In its response Colt stated that it is of the view that imposing regulated call termination as a standalone measure will not be enough to deter OOs from levying excessive WORs over the next two years.

ComReg’s Issue Assessment – Risk of excessive WORs in short term

A7.59 ComReg outlined at Section 4.6.3 of the Consultation the view that in the event that WTRs for calls to 076 numbers are regulated, OOs will not introduce WORs for calls to 076 numbers. ComReg’s view was based on the behaviour of OOs for calls to Geographic numbers, where OOs are charged a regulated termination rate and recover origination costs from retail bundle subscriptions or out-of-bundle call rates without charging a WOR. 076 numbers are regulated with a cost based FTR since 1 August 2019 and to date no WOR has been introduced.

A7.60 Any possible impact resulting from the potential introduction of WORs for the 076 number range is mitigated by the fact that this number range is being withdrawn by end December 2021.

ComReg’s Response to – Risk of Excessive WORs

A7.61 Given that 076 numbers are now subject to a cost based termination rate coupled with the fact that this range will be withdrawn by the end of 2021 ComReg remains of the view that there is no additional wholesale price control required for call origination of calls to 076 numbers.

A7.3 Question 4 Responses – Regulatory Forbearance on Shared Cost numbers

A7.62 In Chapter 4 of the Consultation ComReg considered current and future charging arrangements for the 1850/1890 number ranges along with the potential harm that the introduction of wholesale charges might create. Based on this ComReg reached the preliminary view that forbearance in relation to 1850/1890 was appropriate.

A7.63 ComReg asked the following question, Question 4, in the Consultation:

"Do you agree with ComReg's preliminary conclusion on wholesale charges for Shared Cost numbers?"

A7.64 ComReg received seven direct replies to the question:

Eircom	Vodafone	TMI	Colt	BT	Virgin Media	Three
✓	✓	✓	✓	✓	✓	✓

A7.65 TMI, Three and Eircom agreed with ComReg's position.

A7.66 BT understood the forbearance position but highlighted concerns.

A7.67 Vodafone, Virgin Media and Colt did not agree with ComReg.

Issues raised regarding Shared Cost numbers

A7.68 The main issues raised were in relation to:

(a) Migration issues

(b) Harm arising due to timing of wholesale measures

(c) Proposed limited continuation of 1850

Issue raised – Migration Issues

A7.69 BT stated that while they understand the proposal to forbear they consider that ComReg is optimistic that SPs can quickly and easily move to 1800/0818 numbers. They consider that while some SPs will be able to move easily others will not. It might vary depending on how much a SP has invested in its numbers such as the need to change marketing material, stationery, vehicles etc.

A7.70 Vodafone made similar comments that migration may not be as easy as is being forecast.

A7.71 Colt also commented on the possibility of the migration process being potentially lengthy and costly for SPs.

A7.72 Virgin Media commented that ComReg will need to ensure that all operators abide by the plans and respond promptly to any migration requests. They also commented that operators may not be incentivised to switch which may result in delays and a large influx of migrations towards the end of the period.

ComReg's Issue Assessment – Migration issues

A7.73 As part of the Consolidation Condition imposed by the NGN Decision ComReg considered the above issues that might arise in getting SPs to migrate to the remaining NGN number ranges. The migration period was assessed in detail as part of ComReg's "NGN Consolidation RIA" included at Section 3.5 of the NGN Decision. This assessment was informed in part by the B&A NGN Materials Cost Survey[124] which provides details on:

(a) what migration costs organisations could face if ComReg proceeded to consolidate ranges in the short-run for the benefit of consumers; and

(b) whether an alternative time period could reduce or eliminate the costs faced by organisations while not unduly delaying the benefits of consolidation to consumers.

A7.74 Readers are referred to paragraphs 358-375 of the NGN Decision where ComReg concluded that a period of 3 years (rather than 2 years) would be appropriate and proportionate in order to provide sufficient time for SPs to migrate to a new number range, in line with the natural replacement of relevant items.

A7.75 Readers are also referred to paragraphs 6.13 and 6.122 of the 2018 NGN Consultation and paragraphs 148 to 151 of the NGN Decision for ComReg's assessment of responses received on the migration period.

A7.76 It was determined that a three year timeline was appropriate in the circumstances. ComReg is of the view that a three year period provides sufficient notice for SPs and operators to plan and implement the migration.

A7.77 ComReg agreed at paragraph 17 of the NGN Decision that it would engage with industry and SPs in planning the implementation of the final decision in order to accommodate any particular needs where practicable. There have been a series of NGN working group meetings held with industry since March 2019. ComReg also hosted an Information Event in October 2019.

ComReg's Response to Issue – Migration Issues

A7.78 While ComReg accepts that there may be issues that arise in successfully migrating SPs away from those number ranges that are to be withdrawn ComReg does not consider that any further measures need to be provided as part of this Decision. ComReg will continue to engage with industry.

[124] ComReg Document 17/70d

Issue raised – Harm arising due to timing of wholesale measures

A7.79 Colt stated in its response that regulatory forbearance does not contribute to the improvement of end-to-end connectivity which is the legal basis being used for intervention and that it distorts competition between larger operators and those with mostly inbound traffic.

A7.80 Colt state that ComReg acknowledges that short term harm is likely to arise if OOs levy a wholesale charge. They reference the DotEcon Report and the consideration that this would be a particular issue if WORs were increased such that TOs would not cover their costs.

A7.81 They state that the impact or degree of exposure depends on the size of the operator with business only small operators such as Colt with mostly inbound terminating traffic are most exposed to this harm and state that this is likely to prevent small operators from competing with larger ones.

A7.82 Colt propose that a measure similar to what has been proposed for 0818 be considered.

A7.83 Virgin Media commented that they do not consider the fact that these numbers will be withdrawn in two years as fair rationale for not introducing charges. As these numbers will be included in bundles and geo-linked with no corresponding charge at the wholesale level they could be making a loss for two years.

A7.84 Vodafone also commented that they consider that retail charges should not be changed in advance of a wholesale solution quoting the DotEcon Report 17/70a which raised the risk that OOs will compensate the reductions in retail revenue via higher wholesale charges which will in turn harm SPs.

ComReg's Issue Assessment – Harm arising due to timing of wholesale measures

A7.85 ComReg has proposed a set of retail measures that will be applied to 1850 and 1890 numbers, and its 'regulatory forbearance' is limited to its proposal not to impose additional wholesale measures. The reason that ComReg is not proposing additional wholesale measures for 1850 and 1890 numbers is that these numbers will be withdrawn by 1 January 2022, and indeed ComReg is seeking to encourage SPs to move away from the use of 1850 and 1890 numbers.

A7.86 However, Colt's description of potential short term harm that would be caused if WORs for 1850 and 1890 were increased to a level where TOs could not cover their cost of service provision is correct. This risk was explicitly set out in the DotEcon Report. It is also correct that smaller operators that terminate but do not originate traffic from 1850 and 1890 numbers would be most exposed. While recognising this short term harm, it is noted that these effects should encourage SPs and TOs to migrate to a more suitable alternative number range.

A7.87 The retail measures that ComReg is now implementing require the retail tariff for calls to 1850 and 1890 numbers to be no more than the tariff for a call to a geographic number. This measure came into force on 1 December 2019, and will address excessive charges to retail customers.

A7.88 The Consolidation Condition contained in the NGN will be implemented by 1 January 2022. SPs, OOs and TOs have all been provided with reasonable notice that the 1850 and 1890 ranges will be withdrawn, and have a reasonable length of time to migrate to alternative number ranges. In these circumstances, we would not consider it necessary to impose additional wholesale measures on 1850 and 1890 numbers.

ComReg's Response to Issue – Harm arising due to timing of wholesale measures

A7.89 Having considered the points raised by Respondents regarding migration issues and potential harm in two year period before the Shared Cost number ranges are withdrawn ComReg remains of the view that the appropriate course of action in relation to Shared Cost numbers is regulatory forbearance.

A7.90 In relation to points made by Virgin Media and Vodafone, while ComReg notes the concerns raised it is also of the view that if the WORs for 1850/1890 continue to be excessive or increase, SPs have the option to avoid these high Shared Cost WORs by moving to NGNs with lower retail charges (1800, 0818). In any event we would reiterate that any excessive WORs for these Shared Cost NGNs will only be temporary in nature as these NGN ranges are due to be withdrawn and in the interim will encourage SPs to migrate to either 1800 or 0818

Issue Raised – Proposed limited continuation of 1850 range

A7.91 BT and Vodafone commented on recent proposals by some national utilities to continue their 1850 numbers following general closure of the range in December 2021. BT consider that the remaining numbers should migrate towards the Freephone charging model.

ComReg's Issue Assessment – Proposed limited continuation of 1850 range

A7.92 ComReg notes Vodafone and BT's comments in relation to the potential extended use of a small number of national utility company 1850 emergency numbers beyond the end of 2021. The exceptional circumstances highlighted by these utilities is that these 1850 numbers are on signage on plant (poles, meters, etc.) that will not be replaced before general switch-off of the 1850 range. ComReg is currently engaging with the affected utility companies and with the Commission for Regulation of Utilities in relation to this matter, and will ultimately progress the matter with industry through the industry NGN Working Group.

ComReg's Response to Issue – Proposed limited continuation of 1850 range

A7.93 ComReg's position in relation to the unsuitability of 1850 numbers for emergency lines remains unchanged from that set out in ComReg document 18/106[125]. ComReg is therefore continuing to encourage utilities to migrate to 1800 Freephone numbers and promote these new numbers as soon as practically possible.

A7.4 Question 5 Responses – Price Control for 0818

A7.94 In Chapter 4 of the Consultation ComReg considered current and future charging arrangements for the 0818 number range along with the potential harm that the introduction of wholesale charges might create. Based on this ComReg reached the preliminary view that imposing a price control for 0818 was required. In the case where the WTR from a TO for 0818 termination is greater than the Regulated FTR for a Geographic call an OO is permitted to levy a WOR equal to the difference.

A7.95 ComReg asked the following question, Question 5, in the Consultation:

"Do you agree with ComReg's preliminary conclusion on wholesale charges for 0818 numbers?"

A7.96 ComReg received seven direct replies to the question:

Eircom	Vodafone	TMI	Colt	BT	Virgin Media	Three
✓	✓	✓	✓	✓	✓	✓

[125] Please refer to paragraphs 138 to 147 of ComReg Document 18/106.

A7.97 TMI and Colt agreed with the proposals. BT, Virgin Media, Three and Vodafone also agreed but noted some additional comments.

A7.98 Eircom did not agree with ComReg's proposals.Issues raised regarding 0818

A7.99 Issues were raised regarding

(a) Termination costs

(b) Inclusion of 0818 in call termination market

(c) Other issues

Issue raised – Termination costs

A7.100 Eircom in its response referred to Section 4.115 of the Consultation and ComReg's comment that "there is little evidence to suggest that the cost incurred by a TO in terminating a 0818 call are significantly different to the costs incurred when terminating a National Geographic call".

A7.101 Eircom disagrees with the use of the wholesale Primary FTR rate being applied to 0818 calls. They consider that such calls are not to geo-linked numbers therefore in many cases operators interconnect with Eircom at the tertiary network level for 0818 call terminations. Also service providers using 0818 numbers often migrate their office locations from one exchange area or region to another. Therefore Eircom suggest a premium cost should apply for 0818 call terminations based on a mixture of single and double tandem termination costs per minute. If this correction is applied to 0818 call terminations, Eircom stated that they consider that the regime proposed by ComReg can be sustained.

ComReg's Issue Assessment – Termination costs

A7.102 The routing factors within ComReg's FTR cost model, are the same for all terminating calls whether Primary, Tandem or Double Tandem, as the model assumes in the forward looking scenario that the number interrogation and routing analysis must occur in the IMS platform at the top of the network hierarchy for all call types. Eircom considered that the call termination costs linked to 0818 calls, exceed those cost incurred with Primary call termination, however as in the case of 076 call terminations and outlined in response to Q3, the processing of 0818 call terminations requires managing such calls at the tertiary network layer, for number interrogation and routing. Therefore the costs of 0818 call terminations can be treated in the same way as in the FTR LRIC cost model, which has assumed the need to process such calls at the tertiary layer. As a result the additional costs identified by Eircom are not relevant as the costs associated with the use of multiple network layers are already incorporated into the FTR LRIC rate calculated within the FTR cost model.

ComReg's Response to Issue – Termination costs

A7.103 ComReg is of the view that no corrections are required to the calculation of termination costs to account for 0818 call termination.

Issue raised – Inclusion of 0818 in call termination market

A7.104 Three stated that it agrees with the proposal as an interim measure only. They refer to sections 4.98 and 4.99 of the Consultation and comment that the statements around SPs receiving calls on 0818 having greater awareness around wholesale termination rates and choosing TOs on that basis are incorrect.

A7.105 Three comments that as 0818 calls will be geo-linked they should be included in the call termination market ahead of 1 December 2019.

ComReg's Issue Assessment – Inclusion of 0818 in call termination market

A7.106 In the Consultation ComReg acknowledged that a possible outcome of the Geo-linking Condition is that the competitive characteristics of the 0818 number range may more closely resemble those of Geographic Numbers and 076 numbers. ComReg noted that it intended to consult on whether fixed voice call termination of calls to 0818 numbers fall within the definition of the Relevant FVCT Markets in advance of the effective date of the Geo-linking Condition of 1 December 2019. We await the outcome of this Market Review which is expected in Q1 2020.

ComReg's Response to Issue – Inclusion of 0818 in call termination market

A7.107 ComReg awaits the outcome of the Market Review. The measure being imposed under this Decision will remain in place regardless of the outcome of the new market review. In the event that a future consultation concludes that FVCT for calls to 0818 numbers does fall within the definition of the Relevant FVCT Markets, a Regulated FTR will be imposed in respect of these types of calls. As a result the charge flow for 0818 will then resemble that of a Geographic call and be subject to the Regulated FTR. The potential for an excessive termination rate is eliminated as there will be no difference between the 0818 WTR and the Regulated FTR.

A7.108 In the event that a consultation concludes that calls to 0818 numbers do not fall within the definition of the Relevant FVCT Market, no cost based WTR will be imposed. The measure being imposed under this Decision will remain in place.

Issue Raised: Other Issues

A7.109 BT, while in agreement with ComReg's preliminary view i.e. a price control which requires operators not to impose a WOR or impose a limited WOR would be a suitable remedy, noted that the scenario is exposed to the actions of unregulated transit players.

A7.110 Virgin Media queried the changes to the direction of the transit charge flows.

A7.111 Vodafone, while in agreement, highlighted difficulties in setting up. They stated that the proposed limit on WORs provides no mechanism for operators to recover the expense of setting up distinct charging for each TO and maintaining different charging tables for each interconnected operator.

A7.112 Eircom commented that they agree that the calling party operator should be charged for the transit service where they do not interconnect directly with the network hosting the 0818 service,

ComReg Issue Assessment – Other Issues

A7.113 With regard to BT's comment on transit ComReg would note that OOs and TOs can interconnect directly if they wish to avoid transit costs. Please refer to Question 1 & Question 2 assessment above for a detailed summary of transit issues.

A7.114 In response to Vodafone's comments ComReg notes that many OOs will also be TOs. By each OO setting their own 0818 WTR to the Regulated FTR others will reciprocate. It is likely that the termination charging trend will move towards a 0818 WTR at or below the Regulated FTR. The number of TOs not charging a 0818 WTR at or below the Regulated FTR will be limited. Consequently an OO will need 0818 WOR rate tables only in exceptional cases.

ComReg's Response to Issue – Other Issues

A7.115 While noting the views of operators ComReg does not consider it necessary to make any amendments to the proposal for 0818 and will proceed with the price control outlined in the Consultation and in Section 4.5 of this document.

A7.5 Question 6 Responses – Price Control for Freephone

A7.116 In Chapter 4 of the Consultation ComReg reached the preliminary conclusion that the appropriate form of price control for Freephone numbers is cost orientation based on detailed cost modelling.

A7.117 ComReg asked the following question, Question 6, in the Consultation:

"Do you agree with ComReg's preliminary conclusion on wholesale charges for calls to 1800 numbers?"

A7.118 ComReg received eight direct replies to the question:

Eircom	Vodafone	TMI	Colt	BT	Virgin Media	Three	Verizon
✓	✓	✓	✓	✓	✓	✓	✓

A7.119 Five operators – BT, Verizon, Eircom, Vodafone, Colt, largely agreed with the proposals but provided additional comments to be considered.

A7.120 Three and Virgin Media did not agree with the proposals.

A7.121 TMI stated that they strongly disagree with the proposals for 1800 and gave a number of reasons

Issues raised regarding Freephone (1800)

A7.122 Issues were raised regarding

(a) Method of proposed intervention

(b) Lack of glide path

(c) Potential for increases to charges for 1850/1890

(d) Transit issues

(e) Any other issues

Issue raised – Method of proposed intervention

A7.123 There were comments from several Respondents on ComReg's method of proposed intervention. There was no specific question posed by ComReg in the Consultation however in order to fully address all comments made in this regard, we have included a section in Annex 7, paragraph A7.321 and used a similar approach as that used for each of the Questions and responses received.

Issue Raised – Lack of glide path

A7.124 TMI commented on the lack of a glide path and stated that ComReg should consider applying a glide path in respect of smaller originating operators adversely impacted by ComReg's proposed obligations. TMI highlighted the particular difficulties with smaller operators absorbing the financial impacts of the retail and wholesale proposals in addition to the effects of other recent developments – i.e. MTR regulation, roaming regulation, intra-EU voice and SMS regulation. While TMI does not agree with ComReg's proposals for the Freephone number range they state that in the event ComReg proceeds as planned then mitigation in the form of a glide path would be warranted.

A7.125 Virgin Media also raised the issue of a glide path in their response to Question 8 below.

ComReg's Issue Assessment – Lack of glide path

A7.126 ComReg considered the issue of a glide path during the Consultation. This was also considered in the DotEcon Report. A number of factors were considered including the magnitude of the change required, scale of impact on operators' profitability, the practicalities of changing and the level of harm occurring due to existing rates. DotEcon have also addressed the issues raised regarding the lack of a glide path in Annex B of their final report.[126] DotEcon advised that it was not proportionate to continue to allow rates to remain significantly above the modelled costs for an extended period. They noted that as there is no need for the revision of contracts and as the assessment relates to Freephone there is no need for any retail price adjustments.

A7.127 DotEcon acknowledge that, as Respondents point out, the rates for mobile WORs need to reduce more than fixed WORs, however this is a simple consequence of the existing mobile WORs having been set being particularly high.

A7.128 ComReg has considered the issue of a glide path in detail and remains of the view that it is not appropriate for a number of reasons.

A7.129 The NGN Decision and preceding documents[127] outlined the need for a Freephone number range in order to ensure effective functioning of the NGN platform. Given that the called party pays the cost of the call, Freephone provides a significant surplus to all consumers in accessing services over NGNs which would be delayed if ComReg were to consider a glide path as proposed.

Reduced 1800 Availability

A7.130 As previously set out in the 2018 NGN Consultation ComReg is of the view that current, high WORs restrict end-users access to services provided over NGNs.

A7.131 ComReg has previously demonstrated[128] that such charges have resulted in many SPs using the "Shared Cost" or "CPP" NGN ranges instead of Freephone NGN ranges.

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[126] ComReg Document No: 20/04a – Final DotEcon Report "A price control for regulation of wholesale charges for non-geographic numbers"

[127] ComReg Document 17/70, Section 5.5.1

[128] See Chapter 3 of the 2018 NGN Consultation (ComReg Document 18/65)

A7.132 If ComReg were to implement a glide path the effect would be to levy wholesale rates above the rates proposed in the Consultation. ComReg is of the view that the evidence[129] gathered by ComReg continues to support the view that distorted wholesale pricing could lead to SPs not providing services over NGNs to the detriment of consumers and SPs.

Delayed SP Migration

A7.133 The Geo-linking Condition and NGN Consolidation from five numbers to two are important measures to improve transparency and reduce customer confusion around NGNs. In order to maximise consumer benefits the migration of SPs from decommissioned NGNs or new users to Freephone is a necessary and important aspect of ensuring effective functioning of the NGN platform.

A7.134 ComReg is conscious that SPs who wish to migrate from an existing NGN (e.g. 1890) to an alternative (e.g. 1800) are likely to do so only once, given the costs of migrating[130] a second time (after the glide path would have ended) and a decision to migrate would likely be made after the new wholesale regime as imposed by ComReg has been implemented. If wholesale charges remain excessive, as would be the case under a glide path proposal, SPs would be unlikely to wait until the glide path was finished and would likely migrate to Geographic numbers. This would not be in the interest of consumers who may be less able to access such services over other platforms.

A7.135 In order to maximise the consumer benefit arising from ComReg's regulatory approach it is important that the wholesale remedies begin in early 2020 providing SPs with clarity on the migration options available to them before the consolidation of NGNs from five to two takes place

Regulatory Certainty

A7.136 ComReg has previously signalled its intention to introduce a concurrent wholesale regime to compliment the retail measures set out in the NGN Decision. This is necessary because the harm to the NGN platform arises at both retail and wholesale levels of the NGN platform. In that regard, the NGN Decision was made in anticipation of the wholesale measures being implemented at the same time.

129 Please refer to Section 3.4 for details of Information sources relied upon.

130 See Paragraph 358-375 of the NGN Decision (ComReg Document 18/106)

A7.137 ComReg notes that the proposed wholesale measures are due to be implemented in May 2020 and while not strictly concurrent, it is in line with ComReg's previously stated view that it *"would be preferable for any wholesale intervention to come into effect on or before the implementation date of the geo-linking option noting that while geo-linking may be introduced prior to wholesale measures, such a scenario would only arise where wholesale measures were delayed beyond a year but would be implemented shortly thereafter."* [131]

A7.138 ComReg notes that this approach across multiple consultations has provided a measure of certainty to interested parties such as SPs, allowing them to plan for future migration to alternative number ranges and giving the necessary incentives to make efficient investments in their preferred platform. Regulatory certainty is particularly important in this instance as timely migration to 1800 (Freephone) and 0818 is necessary to maximise consumer welfare and ensure the effective functioning of the NGN platform as described above.

A7.139 SPs are currently planning migration to alternative number ranges and have highlighted the need for information and clarity in terms of the likely costs of using 1800 NGNs. SPs are unlikely to migrate to Freephone if the costs of providing those services remains high (as would be the case over the duration of a glide-path).

A7.140 Certain SPs may have already migrated to Freephone or alternatives in anticipation of reduced wholesale charges around December 2019. This would have imposed undue implementation costs if wholesale charges did not reduce in line with ComReg's intention.

A7.141 Operators and ComReg cannot usefully promote the new NGN platform and benefits of same to SPs if the Freephone range continues to have high wholesale charges.

A7.142 TMI referred to previous incidences of ComReg using a glide path. ComReg would note the following:

[131] Please refer to paragraph 3.52 of the 2018 NGN Consultation

A7.143 First, the harm to the NGN platform arises because of observable problems at both retail and wholesale levels of the NGN platform. ComReg's regulatory approach has been to consider the wholesale implications in forming its retail remedies and previously stipulated that both measures would be introduced as close as possible to one another in order to provide for the effective functioning of the entire platform. It would be remiss of ComReg to unwind its previously stated intention in that regard. The two-sided nature of the NGN platform is such that if ComReg was to implement its proposed remedies at the retail level, absent the proposed wholesale remedies following shortly after, this could extend the harm at the wholesale level to such an extent that utilisation of NGNs by SPs could be reduced (as discussed above). This is not comparable to the cases referred to by TMI where the regulatory proposals were only proposed at one side of the market only.

A7.144 Second, each of the glide path examples referred to by TMI involved an important revenue impact across all operators and a glide-path was considered appropriate in order to reduce disruption and instability which could be caused by sudden significant reductions in rates across the entire market. For example:

(a) Total MTR revenues accounted for c7% of total mobile revenues in Q1 2016[132][133].

(b) In contrast, wholesale NGN revenues for fixed and mobile operators (i.e. revenue generated from SPs) accounted for less than 1%[134] of total revenues in the telephony market.

A7.145 It would not be appropriate to delay the introduction of a new wholesale regime to the benefit of all consumers because of TMI's apparent reliance on NGN revenue when compared to other operators. Such a scenario could be perceived as effective subsidisation of TMI by consumers. ComReg would not be acting in accordance with its statutory remit if it considered that consumers were being denied benefits in the use of NGNs yet failed to intervene, in a lawful and proportionate manner.

[132] ComReg Document 19/48a, p27

[133] In addition a glide-path in relation to MTRs was appropriate in order to mitigate or lessen the risk of any instability in the context of the impending implementation of Eurorate MTRs,

[134] Source: ComReg Quarterly Reports and DotEcon Revenue Allocation Model

A7.146 In relation to the selective barring example provide by TMI, ComReg notes that a glide-path was not provided. Rather, the time period between the initial consultation and publishing of Decision was approximately three years in order to provide for detailed information gathering and assessment. Further, the implementation period concerned whether the time required to implement those measures was reasonable. Such considerations have already been provided for in the NGN Decision (i.e. one year period following retail Decision).

A7.147 Considering the level of harm being raised by the current price levels the view remains that it would not be proportionate to allow rates to remain significantly above the modelled cost. For 1800 Freephone numbers it has been shown that there is real and observed damage due to the existing WORs, and that price levels should fall to regulated rates as soon as possible to ensure that the harm arising is mitigated. There is a need to ensure that end-to-end connectivity is not compromised.

A7.148 As outlined by TMI in their response ComReg, under Regulation 6(3) of the Access Regulations and 16(2) of the Framework Regulations, must apply objective, transparent, non-discriminatory and proportionate regulatory principles in pursuit of its objectives. With this in mind it would not be in line with these principles to subject some operators to a certain level of regulation and not others.

A7.149 ComReg is proposing that Freephone origination should be subject to a price control in the form of cost orientation. ComReg has not received any evidence from smaller operators which demonstrates that the cost of origination faced by MVNOs is different to that calculated in the MVCO Decision Model. ComReg also considers that the chosen LRAIC+ cost standard generates a level of prices that would be expected in a competitive market.

A7.150 In relation to the position of MVNOs more generally, ComReg in Document 19/59 requested views and supporting material from interested parties on a number of matters related to the effective operation of MVNOs. ComReg will consider any such views in its response to ComReg Document 19/59

ComReg’s Response to Issue – Lack of glide path

A7.151 While ComReg appreciates the views of Respondents and the short term financial impact that this proposal may have on operators, and while ComReg values the benefits that MVNOs and other smaller operators bring to the market in terms of competition and innovation, ComReg is of the view that the current harm resulting from high WORs is sufficient to require immediate price reductions and in the circumstances, ComReg remains of the view that a glide path is not appropriate.

Issue raised – Potential for increases to charges for 1850/1890

A7.152 Verizon noted the potential for a "waterbed effect" where providers currently charging high WORs seek to offset losses by raising charges for 1850/1890 in the next two years before they are withdrawn.

ComReg's Issue Assessment – Potential for increases to charges for 1850/1890

A7.153 ComReg considered the potential for increases in 1890 and 1850 WORs in the Consultation and again at Section A2.5 of Annex 2 of this Decision. That section describes that in future, WORs for 1890 may increase (the same is true for 1850). ComReg remains of the view that while the potential for increased 1890 or 1850 WORs exists such increases would be either be countered by an increased WTR or, passed through to the SP by the TO as an increased retail charge. In the event that the increase is passed through, this higher cost for SPs will encourage SPs to migrate from 1890 and 1850 ranges to either 1800 or 0818 that will have charges that are lower in comparison.

ComReg's Response to Issue – Potential for increases to charges for 1850/1890

A7.154 ComReg is of the view that while there is potential for short term price increases ahead of planned withdrawal of 1850/1890 this does not affect ComReg's view on the appropriate measures for 1800. ComReg note that SPs and TOs can limit any possible adverse effects by migrating to a more suitable alternative number range.

Issue raised – Transit Issues

A7.155 BT stated concerns over ComReg describing a two party system rather than three i.e. Transit. They state that "We therefore trust that ComReg will apply discretion in any dispute where the transit operator imposes unreasonable pricing and both the originating and terminating operators act independently to counter balance the charges". ComReg has provided a detailed response to transit related issues in response to submission received in relation to Questions 1 and 2. Please refer to paragraph A7.24 above.

A7.156 Vodafone also commented on the issue of transit and referred to ComReg applying discretion in any future disputes.

ComReg's Issue Assessment – Transit Issues

A7.157 Please refer to paragraphs A7.24 to A7.42

ComReg's Response to Issue – Transit Issues

A7.158 Please refer to paragraph A7.43

Issue Raised – Other Issues Raised

A7.159 Virgin Media comments that the proposal does not address the issues raised by the majority of operators during the geo-linking consultation process, such as many operators operating below cost in providing NGN services from December 2019. They comment that the current proposal was an unexpected addition to the wholesale consultation.

A7.160 Virgin Media also comments that the Consultation does not refer to the fact that some operators that host 1800 numbers may have a range of additional revenue streams associated with hosting 1800 numbers such as line rental which some operators may seek to increase to compensate for call revenue losses.

A7.161 TMI commented that ComReg's analysis is out of date as it relies on data, amongst other matters, from 2017.

A7.162 TMI also comments that there is no guarantee that TOs and SPs will ultimately pass the benefit of the obligations on to consumer.

A7.163 Three stated that they disagree with the use of incremental pricing. They refer to Section 4.126 of the Consultation where ComReg refers to an assumption that there is unlikely to be a significant difference in the costs of terminating a 1800 call versus a National Geographic call. They stated that they agreed with this point, that it highlights a competitive distortion that is created by imposing a wholesale origination fee for calls to 1800 that is below the retail displaced revenue.

A7.164 Colt raised some concerns: unjustified wholesale charges and discriminatory practices are likely to occur, imposing a cap on the per minute rate might lead OOs to increase their one off/recurring charges, and price-cap regulation gives OOs opportunity to apply differentiated origination charges to different operators which ultimately limits ability of small operators to compete.

A7.165 Colt suggests: ensure one-off charges are fair and cost oriented, impose specific WOR rather than a cap or include specific non-discrimination obligations, and ensure transit charges are fair and cost oriented.

ComReg's Issue Assessment – Other Issues raised

A7.166 Regarding Virgin Media's point on operating below cost on NGN services, ComReg does not accept that Geo-linking the charges for some calls to NGNs from 1 December 2019 will result in operators operating below cost. For example, the inclusion of calls to NGNs in the retail bundles offered to customers might mean a greater proportion of the customer's calls to Geographic numbers are out of bundle, i.e. if the number of minutes in the bundles is unchanged then any calls to non-geo numbers that are included in the bundle will offset the number of in-bundle calls to geo- numbers that can be made.

A7.167 Regarding Virgin Media's comment that the proposal around 1800 was an unexpected addition to the consultation ComReg does not agree.

A7.168 In the 2018 NGN Consultation ComReg outlined in Chapter 3 the reasoning behind wholesale intervention and the possible approaches considered. At paragraph 3.54 of the 2018 NGN Consultation ComReg stated that *"SPs should only be paying to cover the costs of the call that are not covered by the retail charge to the caller (i.e. cover the origination costs of "1800" Freephone and no charge for receiving a "0818" geo-linked call)"*.

A7.169 ComReg stated at paragraph 3.75 of the same document that it was of the view that a price control would be effective and would be likely to achieve the objective of addressing the existing high WORs *"(particularly for 1800)"*. From the above, ComReg is of the view that the intention to implement a price control for 1800 was signalled well in advance of the current Consultation and Decision and cannot credibly be viewed as *"an unexpected addition"* to the process.

A7.170 Regarding Three's comment, ComReg considers that by setting the charge for 1800 with reference to the LRAIC+ for call origination plus an allowance for the recovery of relevant retail costs, it is setting the charge at a level that is equivalent to the displaced revenue that the OO would receive for a call to a geographic number. This is on the basis that the revenues from originating calls to 1800 and Geographic numbers allow the OO to recover the network and retail costs relevant to both call types, including an appropriate contribution to the recovery of common costs.

ComReg's Response to Issue – Other Issues raised

A7.171 While noting the views of Respondents ComReg does not propose to amend the proposal for 1800 in any way and intends to proceed on the basis of cost orientation as outlined in the Consultation and Section 4.6 of this Decision document.

A7.6 Question 7 Responses – Modelling principles for Freephone

A7.172 ComReg considered the costing approach that should be adopted to determine the costs relevant to a price control for call origination on fixed and mobile networks to Freephone NGNs. Based on consideration of the key parameters identified in an Annex to the DotEcon Report, ComReg made recommendations which were outlined in Section 4.10 of the Consultation and are repeated in Section 4.7 of this document.

A7.173 ComReg asked the following question, Question 7, in the Consultation:

"Do you agree with the costing principles proposed for modelling the costs to inform the wholesale charges for call origination to Freephone NGNs, as outlined in the DotEcon Report and summarised in Section 4.10 of this Consultation?"

A7.174 ComReg received seven direct replies to the question:

Eircom	Vodafone	TMI	Colt	BT	Virgin Media	Three
✓	✓	✓	✓	✓	✓	✓

A7.175 The majority of Respondents disagreed with some elements of the costing approach proposed. Eircom agreed.

A7.176 Virgin Media commented that they didn't agree with ComReg's overall proposal for 1800 because they do not believe the impact on different operators has been assessed fully. They stated that they accept LRAIC+ would be the most relevant in the circumstances. TMI also disagreed with overall proposal and as a result provided no specific comment in response to this question.

Issues raised regarding Freephone (1800)

A7.177 Issues were raised regarding

(a) Modelling approach/parameters

(b) Consideration of new technologies

Issue raised – Modelling approach/parameters

A7.178 Colt agreed with the use of bottom-up methodology and having an allowance for common costs not recovered in the pure LRIC for call termination. However they disagreed with the use of LRAIC+ as opposed to pure LRIC.

A7.179 Colt stated that it does not expect any significant distortion to occur from applying pure LRIC stating that for SPs, regardless of chosen cost standard the per minute cost of a service provided through Freephone will always be greater than the per minute costs of a service provided through Geographic numbers. Colt were of the view that applying any other model other than pure LRIC will expose small operators to serious competitive harm.

A7.180 Colt disagreed with the inclusion of retail costs in WOR as large operators will internalise the cost but operators like Colt will suffer higher charges.

A7.181 Three stated that *"the use of incremental pricing is incorrect"*, that it is incorrect to take the cost standard that applies to incremental traffic and SMP operators and simply modify it for NGN origination.

A7.182 They commented that every 1800 call made from a mobile displaces the retail revenue that would have been earned if the call had been made to a Geographic number and that an OO should be allowed to recover this "displaced" revenue as a WOR. They commented that setting a WOR below the displaced revenue rate forces an OO to carry a call at a rate below that which applies in the competitive retail market and risk creating inefficient origination.

ComReg's Issue Assessment – Modelling approach/parameters

A7.183 Colt appeared to be considering the issue only from the perspective of the SP (i.e. the SP pays nothing to receive a call to a Geographic number but is charged to receive a 1800 call) but ComReg is considering cash flows with reference to the end-to-end call. Colt highlights *"the similarities of the market dynamics between call termination for CPP numbers, and call origination for RPP numbers; except that, in the former, the TO holds the bottleneck control, while in the latter, it is the OO that has this power"*. However ComReg is of the view that there is a potential for some substitution between calls to 1800 and calls to Geographic numbers as is evidenced by the fact that, for cost modelling purposes, call origination to 1800 and other NGNs has been included in the same increment as call origination to Geographic numbers.

A7.184 ComReg's position is that a regulatory distortion is avoided if the return that the originating party realises for a call to a Geographic number is equivalent to the return it receives for a call to a 1800 number, notwithstanding the fact that the charge for the first is levied on the calling party while the charge for the second is levied on the receiving party.

A7.185 As the calls to NGNs are deemed to be competitive, the CO to Geographic numbers charge is expected to be oriented towards cost with the costs comprising the charge for network call origination (assumed to be LRAIC+) and an allowance for the recovery of the relevant retail costs. However, a Pure LRIC will only be sufficient to cover the network operator's incremental cost in originating the call but would make no contribution to common cost recovery or the retail costs of the originating party.

A7.186 Consequently adopting Pure LRIC would require that the common costs not recovered from a cost oriented charge to 1800 calls would have to be recovered from other services (excluding termination cost which is set at Pure LRIC) and this would increase the contribution to common and retail cost recovery required from other services including CO to Geographic numbers. It is ComReg's view that this would make 1800 calls less attractive to originating parties and the choice of LRAIC+ is intended to minimise the differences between the origination charges for calls to Geographic and Non-geographic numbers, including 1800.

A7.187 Separately, in relation to the allowance in the call origination tariffs for the inclusion of retail costs, only those retail costs that were considered relevant to the Freephone service were included, as outlined in Section 5.2.7 of the Consultation and repeated at paragraphs 5.70 - 5.71 above. Marketing and sales costs are excluded from the origination rates for 1800 calls.

A7.188 This narrow interpretation of relevant retail costs, is intended to ensure that level of retail costs that are recovered from calls originated to 1800 numbers is sufficient to enable revenues from 1880 calls to make an appropriate contribution to the recovery of the retail costs incurred by the originating retail provider while protecting the receiving service provider from excessive charges.

A7.189 Regarding Three's comments on incremental pricing and displaced retail revenue ComReg would note the following. The incremental approach that is used to derive charges for calls to 1800 is not the same as the incremental approach that ComReg used to set charge for mobile voice call termination (MVCT) on the network of a mobile operator with SMP. MVCT charges are set on a Pure LRIC basis that limit cost recovery to the additional network costs that are directly caused by the MVCT calls.

A7.190 However, as described in Section E.6.5 of the AM Annex, when modelling the costs of call origination, the MVCO Decision Model does not assume that mobile voice origination to NGNs by itself is incremental: it is a larger increment that always combines mobile voice origination to Geographic and Non-geographic numbers (and all other domestic off-net origination). This ensures that origination charges are based on a LRAIC+ (large average increment) approach, where the incremental costs of all mobile traffic are allocated across all mobile traffic services (including calls to NGNs), with a mark-up for common costs; that is, all traffic is treated as incremental, not just mobile-originated voice to NGNs, and a contribution from all common costs is also added.

A7.191 Finally, in addition to the network and common costs, the charges for call origination to 1800 numbers also allow for the recovery of relevant retail costs (Section E2.2 of AM Annex: "We have also calculated a “LRAIC++” for mobile voice origination, including a mark-up for the costs", page 3).

A7.192 Consequently, the incremental costing approach adopted in the costing of call origination to 1800 numbers is intended to ensure that the basis for determining the charges for call origination to 1800 numbers and Geographic numbers are equivalent, that is, the 1800 rate for call origination is cost oriented on the basis that this is equivalent to the level of charges that would be expected to apply in the competitive retail market.

ComReg’s Response to Issue – Modelling approach/parameters

A7.193 ComReg considers that it has addressed all points raised by Respondents and considers that the principles outlined in the Consultation to inform the modelling of wholesale origination to Freephone are correct.

Issue raised – Consideration of new technologies

A7.194 Vodafone and BT both referred to Section 4.148 of the consultation where ComReg commented that “*the technology evolution is not as marked in the fixed core network as it has been in the mobile RANs*”. Vodafone observed that this section does not appear to properly and fully consider matters concerning the diverse solutions deployed and available in the fixed market. Vodafone submits that ComReg should reconsider this section taking into account new technologies.BT stated that they considered the comment to be incorrect. They highlighted that core and access networks are different so ComReg is not comparing like with like. They also highlighted that in the fixed world the roll out of access is also rapidly changing with fibre broadband creating huge changes and costs for all operators.

ComReg's Issue Assessment – Consideration of new technologies

A7.195 BT argue that comparing the mobile RAN and fixed core network is not a like for like comparison however we would highlight that ComReg is making the comparison in the context of the depreciation approaches used, i.e., a tilted annuity in the fixed model and economic depreciation in the mobile model. Consequently, ComReg noted that "Economic depreciation is required when both the costs of the assets and the demand supported by those assets are fluctuating, as is the case with the RAN assets in the mobile networks" in recognition of the fact that the RAN represents the most significant proportion of the costs being modelled in the mobile model, whereas the costs in the Core NGN Model are limited to the fixed core network assets.

A7.196 The draft FVCO cost model detailed in Chapter 6 of the Consultation clearly outlines that the bottom up cost model is based on the most recent technology currently used by network operators for fixed voice call origination. In particular it documents that the cost model has evolved from the 2018 NGN Core Model, and from the FTR Model, applied in the Termination Markets Decisions. Paragraph 6.22 of the Consultation, clearly outlines that the cost model *"uses internet protocol ('IP') switching equipment in the switching layer and the transmission layer assumes the deployment of fibre cables...between core nodes"*. The cost model also includes options for WDM technology and voice interconnection facilities which can either be based on TDM, SIP or SIP IP. Further in paragraphs 6.24 to 6.26 of ComReg document 19/46 that the *"... Draft FVCO cost model reflects the use of IMS IP based network, with facilities such as Media Gateways which can be leveraged to interconnect via TDM or SIP."* In this context ComReg's view is that the model reflects recent evolution in fixed network technology.

ComReg's Response to Issue – Consideration of new technologies

A7.197 As outlined above ComReg is of the view that the models accurately reflect evolution in technologies insofar as is practicable and ComReg does not propose to make any amendments to the models at this time.

A7.7 Question 8 Responses – MVCO Modelling

A7.198 In Chapter 5 of the Consultation ComReg reached the preliminary view that in order to maximise consistency with the cost analysis underpinning the calculation of MVCT charges, the MTR Model should be updated and amended to derive the costs oriented charges to apply to Mobile Voice Call Origination to NGNs. The MTR Model was updated to enable it to calculate the relevant LRAIC+ charges in the Draft MVCO Model.

A7.199 ComReg asked the following question, Question 8, in the Consultation:

"Do you agree with ComReg's preliminary view that the Draft MVCO Model is appropriate for determining a LRAIC+ for Mobile Voice Call Origination to a Freephone NGN?"

A7.200 ComReg received five direct replies to the question:

Eircom	Vodafone	TMI	Virgin Media	Three
✓	✓	✓	✓	✓

A7.201 Eircom agreed with the proposal. Vodafone also agreed but provided a comment on volumes.

A7.202 TMI provided no specific comment on the basis that they do not agree with overall proposal. Three referred to their response to Question 7 which has been addressed above.

A7.203 Virgin Media do not agree and provided some comments which are addressed below.

Issues raised regarding Draft MVCO Model

A7.204 Issues were raised regarding

(c) Additional Costs

(d) Impact on operators/lack of glide path

Issue raised – Additional Costs

A7.205 While Vodafone accepts that the Draft MVCO Model is appropriate they contend that the model assumes large call volumes and state that there are additional costs-per-call for low volume call types such as NGNs.

ComReg's Issue Assessment – Additional Costs

A7.206 While Vodafone commented that there were additional costs for low volume call types (such as call origination to NGNs) they did not provide any further detail or evidence in support of this.

A7.207 The statutory issued to mobile providers in October 2018 in which Respondents were asked to provide evidence of costs that were either directly or indirectly attributable to NGNs. All information that was provided was analysed and used, where appropriate, to derive the cost inputs regarding retail costs assumed in the MVCO model.

ComReg's Response to Issue – Additional Costs

A7.208 As ComReg has not received any information in supporting the claim that there is additional costs for low volume call types such as NGNs we do not propose to amend the approach currently being used in the MVCO Model.

Issue raised – Impact on operators/lack of glide path

A7.209 Virgin Media commented that no account has been taken of the impact on operators of the proposals, particularly MNOs. They state that the ability of operators *to "take the hit"* in Year 1 is questionable in light of other recent decisions – MTRs, roaming charges and intra EU tariffs. They note that the proposals were made in May 2019 after internal budgets for the year ahead have already been set. This creates regulatory uncertainty.

A7.210 Virgin Media do not agree with not having a glide path. They refer to DotEcon's recommendation not to have a glide path and state that there is no supporting evidence as to why end-to-end connectivity would be compromised.

ComReg's Issue Assessment – Impact on operators/lack of glide path

A7.211 ComReg has commented on the issue of a glide path at Question 6 above, paragraphs A7.124 to A7.151.

A7.212 On the issue of end-to-end connectivity we refer to paragraphs 2.12 and 2.13 of the Consultation. In the Consultation ComReg stated its position as follows:

"If ComReg does not intervene to address this problem, Originating Operators ('OOs') could continue to exploit their bottleneck control and set excessive WORs for Terminating Operators ('TOs') which may be passed onto SPs and ultimately affect consumers. This would lead to price distortions that might affect a SP's choice between the relevant NGNs and even between the relevant NGNs and Geographic numbers. Ultimately, the only option available to SPs is to move away from the Relevant NGNs due to the excessive WORs. This means that the OO's bottleneck control ultimately impacts end-to-end connectivity and access to numbers for end-users".

"The connectivity failure is particularly evident for Freephone NGNs. Freephone NGNs allow SPs to reach out to callers by covering the costs of the call and enabling callers to access services that are delivered over NGNs. If excessive or high WORs force SPs to switch and deliver these services in an entirely different way (for example over Geographic numbers or possibly a web-based option) this additional connectivity via the Freephone NGN is compromised and ultimately end-users will lose out"

A7.213 With regard to Virgin Media's comment ComReg acknowledges that there have been several regulatory developments in recent years that has impacted on the profitability of operators. ComReg is of the view that this fact in itself is not sufficient to justify the continuation of wholesale charging practices that are largely and significantly in excess of the actual costs of providing a service.

A7.214 Virgin Media also commented on the timing of the proposal, given that financial budgets would have already been approved by May 2019. ComReg's view on this has been outlined at paragraphs A7.166 to A7.169.

A7.215 ComReg remains of the view that the measures proposed are justified.

ComReg's Response to Issue – Impact on operators/lack of glide path

A7.216 ComReg remains of the view that the proposed measures are justified.

A7.8 Question 9 – Additional Mark-up to LRAIC+

A7.217 In Chapter 5 of the Consultation ComReg outlined its preliminary view that the cost oriented LRAIC+ charges for call origination to NGNs should include a contribution to the recovery of common costs not recovered in the Pure LRIC for Mobile Voice Call Termination.

A7.218 ComReg asked the following question, Question 9, in the Consultation:

"Do you agree with the approach taken to include an additional mark-up to the LRAIC+ for MVCO to allow for the recovery of a proportion of the common costs not recovered in the Pure LRIC for Mobile Voice Call Termination?"

A7.219 ComReg received six direct replies to the question:

Eircom	Vodafone	TMI	BT	Virgin Media	Three
✓	✓	✓	✓	✓	✓

A7.220 TMI provided no specific comment on the basis that they do not agree with overall proposal.

A7.221 BT and Eircom agree with approach. Vodafone also agreed but provided additional comments.

A7.222 Virgin Media referred to responses given to Questions 6, 7 and 8 which we have already addressed.

A7.223 Three reiterated that its point on use of incremental pricing which has been addressed above. Without prejudice to this it noted that retail sales and customer care are not covered in the mark-up. ComReg would note that consideration as to what might be included in an additional mark-up is relevant to Question 10.

Issues raised regarding Additional mark-up to LRAIC+

A7.224 Issues were raised regarding Additional Costs

Issue raised – Additional Costs

A7.225 Vodafone in its submission agreed that there should be an additional mark-up to the LRAIC+ for MVCO to allow for the recovery of a proportion of the common costs not recovered in the pure LRIC for mobile voice call termination. However, it also stated that this does not cover all costs. There are, in addition, specific added costs for the administration of NGN numbers and for the administration and billing of interconnect for these calls. They state that these extra costs are in excess of the common costs covered in a LRAIC+ model.

A7.226 Three noted that retail sales and customer care are not covered within the mark-up.

ComReg’s Issue Assessment – Additional Costs

A7.227 While ComReg notes this comment, Vodafone in its response did not go into further detail and did not quantify the additional costs that it had referred to. Regarding the point raised by Three that retail sales and customer care costs are not covered within the mark-up, ComReg notes that the additional mark-up referred to under question 9 relates to the recovery of a proportion of the common costs not recovered in the Pure LRIC for Mobile Voice Call Termination and that these costs are only related to common network costs (such as parts of the radio coverage network) and network-related business overheads and therefore the issue of retail sales and customer care costs is not relevant in this case. This issue is discussed further in Section E.6.5 of the AM Annex.

ComReg’s Response to Issue – Additional Costs

A7.228 In the absence of any further information ComReg does not propose to amend the additional mark-up calculation at this time.

A7.9 Question 10 – Reasonable Retail Costs

A7.229 In Chapter 5 of the Consultation ComReg recommended that the cost oriented charges for NGN number ranges should allow for the recovery of retail costs that are considered relevant to calls to the different categories of NGNs. In the Consultation ComReg and its advisers listed a number of retail functions that might be considered relevant to call origination and, based on the limited information that was provided by operators in response to the 13D(1) Request estimated the level of retail costs that might be relevant to call origination to 1800 numbers.

A7.230 ComReg asked the following question, Question 10, in the Consultation:

“Do you agree with the approach taken to quantify the reasonable retail costs that are relevant to calls originating to Freephone numbers hosted on another operator’s network?”

A7.231 ComReg received six direct replies to the question:

Eircom	Vodafone	TMI	BT	Virgin Media	Three
✓	✓	✓	✓	✓	✓

A7.232 TMI provided no specific comment on the basis that they do not agree with overall proposal.

A7.233 BT agreed with approach. Vodafone agreed but provided additional comments.

A7.234 Virgin Media referred to responses given to Questions 6, 7 and 8 which we have already addressed.

A7.235 Three did not agree and stated that ComReg's proposed approach would create an incentive where it would be possible to have a mobile subscription and only use it to call Freephone numbers. This would clearly not recover an operator's retail costs.

A7.236 In relation to Three's argument that ComReg's proposed approach to quantify the reasonable retail costs that are relevant to calls originating to Freephone numbers hosted on another operator's network would create an incentive where it would be possible to have a mobile subscription and only use Freephone numbers, ComReg does not agree. Under ComReg's proposal the subscriber will still not be charged for making a call to 1800 number and consequently ComReg does not accept that the proposal would incentivise the subscriber to change behaviour. Also, the inclusion of an additional mark-up to recover the relevant retail costs as part of the cost oriented charge for 1800 numbers that is levied on the called party is intended to ensure the called party makes an appropriate contributing to the recovery of relevant retail costs of the originating party. Three seems to suggest that the mark-up is inadequate, i.e. *"clearly would not recover an operator's retail costs"* but provide no supporting information as to what the appropriate level of costs should be.

A7.237 Eircom, on the other hand, stated that it was of the view that there were no retail costs that should, on a reasonable basis, be recovered by the operator originating a call to a Freephone number.

Issues raised regarding Reasonable Retail Costs

A7.238 Issues were raised regarding

(e) Additional Costs

(f) Need for retail mark-up

Issue raised – Additional Costs

A7.239 Vodafone agreed that there were considerable additional costs associated with calls originating to Freephone numbers. Vodafone was of the view that ComReg was not capturing all of the cost – specifically the high costs that current proposals will impose on the network and IT network which are in addition to ongoing retail costs.

ComReg's Issue Assessment – Additional Costs

A7.240 While ComReg notes this comment, Vodafone in its response did not go into further detail or provide further information to support the position that ComReg is not capturing all of the cost. As mentioned at paragraph A7.207 above the 13D(1) Request issued in October 2018 specifically requested information on retail costs that might be relevant to 1800 numbers and Vodafone did not provide any information in relation to additional costs.

ComReg's Response to Issue – Additional Costs

A7.241 In the absence of any further information ComReg does not propose amending the calculation for retail costs that are relevant to calls originating to Freephone numbers hosted on another operator's network.

Issue raised – Need for retail mark-up

A7.242 As above, Eircom stated that it is of the view that there are no retail costs that should, on a reasonable basis, be recovered by the operator originating a call to a Freephone service. Eircom generally note that there is a strong argument that the marketing and product management costs relevant to the Freephone service are incurred by the TO rather than the OO. Eircom was also of the view that when a service that is free to the caller is introduced it does not generally replace traffic to the original services offered by the caller's network and the revenues from the original services are still available to fund the retail costs of those original services.

ComReg's Response to Issue – Need for retail mark-up

A7.243 Having considered the points raised by Respondents ComReg remains of the view that the approach used to quantify and include the reasonable retail costs is appropriate.

A7.10 Question 11 – FVCO Modelling

A7.244 In Chapter 6 of the Consultation ComReg reached the preliminary view that in order to maximise consistency with the cost analysis underpinning the calculation of FVCT charges, the FTR Model should be updated and amended to derive the costs oriented charges to apply to Fixed Voice Call Origination to NGNs. The FTR Model was updated to enable it to calculate the relevant LRAIC+ charges in the Draft FVCO Model.

A7.245 ComReg asked the following question, Question 11, in the Consultation:

“Do you agree with ComReg’s preliminary view that the Draft FVCO Cost Model is appropriate for determining a LRAIC+ cost for Fixed Voice Call Origination to a Freephone NGN?”

A7.246 ComReg received five direct replies to the question:

Eircom	Vodafone	BT	Virgin Media	Three
✓	✓	✓	✓	✓

A7.247 Eircom, BT and Virgin Media generally agreed with the proposal, with Virgin Media noting that the proposed rates are not materially different to those currently charged in the Deemed to be Regime.

A7.248 Vodafone in its submission agreed that there should be an additional mark-up for FVCO to allow for the recovery of a proportion of the common costs not recovered in the pure LRIC for mobile voice call termination but stated that this does not cover all costs. There are, in addition, specific added costs for the administration of NGN numbers and for the administration and billing of interconnect for these calls. Please refer to paragraph A7.227 for ComReg Assessment and Response.

A7.249 Three did not agree and refers to *“for the reasons already explained”*. ComReg has taken this to be a reference to points made in response to Question 6 where Three referred to the use of an *“incremental cost model”* and the “*competitive distortion that is created by imposing a wholesale origination fee for calls to 1800 that is below the retail displaced revenue”.* Please refer to Question 6 – specifically paragraphs A7.163 and A7.170.

ComReg's Response to Issue-Appropriate FVCO Cost Model

A7.250 In relation to Vodafone's assertion that an additional allowance should be included to recover the administration and billing costs for NGN numbers ComReg notes that the derived costs already include an allowance for administration and billing, for example, Intelligent Network costs are recovered across all call origination services including call origination to NGNs.

A7.251 There are no further issues identified here that have not already been addressed elsewhere.

A7.11 Question 12 – FVCO Modelling

A7.252 In Chapter 6 of the Consultation ComReg outlined its preliminary view that the cost oriented LRAIC+ charges for call origination to NGNs should include a contribution to the recovery of common costs not recovered in the Pure LRIC for Fixed Voice Call Origination.

A7.253 ComReg asked the following question, Question 12, in the Consultation:

"Do you agree with the approach taken to include an additional mark-up to the LRAIC+ for FVCO to allow for the recovery of a proportion of the common costs not recovered in the Pure LRIC for Fixed Voice Call Termination?"

A7.254 ComReg received five direct replies to the question:

Eircom	Vodafone	BT	Virgin Media	Three
✓	✓	✓	✓	✓

A7.255 BT, Virgin Media and Vodafone agreed with ComReg's proposal.

A7.256 Three did not agree and referred to *"the reasons already explained"*. ComReg has taken this to be a reference to points made in response to Question 6 where Three referred to the use of an *"incremental cost model"* and the *"competitive distortion that is created by imposing a wholesale origination fee for calls to 1800 that is below the retail displaced revenue"*. Please refer to Question 6 – specifically paragraphs A7.163 and A7.170.

A7.257 Eircom commented that a mark-up for recovering a proportion of common costs is already built in to LRAIC+, that the "+" indicates where LRAIC already recovers a contribution to the fixed network costs.

ComReg's Response to Issue-Additional Mark-Up in the FVCO Cost Model

A7.258 Regarding Eircom's point ComReg would note the following. While it is true that the LRAIC+ does allow for the recovery of common costs, the '+' in the LRAIC+ calculation is determined on the basis of common costs as a percentage of total costs including those costs relevant to call termination. However, the fact that call termination services are priced on a Pure LRIC basis means that an element of common costs is unrecovered (that element of common costs that would have been recovered from call termination services if call termination had calculated on a LRAIC+ basis). This gives rise to a "waterbed" effect that requires an additional mark-up to be applied to all non-termination services to ensure all costs are recovered across the service portfolio. Therefore ComReg's position is that the costs included in this mark-up are not already recovered.

A7.12 Question 13 – Reasonable Retail Costs

A7.259 In Chapter 4 of the Consultation ComReg recommended that the cost oriented charges for NGN number ranges should allow for the recovery of retail costs that are considered relevant to calls to the different categories of NGNs.

A7.260 ComReg asked the following question, Question 13, in the Consultation:

"Do you agree with the approach taken to quantify the reasonable retail costs that are relevant to calls originating to Freephone numbers hosted on another operator's network?"

A7.261 ComReg received four direct replies to the question:

Eircom	Vodafone	BT	Three
✓	✓	✓	✓

A7.262 BT agreed. Vodafone referred to their response to Q10 which indicates broad agreement but noting that there are additional costs to be taken into account. Please see A7.239 above.

A7.263 Three did not agree and referred to *"for the reasons already explained"*. ComReg has taken this to be a reference to points made in response to Question 6 where Three refers to the use of an *"incremental cost model"* and the *"competitive distortion that is created by imposing a wholesale origination fee for calls to 1800 that is below the retail displaced revenue"*. Please refer to Question 6 – specifically paragraph A7.170.

A7.264 Eircom referred to their response to Question 10 as outlined at A7.237 above.

ComReg's Response to Issue-Additional Retail Cost Mark-Up

A7.265 All issues raised in response to this question have already been addressed above.

A7.13 Question 14 – Comments on Regulatory Impact Assessment (RIA)

A7.266 In Chapter 7 of the Consultation ComReg presented its Regulatory Impact Assessment.

A7.267 ComReg asked the following question, Question 14, in the Consultation:

"Do you have any comments on the Regulatory Impact Assessment and in your opinion are there other factors which ComReg should consider in completing its Regulatory Impact Assessment? Please provide reasons in your response, clearly indicating the relevant paragraph numbers to which your comments refer, along with relevant factual evidence supporting your views."

A7.268 ComReg received four direct replies to the question:

Eircom	Virgin Media	BT	Three
✓	✓	✓	✓

A7.269

A7.270 TMI did not reply directly to this question but there were a number of points raised in the main body of their response that are considered relevant to the RIA.

Issues raised regarding Regulatory Impact Assessment

A7.271 There were some issues raised around ComReg's chosen basis of intervention. These have been addressed at Section A7.14.

A7.272 Other issues were raised regarding:

(a) Competition

(b) Impact on operators

(c) Perceived harm

(d) Negotiation process

(e) Other issues

Issue raised – Competition

A7.273 TMI in its response stated that ComReg has not afforded effective and sustainable competition a sufficient opportunity to remedy the perceived harm. TMI state in their response that ComReg fails to adequately consider alternative methods to increase competition as between OOs, TrOs and TOs, including greater transparency and monitoring the effects of such methods and states that ComReg is acting in breach of Section 12(1) (a)(i) of the Act.

A7.274 TMI also stated in Section 4.7(c) of their response that ComReg's proposed obligations fail to safeguard competition to the benefit of consumers and promote, where appropriate, infrastructure based competition.

ComReg's Issue Assessment – Competition

A7.275 ComReg does not agree with TMI's assessment that ComReg is has it has not met its objectives by failing to promote competition as required under Section 12 of the Act. ComReg considered a number of options in determining the most appropriate approach for wholesale intervention. In Section 4.2 of the Consultation ComReg highlighted seven different approaches to wholesale intervention that were considered in determining the appropriate proposed approach for each of the relevant NGNs.

A7.276 As outlined at Section 3.4.3 of the NGN Decision, competition can take place at different levels of the NGN Supply chain - 1) OOs compete at the retail level to attract subscribers and 2) TOs compete in the market for call termination to provide hosting to SPs.

A7.277 The harm being addressed by the proposed wholesale measures is the misuse by OOs of their bottleneck position in the NGN supply chain at the wholesale level with regards to relatively high charges for call origination. Given the bottleneck control it follows that there is no means by which competition could reasonably be expected to remedy the situation.

A7.278 There is no competition between OOs at the retail level for calls to 1800 as OOs may not charge the caller a retail rate for 1800 calls.

A7.279 There is also no competition between OOs at the wholesale level. The TO has no control over which OO is used therefore a TO cannot change to the OO that offers the lowest WOR. The OO that originates the call is dependent on the caller. The TO must accept any 1800 origination rate set by the OO and must accept the 1800 origination rate of all originating networks.

A7.280 There is no competition between OOs at the SP level either. A SP could change TO but this would not change the 1800 WOR that is charged by the OO. The SP must accept any 1800 WOR set by the OO and must accept the 1800 WOR of all originating networks.

A7.281 An OO would be at no competitive disadvantage if it substantially increased its 1800 WOR. For example there would be no decrease in the volume or duration of calls to 1800, no loss of retail or wholesale customers and no reduction in market share.

A7.282 Freephone numbers have been free to the caller on all networks since their introduction in 1984. On the fixed side, telecoms markets in Ireland were liberalised in 1998 meaning there could be more than one fixed OO (previously it had only been Telecom Éireann). On the mobile side, the first mobile network Eircell launched in 1993. Digifone followed in 1997 bringing a second mobile OO. There has been at least 21 years during which OOs have set their own rates for origination of calls to 1800. Rates have only gone up in that time.

ComReg's Response to Issue – Competition

A7.283 As outlined above ComReg does not agree with TMI's comments on competition as a remedy.

Issue raised – Impact on operators

A7.284 Eircom stated, in Step 3 of the RIA, that ComReg has failed to consider the effect that de-coupling the geo-linked retail measure from the wholesale price changes will have on Eircom and other operators. Operators will no longer be generating retail revenue in respect of 0818 calls, yet will still be required to pay the relatively high wholesale termination charges.

A7.285 Virgin Media referred to ComReg's objectives under Section 12 of the Act and to one of the main ones being to promote competition. They also refer to ComReg's objective under Regulation 16 of the Framework Regulations, *"Ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications networks and services*". Virgin Media state that the focus is on SPs and that there is no assessment across the different types of operators. Economic feasibility - ComReg has failed to take account of the financial impact that this proposal will have on smaller operators.

A7.286 While TMI did not respond directly to Question 14 in their response, they made several comments throughout the main body of their response document related to the impact that the proposed measures will have on operators which we will summarise here.

A7.287 TMI stated in Section 4.1 of their response that ComReg have failed to take account of the financial impact that the proposal will have on smaller operators.

A7.288 TMI stated in Section 4.3 of their response that ComReg has failed to conduct any assessment of the sustainability if its proposals from a competition perspective. They refer to the impact that the proposed obligations will have on smaller operators in particular.

A7.289 They stated in Section 4.4 that ComReg's failure to assess the impact that the obligations will have on smaller operators will have an indirect and adverse impact on their and MNO's ability to invest and innovate.

A7.290 TMI stated at Section 4.5 that ComReg's failure to properly assess the impact that the obligations have on smaller operators will have a direct and adverse impact on the maximum benefit to end-users.

A7.291 At Section 4.6 of their response TMI commented that the proposed measures are disproportionate and outlined several reasons. They consider that the proposals have a disproportionate effect on smaller operators – larger operators have a better ability to absorb and/or mitigate. They also stated that ComReg has failed to create a specific and proportionate remedy for SPs that provide services that are valuable to vulnerable members of society. They consider that ComReg's obligations confer a disproportionate benefit on large TOs and SPs.

A7.292 In Section 4.6(d) TMI state that ComReg has failed to create a specific and proportionate remedy for SPs that provide services that are valuable to vulnerable members of society. They consider that ComReg's obligations confer a disproportionate benefit on large TOs and SPs.

A7.293 TMI also state in Section 4.7 ComReg has failed to assess the impact that its proposed obligations will have on smaller OOs, including TMI. They refer to ComReg Document 09/98 and what is referred to ComReg exercising forbearance in the implementation of cost orientation remedies.

ComReg's Issue Assessment – Impact on operators

A7.294 As Eircom has pointed out, 0818 is the only NGN included in the Geo-linking measure for which a wholesale measure is proposed. The other NGNs subject to the Geo-linking measure (076, 1890 and, 1850) will not have a wholesale measure imposed. Also, while there is a wholesale measure for 1800 it is not included in the Geo-linking measure.

A7.295 Both of the measures relevant to 0818 are imposed on the OO. For an OO the introduction of Geo-linking will require that these calls are included in retail bundles. Currently OOs may charge a 0818 origination rate at any rate they choose. This will continue to be the case when the Geo-linking measure becomes effective and remain the case until the wholesale measure is effective (at which point a 0818 origination rate may not exceed a maximum).

A7.296 It is ComReg's position that a difference in the timing of the effective dates of the Geo-linking measure and the wholesale measure will not impact OOs in the manner described by Eircom. If there is a period in which only the Geo-linking measure is in effect OOs will have the ability to charge a WOR in advance of the 0818 wholesale measure coming into effect.

A7.297 The interrelationship between the Geo-linking measure and proposed wholesale measure has developed over time and it is now apparent that there is a lower level of linkage than previously assumed by ComReg. At Section 7.2.1.1 of the Consultation ComReg outlined its objectives under Section 12 of the Act, the first of which identified was that of promoting competition in the electronic communications sector. ComReg was and remains of the view that the proposed price obligations have the potential to lead to a more efficient pattern of prices in the NGN Market than has previously been the case.

A7.298 The proposed pricing approach for 1800 MVCO and FVCO also promotes competition through the proposed modelling structure (bottom up), cost standard (LRAIC+) and the choice of cost base (hypothetically efficient operator).

A7.299 At Section 7.2.1.2 of the Consultation ComReg outlined its objectives under Regulation 16 of the Framework Regulations which included the need to promote efficient investment and innovation. At 7.31 (d) of the Consultation ComReg outlined how visibility and certainty for operators regarding future prices is important so that operators can progress their investment plans. ComReg also described how the choice of a long run incremental costing methodology for 1800 FVCO and MVCO can provide adequate long term incentives by ensuring prices are sufficient to incentivise capacity expanding investments.

ComReg's Response to Issue – Impact on operators

A7.300 With regard to the financial impact that the proposed measures will have ComReg accepts that that there will likely be a decrease in revenue associated with NGN calls for some operators as a result of the imposition of ComReg's proposed measures, particularly in relation to Freephone. While this may affect some operators greater than others it is important to note one of the main reasons why ComReg has chosen to intervene. ComReg undertook modelling exercises with our chosen expert consultants. In doing so we derived specific cost oriented prices which can be found in and Table 1 and Table 2 in Chapter 1 of this document. The cost oriented prices are in some cases, particularly for mobile, significantly below origination rates currently being charged by OOs. In the NGN Decision ComReg identified the harm arising from high retail and wholesale charges set by OOs and the potential that valuable services for end-users may be diminished. ComReg is of the view that it will be of the maximum benefit to end-users if ComReg intervenes to prevent this from happening.

Issue raised – Perceived Harm

A7.301 TMI commented that they consider that the perceived harm to SPs has not been quantified. They also consider that ComReg has failed to analyse the perceived harm itself, including ComReg's powers to create a specific and proportionate remedy for SPs that provide services that are valuable to vulnerable members of society, "*for example by promoting the number range specifically created by the European Electronic Communications Regulatory Framework for services of social value, namely beginning with 116 under Regulation 22 of the Framework Regulations".*

ComReg's Issue Assessment – Perceived Harm

A7.302 The specific harm that the proposed measures are aimed at addressing is concerned with the harm high WORs cause to the end-user/consumer. As outlined at paragraphs 3.25-3.26 of the 2018 NGN Consultation ComReg gathered evidence including an organisational survey and stakeholder interviews. The results of these together indicated that the relatively high WORs appear to have resulted in fewer SPs providing services over the NGN platform than would otherwise be the case. ComReg would also note that while some of the harm identified was pre-existing, another source of harm relates to the potential for future harm and so would be very difficult to quantify.

A7.303 TMI refers to Regulation 22(1) of the Universal Service Regulations. There are 5 116XXX numbers. These are set by the EC (including the specific services for which they are to be used). Once these numbers are assigned to one SP offering a service of social value another SP offering the same type of service of social value would have to choose another NGN. In Ireland 4 out of 5 numbers are currently in use. ComReg is of the view that it is therefore not realistic to state that the use of these numbers would reduce the need to implement the measures being imposed as part of this Decision.

ComReg's Response to Issue – Perceived Harm

A7.304 ComReg does not agree with TMI's comments on harm and the use of the 116 number range for the reasons outlined above.

Issue Raised – Negotiation process

A7.305 TMI consider that ComReg have not interpreted Regulation 6(2)(a) of the Access Regulations closely enough. They refer to ComReg Document 09/98[135] and state that there should have been a proper analysis of the negotiation process as between different originating, transit and terminating operators and SPs including countervailing buyer power.

A7.306 TMI also commented in Section 5 of their response that ComReg has failed to properly analyse the negotiation process between TMI and different transit or terminating operators. They highlight several items that TMI would have to consider in negotiating any NGN price, such as commercial issues, reputational issues, cost issues - and state that ComReg did not seek any information from TMI in respect of these matters throughout the consultation process.

ComReg's Issue Assessment & Response – Negotiation process

A7.307 ComReg notes the comments made by TMI with regard to the various aspects of their negotiation process with different transit or terminating operators. ComReg considers that this point is incorrect. As set out in Chapter 4 of this Decision, ComReg has considered in detail the interrelationships between the various parties involved in the NGN value chain. Furthermore, in coming to its decision, ComReg has considered the information that has been submitted throughout the process of the whole of the NGN Project.

[135] Final determination in the dispute between Hutchinson 3G (Ireland) Limited and Tesco Mobile (Ireland) Limited regarding an alleged failure by Tesco Mobile to negotiate interconnection by virtue of an alleged failure to negotiate Mobile Termination Rates for the provision of mobile voice call termination services.

Issue raised – Other issues

A7.308 BT stated that the RIA is comprehensive and that they fully agree with the harm being caused by the current operation of the market. They also comment on transit stating that while they are not seeking for the transit market to be re-regulated, given that it is integral to the actual operation of the market they consider that the regulatory impact of the joint operation of the regulated and non-regulated should have been evaluated. ComReg has included a comprehensive analysis to all transit related issues at paragraphs A8.27 to A8.45

A7.309 Eircom also refer to paragraph 7.24 of the Consultation where ComReg considers that the proposed price controls "ensure that OOs are able to cover their efficiently incurred costs on an incremental basis, so are no worse off from providing NGNs". They refer to issues with termination costs which was mentioned and responded to under Question 5. Please refer to paragraphs A7.100 to A7.103.

A7.310 Virgin Media also refer to ComReg's objective under Regulation 16 of the Framework Regulations that refers to the need to *"Promoting regulatory predictability by ensuring a consistent regulatory approach over appropriate review periods"*. They commented that the review of 1800 was not anticipated and that the consultation was published in late May when budgets would have already been set and approved for the year ahead. They propose a more gradual decline in the regulated mobile origination rate. This point was also made by Virgin Media in response to Question 6.

A7.311 TMI also commented in Section 8 of their response on the lack of a glide path. They state that without having quantified the perceived harm to SPs, wide interpretation of Regulation 6(2)(a) of the Access Regulations and properly considered its powers to create a specific and proportionate remedy for SPs that provide services to vulnerable members of society ComReg acts disproportionately in accepting the advice of DotEcon.

A7.312 TMI stated in Section 4.7 of their response that ComReg's proposed obligations fail to promote efficient investment and innovation in new and enhanced infrastructures.

A7.313 TMI also commented in Section 5.1 of their response that ComReg has failed to properly analyse the substitutability of NGN and other numbers. They said that while ComReg listed a number of factors which it believes indicates that NGN and other numbers are non-substitutable numbers in 18/65, none of those factors could not be fulfilled by mobile numbers for example. They also state that ComReg's contradicts itself in paragraph 4.140 of the Consultation where the degree of substitutability between Geographic and Non-geographic numbers is referred to.

A7.314 TMI also stated in Section 5.4 of their response that ComReg has failed to properly analyse "Price retaliation" referred to in paragraph 4.87 of the Consultation, deciding instead to monitor the development going forward.

ComReg's Issue Assessment & Response – Other issues

A7.315 Eircom is referring to issues with termination costs. This was already mentioned and responded to under Question 5. Please refer to paragraphs A7.100 to A7.103

A7.316 The issue of a glide path was raised and has been addressed by ComReg in relation to Question 6 above. Please refer to paragraphs A7.124 to A7.151 of this Annex.

A7.317 Regarding TMI's point on investment and innovation ComReg considers that in proposing cost oriented prices for Freephone ComReg does meet its objective of promoting efficient investment as outlined in Section 7.34 of the updated RIA. The prices proposed for 1800 include an allowance for a reasonable rate of return for all operators.

A7.318 On the issue of substitutability ComReg notes the following. In the NGN Decision at paragraph 71 ComReg noted that there is a degree of substitutability between number ranges. ComReg also noted that it was aware that some SPs have migrated from a NGN to a geographic or mobile number. While noting that it is possible, ComReg was and remains of the view that NGNs have certain advantages that cannot be fully matched by Geographic numbers or mobile numbers. Please also see paragraph 2.49 of the 2018 NGN Consultation for further detail.

A7.319 With regards to TMI's comments that ComReg contradicted itself at para 4.140 of the recent Consultation, ComReg does not agree. The comments were made in the context of considering appropriate costing principles and given that there is a level of substitutability we consider them to be appropriate.

A7.320 Regarding TMI's comments on "Price retaliation" ComReg noted in the Consultation that one fixed operator at the time of consulting had indicated that it intended charging a higher WTR for termination of Shared Cost calls to one particular MNO. ComReg continues to monitor developments.

A7.14 Respondents' Views on Basis for Intervention

A7.321 Section 3.5 of the Consultation detailed the Legal Basis for the draft decision. ComReg did not ask a specific question in relation to the Legal Basis however, this section provides further detail on the views of Respondents, ComReg's analysis of the responses, and then states ComReg's final position having taken account of the arguments made.

Three

A7.322 Three (section 1 of its submission) commented that ComReg needs to be sure that its proposed intervention is necessary and proportionate to remedy a clearly identified problem; that the problem is not remedied by other measures already taken by ComReg, and that ComReg has established the correct legal basis for its intervention. Three did not believe this to be the case.

A7.323 Three (section 2.3 of its submission) stated that ComReg has made several errors in the application of its legal powers: the regulations that ComReg proposes to depend upon to intervene in the market and to impose price controls cannot be used in the manner proposed by ComReg, no actual harm has been shown or quantified to justify intervention using those regulations or any other regulations, and ComReg has not demonstrated that the proposed intervention is proportionate or whether any problems identified would be remedied by the retail price intervention and structural changes arising from the NGN Decision.

A7.324 Three (section 2.4 of its submission) stated that ComReg proposes to depend on Regulation 6(2) of the Access Regulations, and/or Regulation 23(1) of the Universal Service Regulations to intervene in the market. Three says that Regulation 6(2) of the Access Regulations allows ComReg to impose regulations to the extent that is necessary to ensure end-to-end connectivity or to make services interoperable. All originating networks have already interconnected and opened their networks to NGNs. There is no identified case where services are not already interoperable and providing end to end connectivity. This regulation does not provide a basis for intervention.

A7.325 Three commented that Regulations 9 to 13 of the Access Regulations specify remedies that apply to an operator who has been designated with SMP and those remedies include price control. This regulation does not provide a basis for the proposed price control intervention either on its own or in combination with regulation 6(2). It forbids the imposition of price control without a designation of SMP, other than for specified exceptions. No exceptions apply in this case.

A7.326 Three stated that Regulation 23 of the Universal Service Regulations provides for ComReg to specify requirements that would enable end-users to access and use services using NGNs within the European Union. It is intended to provide a remedy whereby NGNs are often not accessible from one EU state to another. This is the case for 1800 numbers in Ireland – they cannot be accessed from outside Ireland. This remains the case under ComReg's proposal. ComReg's proposal is not addressing any identified case where there is no access to NGN and so Regulation 23 does not provide a basis for ComReg's intervention.

A7.327 Regulation 30 of the Universal Service Regulations simply provides for the making of directions and does not give a basis for intervention.

A7.328 Regulation 16(2)(f) of the Framework Regulations provides that ComReg shall impose ex-ante regulations only where there is no effective and sustainable competition that it should relax or lift such obligations as soon as that condition is fulfilled. ComReg has not carried out a competition analysis and has not found "there is no effective and sustainable competition".

Eircom

A7.329 Eircom stated that it remains concerned that ComReg is going beyond the scope of its powers in its consultation process (para. 8). ComReg is proposing to proceed with wholesale price controls in line with Regulation 6(2) of the Access Regulation and/or Regulation 23(1) of the Universal Service Regulations. Eircom stated that it is extremely concerned that ComReg has not given sufficient consideration to, or demonstrated sufficient grounds to justify regulating on this basis, which in effect will result in a significantly lower and less rigorous level of analysis and assessment prior to the imposition of price controls on operators (para. 9).

A7.330 Eircom commented that the EC has advised that Article 5 of the Access Directive (the equivalent to Regulation 6) must be used with caution, taking into account that regulation should only be imposed when necessary and must be proportionate to the market failure identified (para. 10).

A7.331 Eircom refer to paragraph 7.15 of the Consultation which refers to efficiency and timing issues which are used to justify not completing an SMP Assessment. Eircom consider that ComReg have not demonstrated sufficient grounds for regulating on the chosen basis. They say it sets a worrying precedent and may serve to undermine regulatory certainty and chill investment incentives. They state that the RIA does not address this.

A7.332 Eircom said that one of the primary rationales proposed in ComReg 18/65 for proceeding in the manner proposed appears to be that an SMP assessment would not be timely and the retail measures would be significantly delayed (para. 11). Eircom said that the fact that the SMP analysis may take longer is not a legal justification for not using it and cannot be in itself a justification for bypassing the more detailed analysis it prescribes.

A7.333 Eircom commented that utilising provisions of the Universal Service Obligations and Access Regulations aimed at access for consumers to impose business-to-business price controls without a full analysis of the market does not appear to comply with the obligations to promote regulatory certainty, to encourage investment, and to ensure that in imposing a measure as intrusive as price controls ComReg has taken every procedural step to ensure that it is necessary and proportionate (para. 12).

A7.334 Eircom (para 13) cited ComReg's use of Cases C 85/14 KPN and C 397/14 Polkomtel in asserting its entitlement to rely inter alia on Regulation 23 of the Universal Service Regulations and Regulation 6 of the Access Regulations (para. 13). Eircom stated that in both of those cases the European Court made it clear that strict criteria had to be met in order for an NRA to rely on these provisions. In particular it is necessary to establish that:

(a) The existing tariffs are an obstacle to calling NGNs

(b) The proposed obligation is a necessary step to ensure end-users are able to access services using NGNs

(c) The tariff obligation is objective, transparent and, proportionate and non-discriminatory

(d) The tariff is based on the nature of the problem identified and

(e) Justified in light of the objectives laid down in Article 8 of the Framework Directive

A7.335 Eircom (para 14) stated that ComReg does not address the above criteria other than to say it is proposing to remove an obstacle to calling NGNs which results from the tariffs applied on the basis that that constitutes a necessary step to ensure that end-users are able to access NGNs. Eircom stated that section 3.5 of the Consultation does not identify what the obstacles are nor does it demonstrate how the proposed tariffs are a necessary step or how they will ensure access for end-users.

A7.336 Eircom further commented that the imposition of the geo-linking measure removes any barrier to end-users accessing NGNs. They state that in the circumstances ComReg does not appear in its consultation to have established a basis in imposing wholesale price controls. Eircom cited the referring court in the KPN decision which noted that higher tariffs for access to call transit services to NGNs *'may have a marginal effect. The referring court is unsure whether, in the latter case, it can be said that end-users will not be able to access services using non-geographic numbers'*.

A7.337 Eircom further stated that ComReg is asserting that existing wholesale originating rates are excessive for service providers and that this will have the knock-on effect of service providers providing a poorer service or exiting NGN provision. Eircom commented that this is the justification that is being relied upon to impose wholesale price controls. Eircom said that ComReg has provided no evidence that its proposed measures will lead to improved access for end-users. Further, ComReg has not proposed any means of ensuring that the proposed price reductions for SPs will be passed on to consumers. Eircom says that the net effect is that millions of network operator revenue is being passed on as a cost saving to businesses in the hope that this will lead to an end-user benefit. This does not appear to meet the strict legal requirement that the proposed tariff be a necessary step to ensure end-users have access.

A7.338 Eircom stated (para 16) that any issue at the wholesale level is specifically a pricing issue. The move by ComReg to impose pricing remedies without a market review sets a worrying present precedent and calls into question the approach that may be taken by ComReg in future. This will undoubtedly serve to undermine regulatory certainty and chill investment incentives.

Tesco Mobile Ireland (TMI)

A7.339 TMI stated that ComReg should use ‘competition/market forces’ to resolve any perceived harm and that ComReg has failed to adequately consider alternative methods such as increased transparency to improve competition. In doing so, TMI asserts that ComReg has acted in breach of section 12(1)(a)(i) of the Act[136], Regulation 6(1)(b) of the Access Regulations[137] and Regulation 16(2) of the Framework Regulations[138], Regulations 6(3) and 8(6) of the Access Regulations[139].

A7.340 TMI added that failing competition as a remedy, ComReg should have conducted a market review in accordance with Regulation 27 of the Framework Regulations. TMI believes that the powers that ComReg is proposing to use i.e. Regulations 6 and 8 of the Access Regulations and 23 of the Universal Service Regulations should only be used exceptionally and that ComReg had failed to demonstrate exceptionality.

[136] Which refers to ComReg’s functions and objective to promote competition.

[137] Which refers to ComReg’s functions and objective to promote sustainable competition.

[138] Which refers to the criteria that ComReg should apply in pursuit of its objectives.

[139] Which together refer inter alia to the need to act proportionately which TMI specifically refers to.

A7.341 To support its position, TMI refers to paragraph 296 of ComReg Document No. 09/98 which was the final determination in the dispute between Hutchinson 3G (Ireland) Limited and TMI regarding an alleged failure by TMI to negotiate interconnection by virtue of an alleged failure to negotiate Mobile Termination Rates for the provision of mobile voice call termination services (the **"TMI/H3GI Determination"**). Paragraph 296 of the TMI/H3GI Determination noted that SMP type obligations (including price control obligations) should only be imposed under Regulation 6 of the Access Regulations *"to the extent that it is necessary to ensure end to end connectivity"* and referred to Regulation 6 as an *"exceptional power"*.

A7.342 TMI further elaborates on why it considers that ComReg has failed to demonstrate that there are exceptional circumstances justifying the use of the proposed powers. In making its arguments, TMI responds to the points that ComReg had made in the Consultation (at paragraph A8.16) justifying its approach. TMI however adds that:

If ComReg had carried out the "three criteria test" set out at point 2 of the Recommendation on Relevant Markets that it is possible that ComReg would identify that there was no market susceptible to ex ante regulation for call origination to NGNs. Instead, it contends, ComReg applied its "own mix" of competition and regulatory law principles which lack the rigour of established process and, in turn, constitute in TMI's view a failure to follow due process and take account of relevant considerations. TMI considers that ComReg's approach also lacks legal certainty and regulatory predictability contrary to Regulation 16(2) of the Framework Regulations.

A7.343 ComReg had insufficient evidence to justify the exceptional use of the proposed powers as opposed to Regulation 27 of the Framework Regulations.

A7.344 ComReg has not demonstrated, given the "*fundamental substantive and procedural differences*" between the two regimes, how (i) the use of the proposed powers is more efficient; (ii) Regulation 27 would have achieved the same outcome; or (iii) how the proposed powers would be "less restrictive".

A7.345 ComReg cannot justify the exceptional use of the proposed powers on the basis of its own actions and the perceived harm as opposed to regulation 27 of the Frameworks Regulations. Otherwise perceived harm could always be used to justify use of these powers over regulation 27.

A7.346 There is no failure to negotiate or agree interconnect for the purposes of NGN services under Regulation 5 of the Access Regulations and therefore the issue, which TMI considers to be one of competition, should be addressed by the market review regime. TMI says that ComReg should not use the connectivity provisions of the European Electronic Communications Regulatory Framework to resolve the issue.

A7.347 TMI makes the point that ComReg has acted *ultra vires* in imposing a cost orientation obligation under Regulations 8 and 13 of the Access Regulations. It is TMI's view that in setting a price control, the standard that needs to be met is whether that price is the minimum required to ensure connectivity (necessity). TMI also claims that DotEcon has been unduly influenced by the price control obligations of Eircom, as an SMP designated and price controlled operator and that ComReg is acting unfairly towards originating operators by accepting a lower standard of evidence from TOs and SPs and failing to ensure that any perceived benefit is passed through to SPs and ultimately end-users.

A7.348 TMI consider at Section 4.2 of its response that ComReg has failed to demonstrate necessity in terms of intervention. As there is no failure to negotiate interconnect nor any failure to reach agreement in respect of interconnect for the purposes of NGN services TMI are of the view that ComReg should use the competition and not the connectivity provisions of the European Framework.

A7.349 At Section 4.7 TMI comment on promoting regulatory predictability, saying that ComReg has failed to do so in that it is now proposing three different substantive and procedural approaches to competition/connection issues – SMP analysis, dispute or current approach.

A7.350 TMI also stated at Section 5.6 of their response that ComReg has failed to properly consider complexity in pricing and competition. They state that the fact that the European Electronic Communications Regulatory Framework does not automatically provide for cost orientation in all ex ante regulation reflects the complexity and highlights the need for ComReg to do a sophisticated analysis of competition in the relevant markets.

ComReg Response to Issues raised

A7.351 ComReg has considered Three's, Eircom's and TMI's responses under the following headings:

(f) ComReg has failed to show that the proposed measure is proportionate and justified to address harm identified

(g) Choice not to intervene under Regulation 27 of the Framework Regulations

(h) Application of powers under Regulation 6 of the Access Regulations

  (i) Creation of regulatory uncertainty

  (ii) Failure to establish the 'exceptional' conditions that would justify the application of Regulation 6

(iii) Ability to impose a price control obligation under Regulation 6 of the Access Regulations

(i) Application of powers under Regulation 23 of the Universal Service Regulations

A7.352 ComReg sets out its response in relation to each of the above in further detail below.

ComReg has failed to show that the proposed measure is proportionate and justified to address harm identified

A7.353 ComReg disagrees with TMI's claim that ComReg acted in breach of its obligations to promote competition and act proportionately. As set out in detail in the Consultation and in particular Chapter 7, which contained a RIA, the proposed measures are consistent with ComReg's statutory objectives. The RIA has been reviewed and updated for the purposes of this Decision. Please see Chapter 7 of this Decision, in particular Section 7.3.1 which shows how the Decision is consistent with ComReg's objectives.

A7.354 Three also claims that ComReg has not demonstrated that the proposed intervention is proportionate or whether any problems identified would be remedied by the retail price intervention and structural changes arising from the NGN Decision. This is not the case. As explained in the 2018 NGN Consultation and the NGN Decision, intervention at both the retail and wholesale levels was required in order to remedy the issues identified in respect of the NGN Platform. The NGN Decision addressed concerns at the retail level, including the lack of transparency and excessive charges, by way of the Geo-linking Condition and Consolidation Condition. The Decision addresses problems at the wholesale level associated with WORs which could not be remedied by intervention at the retail level and, as is the case for 0818 numbers, complements the NGN Decision thereby ensuring that it can produce its full effect to the benefit of end-users. In Section 3.3 above (and Chapter 7 which contains the RIA), ComReg has examined, in detail, the harm that is the subject of this Decision.

A7.355 Three also noted that Regulation 6(2) of the Access Regulations did not provide an appropriate basis for intervention as all originating networks are interconnected and have opened their networks to NGNs. ComReg also notes TMI's view that there is no failure to negotiate or agree interconnect for the purposes of NGN services under Regulation 5 of the Access Regulations.

A7.356 For the reasons set out in Section 3.3 above, the fact that end-users can make calls to NGNs does not mean that there is effective end-to-end connectivity and that end-users have effective access to and use of NGNs. ComReg considers in this regard that excessive WORs constitute a barrier to effective end-to-end connectivity that, in turn, creates a non-technical obstacle to end-users from being able to access NGNs and related services. Intervention to remove this barrier is accordingly required. As also set out in Section 7.3.1 of the RIA, ComReg's position is that the price control and associated transparency obligation are objective, transparent, proportionate and non-discriminatory. The obligations imposed in this Decision are intended to bring to an end a range of commercial practices which are contrary to the objectives of Regulation 6 of the Access Regulations and Regulation 28 of the Universal Service Regulations.

A7.357 ComReg is familiar with and has taken account of the EC's comments, referred to by Eircom, that Article 5 of the Access Directive (the equivalent to Regulation 6) must be *'used with caution'*. ComReg has exercised its powers with restraint. As is set out in the Decision, ComReg's position is supported by detailed reasoning and evidence. The dysfunctional aspects of the NGN platform, which is being brought to an end by this Decision, have persisted for a number of years (see Section 2.4 in Chapter 2 for a list of relevant documents concerning ComReg's previous intervention on the issue). Section 3.3 of Chapter 3 (with reference to ComReg's earlier analysis and supporting DotEcon Reports) also sets out the specific harm that has been identified.

A7.358 In response to Eircom's claim that ComReg failed to address the criteria as set out in paragraph 49 of the KPN decision[140], these criteria were, and are, assessed in the RIA when ComReg considers how the proposed measure is consistent with Regulations 6 and 8 of the Access Regulations and Regulation 16 of the Framework Regulations and Section 12 of the Act. As set out in the RIA in Section 7.3.1 and the 2018 NGN Consultation, ComReg has shown the obstacles to access, how the proposed price control obligation is a *"necessary step"* and how it will ensure better access for end-users.

[140] The existing tariffs are an obstacle to calling a Non-geographic number, the proposed obligation is a necessary step to ensure end-users are able to access services using Non-geographic numbers, the tariff obligation is objective, transparent and, proportionate and non-discriminatory, the tariff is based on the nature of the problem identified and justified in light of the objectives laid down in Article 8 of the Framework Directive.

A7.359 Eircom also made a number of comments in relation to the impact of the proposed measure and claims that ComReg has provided no evidence that its proposed measures will lead to improved access for end-users or that the price reductions will be passed onto consumers by SPs. In response, ComReg refers to Section 7.3.3 of the RIA contained in Chapter 7 which summarises the impact on users of the NGN platform (End-users and SPs) and Industry Stakeholders.

Choice not to intervene under Regulation 27 of the Framework Regulations (the 'SMP regime')

A7.360 The RIA in the Consultation and the 2018 NGN Consultation set out, in detail, the legal options that were available to ComReg to address the harm that had been identified. A number of Respondents also suggested that the SMP regime under Regulation 27 of the Framework Regulations was the more appropriate approach to take. To provide transparency ComReg set out its reasoning as to why it decided to intervene under Regulation 6 of the Access Regulations and 23 of the Universal Service Regulations.

A7.361 ComReg agrees with Eircom's position that the fact that the SMP analysis may take longer is not a legal justification for not using it and cannot be, in itself, a justification for bypassing the type of analysis that it prescribes. However timing was not the justification for the choice of legal basis the suggestion that this is the reason that ComReg adopted its proposed approach is not correct. It is also not correct, contrary to what Eircom suggests, that ComReg must establish that the proposed approach is the better one vis-à-vis the SMP regime. There is no such requirement in Regulation 6 of the Access Regulations or 23 of the Universal Service Regulations that ComReg must satisfy before it can exercise the powers allocated to it within those provisions. As set out in Section 3.3 above 'Summary of harm identified' and throughout this document) ComReg considers that it is necessary to intervene and adopt a price control obligation (and supporting transparency obligation) to remove the potential for excessive WORs. In particular excessive WORs constitute a barrier to effective end-to-end connectivity that, in turn, creates a non-technical obstacle to end-users from being able to access NGNs and related services. ComReg considers that the powers set out in Regulation 6 of the Access Regulations and 23 of the Universal Service Regulations are more effective and appropriate tools to address the problem identified and to achieve the objectives of the Access Regulations and Universal Service Regulations (as elaborated upon in Chapter 7 which contains the RIA).

A7.362 ComReg also agrees with Three's comment that ComReg needs to be sure that its proposed intervention is necessary and proportionate to remedy a clearly identified problem and that the problem is not remedied by other measures already in place. ComReg has considered whether obligations imposed elsewhere are sufficient to address the problem identified, i.e. in the form of SMP obligations or by the NGN Decision and this has informed its decision to forebear from intervening in respect of certain number ranges. However, in respect of the 1800 and 0818 ranges, ComReg considers that existing regulatory constraints are not sufficient to address the particular harm identified for the 1800 and 0818 NGN ranges.

A7.363 As outlined in Section 3.11 of the 2018 NGN Consultation end-to-end connectivity is the mechanism through which all consumers can access services provided by all SPs, regardless of operator. For this to happen, all operators must be able to interconnect with one another, in order to provide a full service to their customers. ComReg is of the view that access to services, provided by SPs using NGNs, and the provision of end-to-end connectivity can be restricted through retail and WORs:

(a) if an OO increases its retail charges to such extent as to effectively foreclose its customers from accessing an SP's services, the SP will not receive calls which the OO's customers would otherwise have made.

(b) if an OO charges high wholesale NGN call origination charges, it may discourage SPs from providing services on NGNs that cost less or are free of charge for consumers. This could also effectively foreclose certain SPs' services to consumers.

A7.364 ComReg therefore does consider that the issue to be addressed is one of connectivity.

A7.365 ComReg does not agree with the comments from TMI that suggest ComReg is inconsistent in its approach to regulation. There appears to be a suggestion that ComReg will potentially pick a regulatory approach at random. This is untrue. In proposing the current measures ComReg gathered a large amount of evidence which informed its decision on how best to proceed.

A7.366 While ComReg accepts that there is a level of complexity in pricing/competition issues, ComReg does not agree with comments from TMI and Eircom that the best way to address the problem identified is through the SMP regime.

A7.367 DotEcon also addressed this point in Annex B of the Final DotEcon Report taking the view that the justification for intervention is in no way undermined by the fact that excessive WORs could have been addressed using different routes under the EU Regulatory Framework. On the contrary it enhances it. The multiplicity of routes does not in itself create regulatory uncertainty unless the different approaches were to lead to significantly different outcomes for the level of WORs, which they do not.

Application of powers under Regulation 6 of the Access Regulations

(i) Creation of Regulatory uncertainty

A7.368 ComReg does not agree with TMI's position that in deciding to use Regulation 6 of the Access Regulations in combination with Regulation 8 and 13 of the Access Regulations ComReg has applied its *"own mix"* of competition and regulatory law principles which *"lack the rigour of established process"* and in turn constitute a failure to follow due process and take account of relevant considerations.

A7.369 As elaborated in Section 3.4.1 of Chapter 3 which sets out the Legal Basis for the proposed approach, in terms of the obligations which ComReg may impose under Regulation 6 and Regulation 23, they include, as clarified by the Court of Justice of the European Union in the *KPN v AMC* case, the obligations listed in Regulations 9 to 13 of the Access Regulations which ComReg may impose on operators who have not been designated with market power where they control access to end-users and the obligations are necessary and proportionate in the circumstances. It is also the case that, in accordance with Regulation 13 of the Framework Regulations and Article 7 of the Framework Directive, ComReg notified to the EC the draft measure and that as part of that process. Having considered the proposed measure, the EC had "No Comment".

A7.370 Eircom also considers that the use by ComReg of its powers under Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations, without a full analysis of the market, will serve to undermine regulatory certainty and chill investment incentives.

A7.371 In exercising its powers, ComReg is satisfied that it has acted fully in accordance with the Access Regulations and the procedures set out in the Framework Regulations (see RIA – Section 7.3.1.2). ComReg recognises that when exercising its statutory objectives it shall promote regulatory predictability by ensuring a consistent regulatory approach over the appropriate review periods. ComReg notes that in applying this principle, ComReg communicated, both in the NGN Decision and the 2018 NGN Consultation (published 13 July 2018) its intention (subject to consultation) to implement a wholesale price control mechanism on NGN call origination charges, under Regulation 8(3) of the Access Regulation in conjunction with Regulation 6(2) of the Access Regulations and/or Regulation 23(1) of the Universal Service Regulations.

A7.372 The identification and assessment of harm were addressed, in detail, in these earlier documents with supporting expert reports and surveys. ComReg subsequently conducted, with its advisors, an extensive review of the harm identified and justification of the proposed remedies, which was set out in the lengthy and detailed consultation document and supporting expert reports. ComReg considers that it has provided sufficient certainty and allowed for adequate engagement in terms of its intended approach to address the problem identified.

(ii) Failure to establish the 'exceptional' conditions that would justify the application of Regulation 6

A7.373 In response to TMI's reference to the TMI/H3GI Determination and specifically the position that the powers contained in Regulation 6 of the Access Regulations are "exceptional" in nature, ComReg does recognise the limitations of the powers contained in Regulation 6 of the Access Regulations. ComReg considers that, as evidenced in paragraphs 7.55 to 7.70 of the RIA it has acted in accordance with the Access Regulations and the Universal Service Regulations and the procedures set out in the Framework Regulations (such as the need to carry out a consultation and Article 7 notification to the EC) in the pursuit of its objectives. As was set out in paragraph 3.63 of the Consultation, ComReg considers that it is necessary to intervene to adopt a price control (and supporting transparency) obligations to remove the potential for excessive WORs that constitute a barrier to effective end-to-end connectivity that, in turn, creates a non-technical obstacle to end-users from being able to access NGNs and related services.[141] As also set out in Section 7.3.1.9 of the RIA ComReg considers that the obligations imposed are objective, transparent, proportionate and non-discriminatory.

A7.374 ComReg does not agree with TMI's point that intervening under Regulation 6 of the Access Regulations and 23 of the Universal Service Regulations and setting a price control obligation under Regulations 8 and 13 of the Access Regulations, the standard that needs to be met is whether that price is *"the minimum required in order to ensure connectivity (necessity)"*. ComReg fails to see the legal basis for this position.

[141] In the KPN Case the CJEU held that EU law must be interpreted as allowing a relevant national authority to impose a tariff obligation under Article 28 of Universal Service Directive to remove an obstacle to calling Non-geographic numbers within the European Union which is not technical in nature, but which results from the tariffs applied, without a market analysis having been carried out showing that the undertaking concerned has significant market power, if such an obligation constitutes a necessary and proportionate step to ensure that end-users are able to access services using Non-geographic numbers within the European Union.

A7.375 In imposing any obligation under Regulations 8 and 13 of the Access Regulations ComReg must meet the requirements set out in those provisions including the need to establish that the obligation is based on the nature of the problem identified, is proportionate and justified and that the relevant operator is allowed a reasonable rate of return. ComReg considers that imposing a cost orientation obligation based on a LRAIC + costing methodology removes excessive prices thereby facilitating effective end-to-end connectivity and removing any potential obstacles to accessing NGNs and related services. ComReg also considers that the proposed price control will allow an operator to ensure that its wholesale access prices recover no more than its actual incurred costs, adjusted for efficiencies, plus a reasonable rate of return.

(iii) Ability to impose a price control obligation under Regulation 6 of the Access Regulations

A7.376 Three commented that the obligations described at Regulations 9 to 13 of the Access Regulations can only be imposed on an operator who has been designated with SMP, unless exceptional circumstances arise (which Three claims do not arise). In response, ComReg refers to the wording on Regulation 8 (3) of the Access Regulations which states that "without prejudice" to certain provisions, including paragraphs (1) and (2) of Regulation 6 of the Access Regulations and Regulation 23 of the Universal Service Regulations the Regulator shall not impose the obligations set out in Regulations 9 to 13 on operators that have not been designated in accordance with paragraph (1) of the Regulation 8 of the Access Regulations.

A7.377 Regulation 8(3) should therefore be interpreted to mean that the Regulator may not impose obligations related to price control such as those laid down in Regulation 13 of the Access Regulations on operators which do not have significant power on a given market, except where intervention is made under certain specific provisions, including Regulation 6 and Regulation 23.[142] As clarified by the Court of Justice of the European Union in the *KPN v AMC* case, the obligations listed in Regulations 9 to 13 of the Access Regulations may be imposed on operators who have not been designated with market power where they control access to end-users and the obligations are necessary and proportionate in the circumstances.

[142] This position is supported by the KPN case - see para 41-43.

A7.378 TMI claimed in Section 6 of its response that ComReg and its advisers DotEcon have been unduly influenced by the price obligations of Eircom and that it was not appropriate to impose a standard that applied under the Framework Regulations to an SMP operator on an obligation applied under the Access Regulations. ComReg does not agree. ComReg, along with its advisers DotEcon, considered a number of options available to ComReg by which to address excessive WORs. At the outset DotEcon considered what comparators might be relevant in the absence of modelled costs for mobile operators and this included an assessment of Eircom's regulated charges. The potential for cost differences between fixed and mobile networks was acknowledged. As the overall review of NGNs progressed, ComReg, with its advisers, undertook modelling of actual mobile origination costs, so that previous analysis by DotEcon became essentially redundant. Therefore, for the avoidance of doubt, the remedies for mobile operators currently being imposed by ComReg are not based on the costs of Eircom.

Application of powers under Regulation 23 of the Universal Service Regulations

A7.379 Three claims that Regulation 23 of the Universal Service Regulations is intended to provide a remedy whereby NGNs are not accessible from one European Union state to another and that Regulation 30 of the Universal Service Regulations simply provides for the making of directions and does not give a basis for ComReg's intervention. ComReg's position is that the objective of Regulation 23 of the Universal Service Regulations is broader than Three's interpretation and that Regulation 23 aims to ensure to, inter alia, that all end-users have effective access to services using non-Geographic numbers within the European Union. Regulation 30 of the Universal Service Regulations (and Regulation 18 of the Access Regulation) is referred to as one of the legal bases upon which the price control obligation is being imposed. ComReg is satisfied that the draft measure is consistent with the objectives of Regulation 23 of the Universal Service Regulations.

Annex 8 EC Response to ComReg's Notified Draft Measures

A8.1 This Annex contains a copy of the EC response to ComReg's notified draft measures in relation to Non-geographic numbers, EC Case IE/2019/2224, (the 'Comments Letter') received by ComReg on 11 December 2019. The Commission advised that they had no comments.

EUROPEAN COMMISSION

Brussels, 10.12.2019
C(2019) 9143 final

Commission for Communications
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For the attention of:
Mr. Garrett Blaney
Chairperson of the Commission

Fax: +353 1 804 9665

Subject: Case IE/2019/2224: Wholesale call origination to non-geographic numbers in Ireland

Article 7(3) of Directive 2002/21/EC: No comments

Dear Mr Blaney,

1. PROCEDURE

On 11 November 2019, the Commission registered a notification from the Irish national regulatory authority, the Commission for Communications (ComReg)[1], concerning the market for wholesale call origination to non-geographic numbers (NGNs) in Ireland[2].

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[1] Under Article 7 of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L 108, 24.4.2002, p. 33, as amended by Directive 2009/140/EC, OJ L 337, 18.12.2009, p. 37, and Regulation (EC) No 544/2009, OJ L 167, 29.6.2009, p. 12.

[2] Corresponding to market 2 in Commission Recommendation 2007/879/EC of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Recommendation on Relevant Markets), OJ L 344, 28.12.2007, p. 65. This market has been removed

The national consultation[3] ran from 22 May 2019 to 2 July 2019.

On 21 November 2019, the Commission sent a request for information[4] to ComReg and received a reply on 26 November 2019.

2. DESCRIPTION OF THE DRAFT MEASURE

With the present draft measure, ComReg proposes to impose transparency and price control obligations on all fixed and mobile operators providing wholesale call origination to NGNs. ComReg proposes to rely on Article 5 of the Access Directive in conjunction with Article 28 of the Universal Service Directive[5].

2.1. Background

The market for fixed wholesale call origination in Ireland was previously notified to and assessed by the Commission under case IE/2015/1746[6].

ComReg defined a fixed access and call origination (FACO) market comprising a fixed access (FA) or wholesale line rental component (WLR) and a fixed voice call origination (FVCO) component. The FVCO was defined as calls originated at a fixed location of an end-user which are conveyed and routed through any switching stages (or equivalent) up to a point of interconnection[7]. FVCO did not distinguish between the types of telephone numbers being called, i.e. NGNs were included in the market. ComReg designated Eircom with significant market power (SMP) and imposed on it a full set of obligations. In particular, ComReg calculated the price cap for FVCO using a forward-looking, top-down, long-run, average incremental cost-plus (LRAIC+) model. For NGN call origination, Eircom was allowed to recover its unavoidable retail costs related to billing and bad debt incurred in the provision of NGN telephony services.

For many years, a voluntary arrangement of symmetric rates was in place for calls to NGNs. Under this arrangement (the ‘deemed-to-be’ regime) the wholesale origination rates for calls to some NGNs, including 1800, levied by fixed networks

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from the list of the relevant markets that may warrant *ex ante* regulation which is contained in the currently applicable Commission Recommendation 2014/710/EU of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Recommendation on Relevant Markets), OJ L 295, 11.10.2014, p. 79.

3 In accordance with Article 6 of the Framework Directive.

4 In accordance with Article 5(2) of the Framework Directive.

5 Case C-85/14, EU:C 2015: 610 *KPN BV v ACM* and Case C-397/14, ECLI:EU:C:2016:256 *Polkomtel sp. z o.o. v. Prezes Urzedu Komunikacji Elektronicznej*. ComReg considered the possibility of imposing a price-control obligation based on a market analysis and assessment of SMP, but it considered that in the current context the proposed legal bases address the identified problems more effectively.

6 C(2015)5011.

7 This interconnection takes place at the primary, tandem, or double-tandem exchange associated with the FA at which the voice call was originated within Eircom’s network.

operators were deemed to be the same as the rates levied by Eircom[8]. However, as the wholesale origination rates charged by mobile operators were significantly higher than those charged by the fixed operators under the deemed-to-be regime, a number of fixed operators also left the regime.

ComReg has conducted a review of certain telephone numbers known as NGNs. The five classes of NGNs considered in ComReg's review are those that begin with the prefixes 1800, 1850, 1890, 0818 and 076. ComReg considered that the NGNs platform was not working efficiently and in the best interest of end-users. In particular, the lack of clarity in terms of the prices for calls to NGNs — and the high costs for service providers — meant that the current access and interconnection arrangements for NGNs were not allowing effective access and use of services through NGNs to end-users, and instead acted as obstacles to the provision of those services. ComReg found that regulatory intervention was required at both the retail and the wholesale levels of the NGN value chain.

In order to address problems at retail level, ComReg issued in 2018 the Non-Geographic Number Decision[9]. In the decision, ComReg decided to: (i) limit NGNs from 1 January 2022 to only two number ranges – 1800 and 0818[10] (NGN consolidation); and (ii) to cap the charge for 0818 callers at the price of a geographic number (the geo-linking condition[11]).

2.2. The notified draft measure

In the present notification, ComReg addresses the wholesale aspect of the provision of calls to NGNs. More precisely, ComReg proposes to impose a price control and transparency[12] obligation on any fixed and mobile operator providing wholesale call origination to NGNs[13] in the 0818 and 1800 ranges. The obligations are imposed irrespectively of a designation as operator with significant market power, and are based on national provisions implementing Article 5 of the Access Directive in conjunction with Article 28 of the Universal Service Directive. ComReg's aim is to remove the potential for excessive wholesale origination rates, which constitute a

8 Operators of mobile networks did not join the voluntary deemed-to-be regime and charged their own wholesale origination rates that were not cost-based.

9 ComReg Document 18/106 (D15/18), *Review of Non-Geographic Numbers - Response to Consultation 18/65 and Decision*.

10 The cost for the calls to 0818 NGNs is paid by the caller, with no contribution from the called party (i.e. the 'calling party pays' principle), whereas the cost for calls to 1800 NGNs ('freephone') is charged to the receiver, ultimately the service provider, with no cost for the caller (i.e. the 'receiving party pays' principle).

11 From 1 December 2019, the retail tariff for a call to any of the four ranges 1850, 1890, 0818 and 076 must not exceed the retail tariff for a call made by the same end-user for a national call made to a geographic number. The geo-linking condition applies to these four NGNs. Once the 1850, 1890, and 076 ranges are withdrawn, the geo-linking condition will also continue to apply to the remaining 0818 range.

12 ComReg considers it sufficient to require operators to publish and keep updated on their website their 1800 (and where applicable the 0818) FVCO rates with associated terms and conditions.

13 On 076, 1850 and 1890 NGNs, ComReg considers that no wholesale regulatory intervention is warranted. Indeed, as of 1 January 2022, these three NGNs ranges will be withdrawn as part of NGN consolidation. ComReg will carry out a periodic review of undertakings originating calls to 1800 and 0818 and will update the operators as appropriate.

barrier to effective end-to-end connectivity that, in turn, create a non-technical obstacle to end-users from being able to access NGNs and related services.

In particular, ComReg proposes to impose two different price control obligations as set out below.

1. **0818 NGNs**: Originating operators must not charge wholesale origination rates for calls to 0818 NGNs, unless such operators are subject to an 0818-termination rate, which exceeds the regulated fixed termination rate. In such cases, the relevant originating operator will be permitted to charge an 0818 wholesale origination rate that is no greater than the difference between that 0818-termination rate and the regulated fixed termination rate[14].

2. **1800 NGNs**: cost-oriented wholesale origination rates will be set based on the bottom-up, long-run, incremental cost-plus (BU-LRIC +) cost standard. Different rates will apply depending on whether the call is originated on a fixed or on a mobile network[15].

Year	Maximum wholesale origination rate for calls to 1800 NGNs originating from a mobile network (EURc/min)
2020	1.62
2021	1.61
2022	1.60
2023	1.60
2024	1.59

Table 1: Maximum wholesale origination rates for calls to 1800 numbers originating from mobile networks from 2020 to 2024

Year	Maximum wholesale origination rate for calls to 1800 NGNs originating from a fixed network (EURc/min)

14 ComReg is of the view that a price control is required on wholesale origination rates for calls to 0818 NGNs in order to mitigate the risk of excessive bargaining power being exercised at the wholesale level. In particular, to address the loss of retail revenues that may result from the coming into effect of the geo-linking condition (on 1 December 2019), originating operators could exploit their bottleneck control on the origination of calls to 0818 NGNs by charging a wholesale origination rate for which there is no justification.

15 As these calls are entirely free for the caller, ComReg considers that the bottleneck mainly lays at the level of the setting the wholesale call origination rate. The inherent risk in excessive wholesale origination rates is that some service providers would shift away from the use of freephone numbers to numbers where the caller must cover the cost of the call or even cease to offer services altogether.

2020	0.873
2021	0.918
2022	0.961
2023	1.000
2024	1.043

Table 2: Maximum wholesale origination rates for calls to 1800 numbers originating from a fixed network from 2020 to 2024

According to ComReg, wholesale measures for calls to 1800 and 0818 numbers will come into effect on 1 February 2020, subject to ComReg's final decision. Unless otherwise required, ComReg will reassess the imposed wholesale origination rates before 1 January 2025.

3. NO COMMENTS

The Commission has examined the notifications and the additional information provided by the ComReg and has no comments.[16]

Under Article 7(7) of the Framework Directive, ComReg may adopt the draft measure and, where it does so, shall communicate it to the Commission.

The Commission's position on this particular notification is without prejudice to any position it may take on other notified draft measures.

[16] In accordance with Article 7(3) of the Framework Directive.

Pursuant to point 15 of Recommendation 2008/850/EC[17] the Commission will publish this document on its website. If ComReg considers that, in accordance with EU and national rules on business confidentiality, this document contains confidential information, which you wish to have deleted prior to publication, please inform the Commission[18] within 3 working days following receipt[19] and give reasons for any such request.

Yours sincerely,

CERTIFIED COPY
For the Secretary-General,

Jordi AYET PUIGARNAU
Director of the Registry
EUROPEAN COMMISSION

For the Commission
Roberto Viola
Director-General

[17] Commission Recommendation 2008/850/EC of 15 October 2008 on notifications, time limits and consultations provided for in Article 7 of Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ L 301, 12.11.2008, p. 23.

[18] By email: CNECT-ARTICLE7@ec.europa.eu.

[19] The Commission may inform the public of the result of its assessment before the end of this three-day period.

Annex 9 Mobile Service Providers: Decision Instrument

1 STATUTORY POWERS GIVING RISE TO THIS DECISION INSTRUMENT

1.1 This Decision Instrument (“Decision Instrument”) is made by the Commission for Communications Regulation (“ComReg”) and relates to the regulation of wholesale charges for Non-geographic numbers.

1.2 This Decision Instrument is made:

(i) Pursuant to and having had regard to Sections 10 and 12 of the Communications Regulation Act 2002 (as amended) and Regulation 16 of the Framework Regulations;

(ii) Pursuant to Regulation 6(1), 6(2), 6(3) and 6(4) of the Access Regulations;

(iii) Pursuant to Regulations 8, 9, 13 and 18 of the Access Regulations;

(iv) Pursuant to Regulations 23 and 30 of the Universal Service Regulations;

(v) Having had regard to the analysis and reasoning set out in ComReg Document No. 19/46, and having taken account of the Submissions received from interested parties in response thereto following a public consultation pursuant to Regulation 12 of the Framework Regulations;

(vi) Having had regard to the analysis and reasoning set out in ComReg Decision 15/18 and associated documents,

(vii) Having notified the draft measure and the reasoning on which the measure is based to the European Commission, BEREC and the national regulatory authorities in other EU Member States pursuant to Regulation 13 of the Framework Regulations and having taken utmost account of any comments made by these parties;

(viii) Having regard to the analysis and reasoning set out in ComReg Decision D02/20.

1.3 The provisions of ComReg Document No. 18/65, ComReg Document No. 19/46 and ComReg Decision D02/20 shall, where appropriate, be construed consistently with this Decision Instrument.

PART I - GENERAL PROVISIONS (SECTIONS 2 TO 5 OF THE DECISION INSTRUMENT)

2 DEFINITIONS

2.1 In this Decision Instrument, unless the context otherwise suggests:

"0818 number" shall have the same meaning as set out in the Numbering Conditions of Use;

"0818 Mobile Voice Call Origination" or "0818 MVCO" means MVCO for calls to 0818 numbers;

"0818 MVCO Rate" means the per minute charge levied for 1800 MVCO;

"0818 Termination" means the provision of a wholesale call termination service to other Undertakings by which incoming voice calls are handed over for termination to 0818 numbers;

"**0818 Termination Rate**" means a rate associated with the provision of 0818 Termination and is a rate other than the Regulated FTR;

"1800 number" shall have the same meaning as set out in the Numbering Conditions of Use;

"1800 Mobile Voice Call Origination" or "1800 MVCO" means MVCO for calls to 1800 numbers;

"1800 MVCO Rate" means the per minute charge levied for 1800 MVCO;

"Access Regulations" means the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011), as may be amended from time to time or replaced with equivalent effect;

"Authorisation Regulations" means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011), as may be amended from time to time or replaced with equivalent effect;

"BEREC" means the Body of European Regulators for Electronic Communications, as established pursuant to Regulation (EC) No. 1211/2009 of the European Parliament and of the Council of 25 November 2009;

"BU LRAIC+ MVCO Model" means a bottom-up model based on the LRAIC+ of an efficient operator and in the context of this Decision Instrument is the bottom up economic/engineering model of an efficient network used to determine the LRAIC+ associated with the supply of MVCO which is more particularly described at Chapter 5 of ComReg Decision D02/20;

"Communications Regulation Act 2002 (as amended)" means the Communications Regulation Act 2002 (No. 20 of 2002), as amended;

"ComReg" means the Commission for Communications Regulation, established under Section 6 of the Communications Regulation Act 2002 (as amended);

"ComReg Decision D15/18" means ComReg Document No. 18/106, entitled "*Review of Non-Geographic Numbers Response to Consultation 18/65 and Decision*", dated 3 December 2018;

"ComReg Decision D11/19" means ComReg Document No. 19/48, entitled "*Price control obligations for fixed and mobile call termination rates*", dated 23 May 2019;

"ComReg Decision D02/20" means ComReg Document No. 20/04R, entitled "Response to Consultation and Decision - Access to Non-Geographic Numbers: Imposition of price control and transparency obligations, dated 16 January 2020;

"ComReg Document No. 18/65" means ComReg Document No. 18/65, entitled *"Response to Consultation - Review of Non-Geographic Numbers"*, dated 11 July 2018;

"ComReg Document No. 19/46" means ComReg Document No. 19/46, entitled ***"****Response to Consultation, Further Consultation and Draft Decision: Access to Non-Geographic Numbers: Imposition of price control and transparency obligations"* dated 22 May 2019;

"Decision Instrument" means this decision instrument which is made pursuant to *inter alia* Regulations 6, 8, 9, 13 and 18 of the Access Regulations and Regulation 23 and 30 of the Universal Service Regulations;

"Effective Date" means the date set out in Section 7 of this Decision Instrument;

"End-user" shall have the same meaning as under Regulation 2 of the Framework Regulations, as may be amended from time to time. For the avoidance of doubt, End-user(s) shall be deemed to include any natural or legal person who facilitates or intends to facilitate the provision of public communications networks or publicly available electronic communications services to other End-users and who is not acting as an Undertaking;

"Framework Regulations" means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011), as may be amended from time to time or replaced with equivalent effect;

"Interconnection" shall have the same meaning as under Regulation 2 of the Access Regulations;

"Long Run Average Incremental Cost plus" or **"LRAIC+"** means the average efficiently incurred directly attributable variable and mobile costs, plus an appropriate apportionment of joint and common costs;

"Mobile Network" means a 2nd, 3rd, 4th, or 5th Generation digital wireless network, or any intermediate evolution of those, using Mobile Numbers, in which seamless handover and roaming features are provided;

"Mobile Network Operator" or "MNO" means an Undertaking providing End-users with land based/terrestrial publicly available mobile voice telephony services using a Mobile Network;

"Mobile Number(s)" shall have the same meaning as set out in the Numbering Conditions of Use, as may be amended from time to time;

"Mobile Voice Call Origination" or **"MVCO"** means a wholesale service whereby voice calls originating at a Mobile Number of an End-user are conveyed and routed through any switching stages (or equivalent, regardless of underlying technology) up to a Point of Handover nominated by an Undertaking seeking access to this service;

"Non-geographic number" or **"NGN"** shall have the same meaning as under Regulation 2 of the Access Regulations;

"Numbering Conditions of Use" means the set of rules under which the Irish national numbering scheme is managed and administered as set out in the document entitled *Numbering Conditions of Use and Application Process, ComReg 15/136R2,* as may be amended by ComReg from time to time or replaced with equivalent effect;

"Point of Handover" means the physical point at which two networks are interconnected to allow traffic between these networks;

"Regulated FTR" means the wholesale maximum fixed termination rate imposed pursuant to ComReg Decision D11/19 as may be amended from time to time or replaced with equivalent effect by the setting of an alternative rate such as the single maximum Union wide fixed voice termination rate set in accordance with Article 75 of the European Electronic Communications Code (EU) 2018/1972;

"Relevant Undertaking" means an Undertaking that offers 1800 MVCO or 0818 MVCO and has the ability to set a 1800 MVCO Rate or a 0818 MVCO Rate as listed at Appendix 1 of this Decision Instrument;

"Terminating Operator" means an Undertaking providing 0818 Termination;

"Undertaking(s)" shall have the same meaning as under Regulation 2 of the Framework Regulations;

"Universal Service Regulations" means the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (S.I. No. 337 of 2011), as may be amended from time to time or replaced with equivalent effect.

3 SCOPE AND APPLICATION

3.1 This Decision Instrument applies to any Relevant Undertaking as listed at Appendix 1 to this Decision Instrument.

3.2 This Decision Instrument is binding on each such Relevant Undertaking in the manner now set out below and each such Relevant Undertaking shall comply with this Decision Instrument to the extent that it applies to that Relevant Undertaking.

3.3 This Decision Instrument, pursuant to Regulations 6, 8, 9, 13 and 18 of the Access Regulations and Regulation 23 and Regulation 30 of the Universal Service Regulations imposes certain obligations on Relevant Undertakings as more particularly set out in Section 4 of this Decision Instrument.

PART II - OBLIGATIONS (SECTION 4 OF THE DECISION INSTRUMENT)

4 OBLIGATIONS

4.1 ComReg is imposing certain obligations on each Relevant Undertaking in accordance with and pursuant to Regulations 6, 8, 9, 13 and 18 of the Access Regulations and Regulations 23 and 30 of the Universal Service Regulations, as detailed further in Sections 4.2 to 4.10 of this Decision Instrument.

4.2 Pursuant to Regulations 8, 13 and 18 of the Access Regulations, each Relevant Undertaking is subject to a price control obligation in relation to the provision of 1800 MVCO or 0818 MVCO.

4.3 Without prejudice to the generality of section 4.2 of this Decision Instrument, each Relevant Undertaking is subject to a cost orientation obligation in relation to the provision of 1800 MVCO. Each Relevant Undertaking is hereby directed to ensure that its 1800 MVCO Rate(s) are set in accordance with a LRAIC+ costing methodology.

4.4 Without prejudice to the generality of section 4.3 of this Decision Instrument, pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 13 of the Access Regulations, each Relevant Undertaking shall ensure that from **1 May 2020** its 1800 MVCO Rate(s) are no more than the relevant BU LRAIC+ MVCO Rate, derived from the BU LRAIC+ MVCO Model, which are set out in the Table below.

Dates	Maximum 1800 MVCO Rate
1 May 2020 to 31 December 2020	1.62 cent/minute
1 January 2021 to 31 December 2021	1.61cent/minute
1 January 2022 to 31 December 2022	1.60 cent/minute
1 January 2023 to 31 December 2023	1.60 cent/minute
1 January 2024 to 31 December 2024	1.59 cent/minute

4.5 Pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 13 of the Access Regulations, each Relevant Undertaking shall not impose a charge in relation to the provision of 0818 MVCO other than in the circumstances provided for in section 4.6 below.

4.6 Pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 13 of the Access Regulations, where any Relevant Undertaking is charged a 0818 Termination Rate that is in excess of the Regulated FTR, that Relevant Undertaking may charge the 0818 Terminating Operator a 0818 MVCO Rate that is no greater than the difference between that 0818 Termination Rate and the Regulated FTR.

4.7 Without prejudice to the generality of section 4.2 of this Decision Instrument, pursuant to Regulations 8, 13 and 18 of the Access Regulations, each Relevant Undertaking shall ensure that it recovers no more than its actually incurred costs (adjusted for efficiency) plus a reasonable rate of return associated with the provision of 1800 MVCO or 0818 MVCO. For the avoidance of doubt, where the Relevant Undertaking considers that it has not recovered such costs it may make a submission to ComReg setting out the basis for any under recovery for ComReg's assessment.

4.8 Pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 9 of the Access Regulations each Relevant Undertaking shall be subject to an obligation of transparency in respect of 1800 MVCO Rates and 0818 MVCO Rates.

4.9 Without prejudice to the generality of section 4.8 above, each Relevant Undertaking shall publish on its website on **1 May 2020** and thereafter keep updated its 1800 MVCO Rates and 0818 MVCO Rates with associated terms and conditions.

4.10 Pursuant to Regulations 9, 13 and 18 of the Access Regulations, each Relevant Undertaking shall ensure that wholesale invoices shall be sufficiently disaggregated, detailed and clearly presented so that an Undertaking can reconcile invoices to the published 1800 MVCO Rates and 0818 MVCO Rates.

PART III – MAINTENANCE OF OBLIGATIONS AND EFFECTIVE DATE (SECTIONS 5 TO 6 OF THE DECISION INSTRUMENT)

5 STATUTORY POWERS NOT AFFECTED

5.1 Nothing in this Decision Instrument shall operate to limit ComReg in the exercise and performance of its statutory powers or duties conferred on it from time to time under any applicable law (in force prior to or after the Effective Date of this Decision Instrument).

6 MAINTENANCE OF OBLIGATIONS

6.1 Unless expressly stated otherwise in this Decision Instrument, all obligations and requirements contained in decision instruments, decision notices and directions made by ComReg applying to each Relevant Undertaking and in force immediately prior to the Effective Date of this Decision Instrument, are continued in force by this Decision Instrument and each Relevant Undertaking shall comply with same.

6.2 If any section, clause or provision or portion thereof contained in this Decision Instrument is found to be invalid or prohibited by the Constitution, by any other law or judged by a court to be unlawful, void or unenforceable, that section, clause or provision or portion thereof shall, to the extent required, be severed from this Decision Instrument and rendered ineffective as far as possible without modifying the remaining section(s), clause(s) or provision(s) or portion thereof of this Decision Instrument, and shall not in any way affect the validity or enforcement of this Decision Instrument.

7 EFFECTIVE DATE

7.1 The Effective Date of this Decision Instrument shall be the date of its publication and notification to each Relevant Undertaking and it shall remain in force until further notice by ComReg.

GARRETT BLANEY

CHAIRPERSON

THE COMMISSION FOR COMMUNICATIONS REGULATION

THE 16 DAY OF JANUARY 2020

APPENDIX 1 – RELEVANT UNDERTAKINGS

A1. This Decision Instrument applies to each of the following Relevant Undertakings individually (and not collectively) in respect of activities falling within the scope of Section 4 of this Decision Instrument. Furthermore, this Decision Instrument is binding upon each such Relevant Undertaking in the manner now set out below and each such Undertaking shall comply with this Decision Instrument to the extent that it applies to that Relevant Undertaking. This list may be amended by ComReg from time to time.

(i) Lycamobile Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(ii) Meteor Mobile Communications Limited, which is the mobile arm of the Eircom Group (which includes Eircom Limited and Eircom Holdings (Ireland) Limited), trading under the business name Eircom Mobile, and for the purpose of this Decision Instrument includes its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns

(iii) Tesco Mobile Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(iv) Three Ireland (Hutchison) Limited and its subsidiaries, and any Undertaking which it owns or controls and any undertaking which owns or controls it, and its successors, affiliates and assigns, which for the avoidance of doubt includes Three Ireland Services (Hutchison) Limited;

(v) Virgin Media Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(vi) Vodafone Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns.

Annex 10 Fixed Service Providers: Decision Instrument

1 STATUTORY POWERS GIVING RISE TO THIS DECISION INSTRUMENT

1.1 This Decision Instrument ("Decision Instrument") is made by the Commission for Communications Regulation ("ComReg") and relates to the regulation of wholesale charges for Non-geographic numbers.

1.2 This Decision Instrument is made:

(i) Pursuant to and having had regard to Sections 10 and 12 of the Communications Regulation Act 2002 (as amended) and Regulation 16 of the Framework Regulations;

(ii) Pursuant to Regulation 6(1), 6(2), 6(3) and 6(4) of the Access Regulations;

(iii) Pursuant to Regulations 8, 9, 13 and 18 of the Access Regulations;

(iv) Pursuant to Regulations 23 and 30 of the Universal Service Regulations;

(v) Having had regard to the analysis and reasoning set out in ComReg Document No. 19/46, and having taken account of the Submissions received from interested parties in response thereto following a public consultation pursuant to Regulation 12 of the Framework Regulations;

(vi) Having had regard to the analysis and reasoning set out in ComReg Decision 15/18 and associated documents,

(vii) Having notified the draft measure and the reasoning on which the measure is based to the European Commission, BEREC and the national regulatory authorities in other EU Member States pursuant to Regulation 13 of the Framework Regulations and having taken utmost account of any comments made by these parties;

(viii) Having regard to the analysis and reasoning set out in ComReg Decision D02/20.

1.3 The provisions of ComReg Document No. 18/65, ComReg Document No. 19/46 and ComReg Decision D02/20 shall, where appropriate, be construed consistently with this Decision Instrument.

PART I - GENERAL PROVISIONS (SECTIONS 2 TO 5 OF THE DECISION INSTRUMENT)

2 DEFINITIONS

2.1 In this Decision Instrument, unless the context otherwise suggests:

"0818 Fixed Voice Call Origination" or "0818 FVCO" means FVCO for calls to 0818 numbers;

"0818 FVCO Rate" means the per minute charge levied for 1800 FVCO;

"0818 number" shall have the same meaning as set out in the Numbering Conditions of Use;

"0818 Termination" means the provision of a wholesale call termination service to other Undertakings by which incoming voice calls are handed over for termination to 0818 numbers;

"**0818 Termination Rate**" means a rate associated with the provision of 0818 Termination and is a rate other than the Regulated FTR;

"1800 Fixed Voice Call Origination" or "1800 FVCO" means FVCO for calls to 1800 numbers;

"1800 FVCO Rate" means the per minute charge levied for 1800 FVCO;

"1800 number" shall have the same meaning as set out in the Numbering Conditions of Use;

"Access Regulations" means the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011), as may be amended from time to time or replaced with equivalent effect;

"Authorisation Regulations" means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011), as may be amended from time to time or replaced with equivalent effect;

"BEREC" means the Body of European Regulators for Electronic Communications, as established pursuant to Regulation (EC) No. 1211/2009 of the European Parliament and of the Council of 25 November 2009;

"BU LRAIC+ FVCO Model" means a bottom-up model based on the LRAIC+ of an efficient operator and in the context of this Decision Instrument is the bottom up economic/engineering model of an efficient network used to determine the LRAIC+ associated with the supply of FVCO which is more particularly described at Chapter 6 of ComReg Decision D02/20;

"Communications Regulation Act 2002 (as amended)" means the Communications Regulation Act 2002 (No. 20 of 2002), as amended;

"ComReg" means the Commission for Communications Regulation, established under Section 6 of the Communications Regulation Act 2002 (as amended);

“ComReg Decision D15/18” means ComReg Document No. 18/106, entitled “*Review of Non-Geographic Numbers Response to Consultation 18/65 and Decision*”, dated 03 December 2018;

“ComReg Decision D11/19” means ComReg Document No. 19/48, entitled “*Price control obligations for fixed and mobile call termination rates*”, dated 23 May 2019;

“ComReg Decision D02/20” means ComReg Document No. 20/04R, entitled “Response to Consultation and Decision - Access to Non-Geographic Numbers: Imposition of price control and transparency obligations, dated 16 January 2020;

“ComReg Document No. 18/65” means ComReg Document No. 18/65, entitled *“Response to Consultation - Review of Non-Geographic Numbers”*, dated 11 July 2018;

“ComReg Document No. 19/46” means ComReg Document No. 19/46, entitled ***“****Response to Consultation, Further Consultation and Draft Decision: Access to Non-Geographic Numbers: Imposition of price control and transparency obligations”* dated 22 May 2019;

“Decision Instrument” means this decision instrument which is made pursuant to *inter alia* Regulations 6, 8, 9, 13 and 18 of the Access Regulations and Regulation 23 and 30 of the Universal Service Regulations;

“Effective Date” means the date set out in Section 7 of this Decision Instrument;

“End-user” shall have the same meaning as under Regulation 2 of the Framework Regulations, as may be amended from time to time. For the avoidance of doubt, End-user(s) shall be deemed to include any natural or legal person who facilitates or intends to facilitate the provision of public communications networks or publicly available electronic communications services to other End-users and who is not acting as an Undertaking;

“Fixed Voice Call Origination” or **“FVCO”** means a wholesale service whereby voice calls originating at a fixed location of an End-user are conveyed and routed through any switching stages (or equivalent, regardless of underlying technology) up to a Point of Handover nominated by an Undertaking seeking access to this service for onward conveyance and routing;

“Framework Regulations” means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011), as may be amended from time to time or replaced with equivalent effect;

“Interconnection” shall have the same meaning as under Regulation 2 of the Access Regulations;

“Long Run Average Incremental Cost plus” or **“LRAIC+”** means the average efficiently incurred directly attributable variable and fixed costs, plus an appropriate apportionment of joint and common costs;

“Non-geographic number” or **“NGN”** shall have the same meaning as under Regulation 2 of the Access Regulations;

“Numbering Conditions of Use” means the set of rules under which the Irish national numbering scheme is managed and administered as set out in the document entitled *Numbering Conditions of Use and Application Process, ComReg 15/136R1,* as may be amended by ComReg from time to time or replaced with equivalent effect;

“Point of Handover” means the physical point at which two networks are interconnected to allow traffic between these networks;

“Regulated FTR” means the wholesale maximum fixed termination rate imposed pursuant to ComReg Decision D11/19 as may be amended from time to time or replaced with equivalent effect by the setting of an alternative rate such as the single maximum Union wide fixed voice termination rate set in accordance with Article 75 of the European Electronic Communications Code (EU) 2018/1972;

“Relevant Undertaking” means an Undertaking that offers 1800 FVCO or 0818 FVCO and has the ability to set a 1800 FVCO Rate or a 0818 FVCO Rate as listed at Appendix 1 of this Decision Instrument;

“Terminating Operator” means an Undertaking providing 0818 Termination;

“Undertaking(s)” shall have the same meaning as under Regulation 2 of the Framework Regulations;

“Universal Service Regulations” means the European Communities (Electronic Communications Networks and Services) (Universal Service and Users’ Rights) Regulations 2011 (S.I. No. 337 of 2011), as may be amended from time to time or replaced with equivalent effect.

3 SCOPE AND APPLICATION

3.1 This Decision Instrument applies to any Relevant Undertaking as listed at Appendix 1 to this Decision Instrument.

3.2 This Decision Instrument is binding on each such Relevant Undertaking in the manner now set out below and each such Relevant Undertaking shall comply with this Decision Instrument to the extent that it applies to that Relevant Undertaking.

3.3 This Decision Instrument, pursuant to Regulations 6, 8, 9, 13 and 18 of the Access Regulations and Regulation 23 and Regulation 30 of the Universal Service Regulations imposes certain obligations on Relevant Undertakings as more particularly set out in Section 4 of this Decision Instrument.

PART II - OBLIGATIONS (SECTION 4 OF THE DECISION INSTRUMENT)

4 OBLIGATIONS

4.1 ComReg is imposing certain obligations on each Relevant Undertaking in accordance with and pursuant to Regulations 6, 8, 9, 13 and 18 of the Access Regulations and Regulations 23 and 30 of the Universal Service Regulations, as detailed further in Sections 4.2 to 4.10 of this Decision Instrument.

4.2 Pursuant to Regulations 8, 13 and 18 of the Access Regulations, each Relevant Undertaking is subject to a price control obligation in relation to the provision of 1800 FVCO or 0818 FVCO.

4.3 Without prejudice to the generality of section 4.2 of this Decision Instrument, each Relevant Undertaking is subject to a cost orientation obligation in relation to the provision of 1800 FVCO. Each Relevant Undertaking is hereby directed to ensure that its 1800 FVCO Rate(s) are set in accordance with a LRAIC+ costing methodology.

4.4 Without prejudice to the generality of section 4.3 of this Decision Instrument, pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 13 of the Access Regulations, each Relevant Undertaking shall ensure that from **1 May 2020**, its 1800 FVCO Rate(s) are no more than the relevant BU LRAIC+ FVCO Rate, derived from the BU LRAIC+ FVCO Model, which are set out in the Table below.

Dates	Maximum 1800 FVCO Rate
1 May 2020 to 31 December 2020	0.873 cent/minute
1 January 2021 to 31 December 2021	0.918 cent/minute
1 January 2022 to 31 December 2022	0.961 cent/minute
1 January 2023 to 31 December 2023	1.000 cent/minute
1 January 2023 to 31 December 2024	1.043 cent/minute

4.5 Pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 13 of the Access Regulations, each Relevant Undertaking shall not impose a charge in relation to the provision of 0818 FVCO other than in the circumstances provided for in section 4.6 below.

4.6 Pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 13 of the Access Regulations, where any Relevant Undertaking is charged a 0818 Termination Rate that is in excess of the Regulated FTR, that Relevant Undertaking may charge the 0818 Terminating Operator a 0818 FVCO Rate that is no greater than the difference between that 0818 Termination Rate and the Regulated FTR.

4.7 Without prejudice to the generality of section 4.2 of this Decision Instrument pursuant to Regulations 8, 13 and 18 of the Access Regulations, each Relevant Undertaking shall ensure that it recovers no more than its actually incurred costs (adjusted for efficiency) plus a reasonable rate of return associated with the provision of 1800 FVCO or 0818 FVCO. For the avoidance of doubt, where the Relevant Undertaking considers that it has not recovered such costs it may make a submission to ComReg setting out the basis for any under recovery for ComReg's assessment.

4.8 Pursuant to Regulation 18 of the Access Regulations and in accordance with Regulations 8 and 9 of the Access Regulations each Relevant Undertaking shall be subject to an obligation of transparency in respect of 1800 FVCO Rates and 0818 FVCO Rates with associated terms and conditions.

4.9 Without prejudice to the generality of section 4.8 above, each Relevant Undertaking shall publish on its website on **1 May 2020** and thereafter keep updated its 1800 FVCO Rates and 0818 FVCO Rates with associated terms and conditions.

4.10 Pursuant to Regulations 9, 13 and 18 of the Access Regulations each Relevant Undertaking shall ensure that wholesale invoices shall be sufficiently disaggregated, detailed and clearly presented so that an Undertaking can reconcile invoices to the published 1800 FVCO Rates and 0818 FVCO Rates.

PART III – MAINTENANCE OF OBLIGATIONS AND EFFECTIVE DATE (SECTIONS 5 TO 6 OF THE DECISION INSTRUMENT)

5 STATUTORY POWERS NOT AFFECTED

5.1 Nothing in this Decision Instrument shall operate to limit ComReg in the exercise and performance of its statutory powers or duties conferred on it from time to time under any applicable law (in force prior to or after the Effective Date of this Decision Instrument).

6 MAINTENANCE OF OBLIGATIONS

6.1 Unless expressly stated otherwise in this Decision Instrument, all obligations and requirements contained in decision instruments, decision notices and directions made by ComReg applying to each Relevant Undertaking and in force immediately prior to the Effective Date of this Decision Instrument, are continued in force by this Decision Instrument and each Relevant Undertaking shall comply with same.

6.2 If any section, clause or provision or portion thereof contained in this Decision Instrument is found to be invalid or prohibited by the Constitution, by any other law or judged by a court to be unlawful, void or unenforceable, that section, clause or provision or portion thereof shall, to the extent required, be severed from this Decision Instrument and rendered ineffective as far as possible without modifying the remaining section(s), clause(s) or provision(s) or portion thereof of this Decision Instrument, and shall not in any way affect the validity or enforcement of this Decision Instrument.

7 EFFECTIVE DATE

7.1 The Effective Date of this Decision Instrument shall be the date of its publication and notification to each Relevant Undertaking and it shall remain in force until further notice by ComReg.

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GARRETT BLANEY

CHAIRPERSON

THE COMMISSION FOR COMMUNICATIONS REGULATION

THE 16 DAY OF JANUARY 2020

APPENDIX 1 – RELEVANT UNDERTAKINGS

A1. This Decision Instrument applies to each of the following Relevant Undertakings individually (and not collectively) in respect of activities falling within the scope section 4 of this Decision Instrument. Furthermore, this Decision Instrument is binding upon each such Relevant Undertaking in the manner now set out below and each such Undertaking shall comply with this Decision Instrument to the extent that it applies to that Relevant Undertaking. This list may be amended by ComReg from time to time.

(i) Airspeed Communications Unlimited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(ii) Blue Face Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(iii) BT Communications Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(iv) Colt Technology Services Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(v) Conduit Enterprises Limited and its subsidiaries, and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(vi) Dialoga Servicios Interactivos SA and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(vii) Eircom Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(viii) Equant Network Services International Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(ix) Finarea SA and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors,

(x) Goldfish Telecom Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xi) IFA Telecom and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xii) Imagine Communications Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xiii) Intellicom Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xiv) In2com Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xv) Internet Protocol Telecom Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xvi) Magnet Networks Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xvii) Magrathea Telecommunications (Ireland) Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xviii) Minutebuyer Corporate Services Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xix) Modeva Networks Unlimited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xx) Oxygen8 Communications Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxi) Phone Pulse Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxii) PlanNet 21 Communications Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns, which for the avoidance of doubt includes 3Play Plus Limited;

(xxiii) Pure Telecom Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxiv) Procom Voice Solutions Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxv) Telcom Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns, which for the avoidance of doubt includes Agility Communications Limited;

(xxvi) TSFY Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxvii) Verizon Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxviii) Viatel Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxix) Virgin Media Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxx) Vodafone Ireland Limited and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;

(xxxi) Voxbone SA and its subsidiaries, and any Undertaking which it owns or controls and any Undertaking which owns or controls it, and its successors, affiliates and assigns;