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Rialáil Cumarsáide
Commission for
Communications Regulation

Call for Inputs

Migration from Legacy Infrastructure to Modern Infrastructure

Call for Inputs

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Content

Chapter	Page
1 Introduction.....	4
2 Wholesale Principles.....	9
2.1 Wholesale Migration.....	10
2.2 Wholesale Replicability	10
3 Retail Principles.....	13
3.1 End user Access to Universal Service	13
3.2 End user rights should be upheld during the Migration from Legacy Infrastructure.....	14
4 Transition Framework Principles	17
4.1 Framework Phases	17
4.1.1 Enablement Phase	17
4.1.2 Migration and Switch-off Phase.....	18
4.1.3 Decommission Phase.....	19
4.2 Premises capable of ordering an ACP	19
5 Eircom’s White Paper “Copper switch-off: Leaving a legacy for the Future”	20
6 Additional Matters.....	23
7 Next Steps.....	24
Annex: 1 Questions	25
Annex: 2 Eircom White Paper “Copper Switch-off: Leaving a legacy for the Future”	27

Chapter 1

1 Introduction

- 1.1 The Commission for Communications Regulation (**ComReg**) is the statutory body responsible for the regulation of the electronic communications sector (telecommunications, radio-communications and broadcasting transmission) in Ireland.
- 1.2 On 4 March 2021, Eircom shared with ComReg, and also published on its website, a white paper entitled “*Copper switch-off: Leaving a legacy for the Future*”¹ in which Eircom signals its intent to migrate services from copper-based to fibre-based networks.
- 1.3 On 9 April 2021, ComReg published Information Notice 21/35² welcoming Eircom’s initiative and confirming that ComReg would engage with Eircom and other stakeholders on this important matter and would consult publicly in due course. On 4 May 2021, ComReg published Information Notice 21/43³ outlining its approach to engaging with Eircom and other stakeholders, summarised as follows:
 - (a) By facilitating bi-lateral stakeholder discussions with ComReg;
 - (b) By publishing a Call for Inputs whereby interested parties could express their views in writing;
 - (c) Having considered the responses to the Call for Inputs, ComReg will issue a public consultation with more detailed proposals as to how the transition from copper-based to fibre-based networks and process should be conducted; and
 - (d) Having considered the responses to the public consultation, ComReg would publish its decision.

¹ https://www.openeir.ie/wp-content/uploads/2021/03/White-paper_Leaving-a-Legacy.pdf.

² ComReg - Eircom Correspondence on Copper Switch Off, Information Notice, ComReg 21/35, dated 9 April 2021.

³ Consultation Process regarding the Transition from Regulated Copper Products and Services, Information Notice, ComReg 21/43, dated 4 May 2021.

- 1.4 The process for migrating services from copper-based to fibre-based networks is referred throughout this Call for Inputs as the '**Migration from Legacy Infrastructure**'. The upgraded network infrastructure substituting the replaced elements of the legacy infrastructure is referred, in general, throughout this Call for Inputs as the '**Modern Infrastructure**'.⁴
- 1.5 Eircom has been designated as having Significant Market Power ('**SMP**') in the markets for Wholesale Local Access and Wholesale Central Access,⁵ Fixed Access and Call Origination⁶ and Wholesale High Quality Access.⁷ Under the obligations imposed on it following its designation as SMP operator on those markets, Eircom is required not to withdraw access to facilities already granted without the prior approval of ComReg and in accordance with terms and conditions as may be determined by ComReg.
- 1.6 Eircom is currently designated as a Universal Service Provider ('**USP**') and is required to meet reasonable requests for connections to a public telecommunications network that are capable of supporting a range of services including voice and functional Internet access. In Decision D05/21⁸ ComReg decided to maintain an AFL USO designation for an interim period of a maximum of four months (from 1 July 2021 until 30 October 2021) or until ComReg makes a final decision on the future need for a designation of a USP for AFL USO, having considered the responses to the extant AFL USO Consultation (Document No. 21/66)⁹, whichever is the earlier.
- 1.7 In addition, Article 81(1) of the European Electronic Communications Code ('**EECC**'),¹⁰ which has yet to be transposed in Irish law, requires undertakings

⁴ Modern Infrastructure such as Very High Capacity Networks ('**VHCNs**'). A VHCN is defined, in Article 2(2) of the European Electronic Communications Code, as "*either an electronic communications network which consists wholly of optical fibre elements at least up to the distribution point at the serving location, or an electronic communications network which is capable of delivering, under usual peak-time conditions, similar network performance in terms of available downlink and uplink bandwidth, resilience, error-related parameters, and latency and its variation*"

⁵ "Market Review Wholesale Local Access (WLA) provided at a Fixed Location Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products", ComReg Document 18/94, Decision D10/18, 19 November 2018, Appendix: 20 Wholesale Local Access: Decision Instrument, paragraph 7.7(ii); Appendix: 21 Wholesale Central Access: Decision Instrument, paragraph 7.5(ii).

⁶ "Market Review Wholesale Fixed Voice Call Origination and Transit Markets", ComReg Document 15/82, Decision D05/15, 24 July 2015, Appendix H Decision Instrument paragraph 7.5(ii).

⁷ "Market Analysis – Wholesale High Quality Access at a Fixed Location", ComReg Document 20/06, Decision D03/20, 24 January 2020, Annex 8: Decision Instrument paragraphs 7.4(ii) and 14.5(ii).

⁸ Universal Service Requirements Provision of access at a fixed location (AFL USO): Interim Designation, ComReg D05/21, dated 30 June 2021.

⁹ Universal Service Requirements Provision of access at a fixed location (AFL USO): Interim designation, Document No. 21/66, dated 22 June 2021.

¹⁰ Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (L 321/165), dated 17 December 2018.

which have been designated as having SMP in one or several relevant markets to notify the National Regulatory Authority ('**NRA**') in advance and in a timely manner when they plan to decommission or replace with a new infrastructure parts of the network, including legacy infrastructure necessary to operate a copper network.

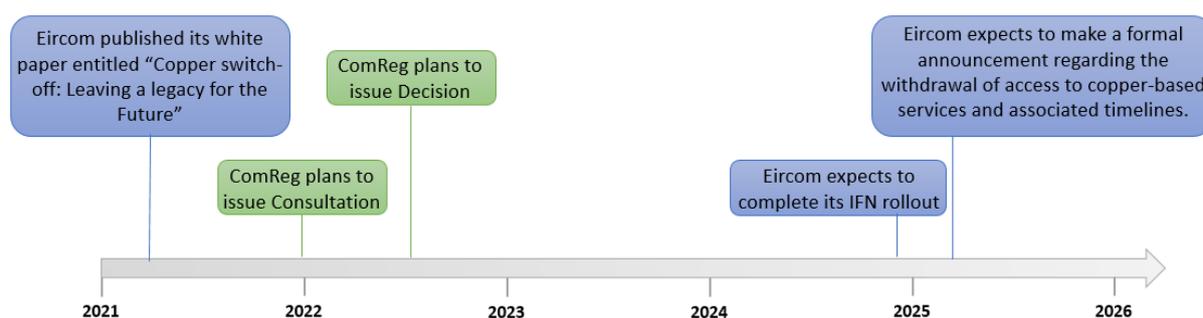
- 1.8 Article 81(2) of the EECC states that the NRA shall ensure that the decommissioning or replacement process includes a transparent timetable and conditions, including an appropriate notice period for transition. With regard to assets which are proposed for decommissioning or replacement, the NRA may withdraw the obligations after having ascertained that the access provider:
- (a) has established the appropriate conditions for migration, including making available an alternative access product of at least comparable quality as was available using the legacy infrastructure enabling the Access Seekers to reach the same end users; and
 - (b) has complied with the conditions and process notified to the NRA in accordance with Article 81 of the EECC.

The procedures referred to in Article 23 (Consultation and transparency mechanism), Article 32 (Consolidating the internal market for electronic communications) and Article 33 (Procedure for the consistent application of remedies) of the EECC apply in respect of the withdrawal of obligations, as further described below.

- 1.9 Under Article 23, prior to adopting a measure which impacts on a relevant market, an NRA is required to give interested parties the opportunity to comment on the draft measure within a reasonable period. The results of the consultation are to be made public subject to rules on confidentiality. Following completion of that public consultation, the proposed measure is to be notified in draft to the Commission, to BEREC and to the national regulatory authorities in other Member States in accordance with the process and timelines set out in Article 32. Article 32 also details the process which applies where the Commission has indicated to national regulatory authority that it considers that the draft measure would create a barrier to the internal market or if it has serious doubts as to its compatibility with Union law. Article 33 sets out the equivalent process and timelines where an intended measure aims to impose, amend or withdraw an obligation on an undertaking, and the Commission notifies the national regulatory authority that the draft measure would create a barrier to the internal market or of its serious doubts as to the compatibility with Union law.
- 1.10 ComReg will reflect the obligations in Article 81 in the framework for Migration from Legacy Infrastructure ('**Framework**').

- 1.11 With the benefit of the responses to the Call for Inputs, subject to the implications of the transposition of the EECC into Irish law (if any), ComReg aims to issue a public consultation in late 2021, with more detailed proposals as to how the transition framework and process should be conducted. While ComReg expects to issue its decision in 2022, at this stage it does not rule out the possibility of a further consultation round in 2022. ComReg will publish the submissions to this Call for Inputs (subject to the protection of any confidential information) on its website in the same timeframe as the Consultation on the proposed framework for Migration from Legacy Infrastructure. The key milestones are depicted in Figure 1.

Figure 1: Key Milestones



- 1.12 ComReg notes that, in its *Leaving a Legacy* paper, Eircom states that "*The current IFN programme is expected to be completed in 2024, and open eir will make a formal announcement by 2025 regarding the withdrawal of access to these copper-based services and associated timelines.*" As outlined in paragraph 1.11 above, ComReg expects to issue its decision in 2022, well in advance of Eircom's planned announcement in 2025.
- 1.13 Amongst ComReg's aims are to encourage the transition; to ensure that the decommissioning or replacement process has a transparent timescale and conditions including, *inter alia*, an appropriate period of notice for the transition; to ensure the availability of Alternative Comparable Products ('**ACPs**') of at least comparable quality providing access to the upgraded network infrastructure substituting the replaced elements if necessary, to safeguard competition and the rights of end users. Another key concern in this respect is to ensure that obligations on all operators of electronic communications networks and services relating to availability of the service to end users, access to emergency services, access for disabled end users and provisions including those related to customer contracts are upheld during and following transition.
- 1.14 This document seeks interested parties' views on, *inter alia*, the principles, processes and notification procedures which ought to be followed by an SMP operator when seeking to implement a Migration from Legacy Infrastructure initiative.

- 1.15 A number of questions are posed throughout this Call for Inputs (and compiled in Annex 1). ComReg would welcome views on these and any relevant matters (including evidence and reasoning).
- 1.16 The document references previous publications by ComReg on this topic. In particular readers are referred to ComReg Call for Inputs 16/01, dated 6 January 2016, ComReg Information Notice 17/05, dated 19 January 2017, ComReg Information Notice 21/35, dated 9 April 2021 and ComReg Information Notice 21/43, dated 4 May 2021.
- 1.17 Chapters 2 to 4 suggest possible principles for wholesale and retail markets for setting out the rules to be followed by Eircom as part of this process. These reflect principles already articulated by ComReg in ComReg Call for Inputs 16/01 referred to above. We are interested in respondent's views as to whether these are still appropriate or if they should be revised or updated given relevant evolutions in this space since 2016.
- 1.18 This document is structured as follows:
- (a) Chapter 2 discusses principles for wholesale markets; Chapter 3 addresses principles at the retail level. The latter includes matters relating mainly to universal service as well as broader consumer protection;
 - (b) Chapter 4 describes possible principles for a framework for Migration from Legacy Infrastructure to Modern Infrastructure;
 - (c) Chapter 5 considers the specifics of Eircom's white paper "Copper switch-off: Leaving a legacy for the Future", although references to this paper are made throughout the document;
 - (d) Chapter 6 provide respondents with an opportunity to raise additional matters in this Call for Inputs; and
 - (e) Chapter 7 sets out the process for submitting comments in response to this Call for Inputs.

Chapter 2

2 Wholesale Principles

- 2.1 In January 2016,¹¹ in the context of a possible request for approval by Eircom to withdraw access to existing facilities for copper switch-off in the National Broadband Plan ('NBP') intervention area and potential switch off in areas not covered by the NBP, ComReg set out proposed wholesale high-level principles for consideration. The wholesale principles outlined in this chapter are very similar to the principles proposed in 2016 and ComReg wishes to assess respondents' views as to their relevance today.
- 2.2 On 21 July 2016, Eircom wrote to ComReg requesting prior approval for the retirement of legacy networks and services, given its rollout of Next Generation Access ('NGA') networks and services, in particular Fibre to the Cabinet ('FTTC') and Fibre to the Home ('FTTH'), and the widespread uptake of those services.
- 2.3 On 22 September 2016, ComReg wrote to Eircom stating that ComReg's consent would likely be required but the precise regulatory implications would depend on the particular regulatory obligations that were applicable at the time. In addition, ComReg requested Eircom to undertake an analysis and an impact assessment, including plans and timelines, of the withdrawal of copper-based services. The relevant correspondence was published on ComReg's website.¹²
- 2.4 Eircom did not proceed with its planned retirement of legacy networks and services at that time and ComReg did not receive the requested impact assessment.
- 2.5 On 4 March 2021 Eircom published on its website, and sent to ComReg, a white paper entitled "*Copper switch-off: Leaving a legacy for the Future*"¹³ in which Eircom signals its intent to migrate services from copper-based to fibre-based networks. This proposal envisages a three-stage approach (see Chapter 5 for more details) where Stage 3 includes a tollgate on which "[the contract of] *end users who have not acted will be terminated on the cessation date*".

¹¹ "Transition from Eir's copper network: Proposed principles and notification procedures", Call for Inputs, ComReg 16/01, dated 6 January 2016.

¹² "Retirement of Legacy Networks and services (including correspondence between Eircom and ComReg)", Information Notice, Reference ComReg 17/05, 19 January 2017.

¹³ https://www.openeir.ie/wp-content/uploads/2021/03/White-paper_Leaving-a-Legacy.pdf

- 2.6 Migration from Legacy Infrastructure to Modern Infrastructure will likely result in the withdrawal, switch-off and, ultimately, the decommissioning of Legacy Infrastructure-based services. In considering the appropriate framework for Migration from Legacy Infrastructure to Modern Infrastructure, ComReg's objective is to create the conditions for a successful transition while ensuring that migration does not adversely affect wholesale and retail competition while being mindful of not inhibiting the retirement of that network, once alternative comparable services are available.
- 2.7 For the purpose of devising an appropriate Framework, ComReg envisages two key principles: first, that Migration from Legacy Infrastructure to Modern Infrastructure at the wholesale level must be enabled and second, that there must be in place ACPs available to Access Seekers to enable them migrate their end users from Legacy Infrastructure-based services.

2.1 Wholesale Migration

- 2.8 ComReg proposes that a key principle guiding the Framework is that Access Seekers are able to migrate their end users from the existing Legacy Infrastructure to Modern Infrastructure with minimum disruption and maximum certainty (in relation to conditions, process, timelines and prices).
- 2.9 In order to achieve a smooth transition, ComReg considers that particular attention must be given to ensuring that appropriate processes, procedures and necessary information are made available by Eircom to Access Seekers in sufficient time ahead of the migration, such that, if necessary, the migration of large numbers of end users (bulk migration) can be planned in advance and project managed by the Access Seekers concerned, ensuring that disruption and risk of service loss for end users and Access Seekers is kept to a minimum.
- 2.10 ComReg envisages that the migration process would cater for migration from Eircom's Legacy Infrastructure to Eircom's Modern Infrastructure and, if appropriate or relevant, migration from Eircom's Legacy Infrastructure to another wholesale operator's Modern Infrastructure.

2.2 Wholesale Replicability

- 2.11 ComReg sees as another key principle that Eircom should be required prior to withdrawing access to Legacy Infrastructure-based services to make available a suite of ACPs provided over the Modern Infrastructure (as agreed with ComReg) which will provide alternative products to Access Seekers of at least comparable quality and comparable price to the Legacy Infrastructure-based services. "Comparable quality", ComReg would suggest, means providing access to the upgraded network infrastructure to at least the same degree of functionality and service quality, with appropriate guarantees regarding non-discrimination,

oversight and governance where necessary as the regulated Legacy Infrastructure-based services. “Comparable price” may not mean equivalent prices, but rather that there is a differential or margin between prices for Legacy Infrastructure-based services and the price of ACPs provided over the Modern Infrastructure.

- 2.12 An important difference between 2016 and 2021 has been the emergence of fibre-based network competition in the form of SIRO and, prospectively, NBI. We are interested in respondents’ view as to the implications of this development for this principle.
- 2.13 As in 2016, ComReg would see as a guiding principle that Access Seekers are able to switch to the replacement wholesale inputs without having to incur significant additional cost or make significant changes to, *inter alia*, their order handling; provisioning; and billing systems. In general, the transition to these replacement wholesale inputs should be seamless and not involve unnecessary delay or disruption for Retail Service Providers (**‘RSPs’**) and wholesale operators.
- 2.14 ComReg would also see that it would be necessary to ensure that access to ACPs over the Modern Infrastructure and information relating to the comparability of the quality of products as was available over Legacy Infrastructure is made available by Eircom or possibly other operators, to all Access Seekers¹⁴ sufficiently in advance of any Migration from Legacy Infrastructure.
- 2.15 The Modern Infrastructure could consist of:
- (a) Eircom’s FTTP network (**‘Option 1’**);
 - (b) Option 1 + National Broadband Ireland (**‘NBI’**) FTTP network (**‘Option 2’**);
 - (c) Option 2 + SIRO FTTP network (**‘Option 3’**).
 - (d) Option 3 + any additional wholesale FTTP networks (**‘Option 4’**)
- 2.16 ComReg notes that in its *Leaving a Legacy* paper, Eircom proposes to consider premises passed by Eircom and NBI’s networks in its proposed Stage 1 (Consumer Led Migration) and to consider premises passed by Eircom, NBI and SIRO’s networks in Stage 2 (Incentivising exchange area led migration).

¹⁴ Communicated at the same time, the same content and level of detail.

- Q.1 Do you agree with the wholesale migration and replicability principles set out above in section 2.1 to 2.2? Are there any other principles in this respect that should be considered? Please set out clearly the reasons for your response and any supporting evidence.
- Q.2 What principles should guide ComReg in establishing the existence or not of ACP as described in section 2.2 above? Please set out clearly the reasons for your response and any supporting evidence.

Chapter 3

3 Retail Principles

- 3.1 As referenced in paragraph 2.1 above, in January 2016, ComReg proposed high-level principles for consideration in the event that Eircom were to submit a copper switch-off proposal to ComReg. Again, the retail principles outlined in this chapter are very similar to the principles proposed in 2016 and ComReg wishes to assess respondents' views as to their relevance today.
- 3.2 Migration from Legacy to Modern Infrastructure should not in any way adversely affect end users and an important aspect of the Framework will be to ensure that the rights of end users are maintained and protected. The purpose of this Chapter is to review the principles that may be relevant for ComReg to consider when assessing possible implications of Migration from Legacy Infrastructure on end users.
- 3.3 At this time ComReg identifies two important aspects, namely end users' access to Universal Service and end user rights must be upheld during the Migration from Legacy Infrastructure.

3.1 End user Access to Universal Service

- 3.4 Eircom is currently designated as the USP pursuant to Regulation 3 of the Universal Service Regulations¹⁵ and subject to a Universal Service Obligation ('**USO**') consisting in an obligation to provide access at a fixed location to an electronic communications network and voice services¹⁶ ('**AFL USO**').¹⁷ In Decision D05/21 ComReg decided to maintain an AFL USO designation for an interim period of a maximum of 4 months (from 1 July 2021 until 30 October 2021) or until the date on which ComReg has made a final decision on the future need for a designation of a USP for AFL USO, having considered the responses

¹⁵ European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (S.I. 337 of 2011) (**Universal Service Regulations**).

¹⁶ Eircom is required to, inter alia, satisfy any reasonable request to provide at a fixed location connection to a public communications network; ensure that such connection is capable of supporting voice, facsimile and data communications at data rates that are sufficient to permit functional internet access ('**FIA**'); and satisfy any reasonable request for the provision of a publicly available telephone service over the network which allows for originating and receiving national and international calls.

¹⁷ [Universal Service Requirements Provision of access at a fixed location \(AFL USO\) | Commission for Communications Regulation \(comreg.ie\)](#), dated 30 June 2021.

to the extant AFL USO Consultation (ComReg Document No. 21/66)¹⁸, whichever is the earlier.

- 3.5 The future of AFL USO in the next two years or beyond has yet to be decided. ComReg proposes as a key principle of the Framework that any AFL USO continues unaffected by any migration and that citizens' rights to basic telephony universal services at fixed locations in Ireland are ensured during a Migration from Legacy Infrastructure; *inter alia* by assuring that end users must continue to have the ability to access relevant universal services at an affordable price and appropriate quality, as relevant.
- 3.6 Where Migration from Legacy Infrastructure is proposed, end users must continue to have adequate alternative methods of accessing universal services.

3.2 End user rights¹⁹ should be upheld during the Migration from Legacy Infrastructure

- 3.7 ComReg proposes as another key principle of the Framework that (to the maximum extent possible), end users are not adversely affected in relation to their access and use of electronic communications access and services by the Migration from Legacy Infrastructure. ComReg sees this principle to mean, first, that as a corollary of the principle of Wholesale Replicability, Service Providers ('SPs') would normally wish to offer end users comparable services at comparable prices on the Modern Infrastructure. Second, end users need to be treated reasonably and appropriately and in accordance with their rights during any migration.
- 3.8 Periodic communications to end users will be essential in order to provide the requisite notification of the Migration from Legacy Infrastructure.
- 3.9 End users ought to be kept fully informed by their retail providers of impending changes to their services (if applicable), in accordance with applicable contractual requirements and of possible choices as regards services as appropriate.

¹⁸ [Universal Service Requirements Provision of access at a fixed location \(AFL USO\) | Commission for Communications Regulation \(comreg.ie\)](#)

¹⁹ In accordance with applicable legislation including the Universal Service Regulation, the Consumer Information Regulations and the EECC.

- 3.10 End users must be informed of proposed technology changes and the associated impact on services²⁰ (including any associated costs) and the impact on service should power outages occur. The communications should also properly explain to end users any differences in the experience they can expect in using any replacement services. Additionally, communication regarding any changes required to customer premises equipment and related install and set-up details will need to be provided to end users so that they can make informed choices.
- 3.11 Importantly, end users must be notified²¹ about any changes to the contractual terms and conditions that would apply to the replacement services. Where legacy services are withdrawn and ACPs are offered, this may involve a change in the end user's contract in which case the end user will have the right to exit its existing contract without penalty and switch to another provider. Consumers must give informed consent to any new contracts, as relevant.²² While end users have the right for universal services at a fixed location, they do not have the choice to retain legacy services indefinitely if there are ACPs available to them on a Modern Infrastructure. However, other rights, for example, those related to retention of numbers, comparable service and installation appointments must also be upheld.
- 3.12 In its *Leaving a Legacy* paper, Eircom posit a communication strategy across the three stages of the proposed transition whereby "*Continued information across the three stages of transition will help all retailers communicate ... to their end users*". This includes the suggestion that "*When 95% of all premises within an open eir exchange area are capable of ordering fibre, open eir will inform the remaining consumer and small business copper customers in that exchange area who are passed by FTTP, that their existing copper services will be withdrawn in 12 months' time*". ComReg is interested in respondents' views on the appropriate communications framework. At this stage it appears to ComReg that communications with end users would first and foremost be conducted via their SP and Eircom would ensure that adequate prior notice (i) is provided to SPs; and (ii) is provided to SPs in respect of any proposed 'Stop Sell' date. It may be that a coordinated industry-led process would be a useful component of this communication.

²⁰ Monitored alarms; remote health services etc.

²¹ In accordance with Regulation 14 of the Universal Service Regulations.

²² For example, in accordance with the Universal Service Regulations, the European Union (Consumer Information, Cancellation and other Rights) Regulations 2013 (S.I. No. 484 of 2013) (Consumer Information and Cancellation Regulations).

- 3.13 ComReg notes that, in its *Leaving a Legacy* paper, Eircom states that “*For vulnerable users reliant on special services for medical emergency and users providing critical national infrastructure, more time may be needed to identify suitable replacement services*”

Q.3 What general retail (end user) principles do you believe are required in protecting end user interests during any Migration from Legacy Infrastructure? Please set out clearly the reasons and evidence for your response.

Q.4 What matters relating to end user communications should be considered in the transition from Legacy to Modern Infrastructure?

Q.5 What are the matters relating to universal service that you believe should be considered during a transition from Legacy to Modern Infrastructure? Please set out clearly the reasons and evidence for your response.

Chapter 4

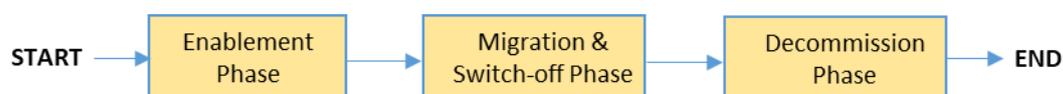
4 Transition Framework Principles

- 4.1 The high-level principles set out in ComReg's Call for Inputs 16/01 in January 2016 included principles for transition. The transition principles outlined in this chapter builds on the principles proposed in 2016 and ComReg wishes to assess respondents' views as to their relevance today.
- 4.2 As outlined in paragraph 1.8 above, Article 81(2) of the EECC states that ComReg shall ensure that the decommissioning or replacement process for services and infrastructure includes a transparent timetable and conditions, including an appropriate notice period for transition, and establishes the availability of alternative products of at least comparable quality providing access to the upgraded network infrastructure, substituting the replaced elements if necessary to safeguard competition and the rights of end users.
- 4.3 In order to achieve the Wholesale and Retail principles outlined in Chapters 2 and 3 above respectively, ComReg would propose that a Framework is embodied in a regulatory guidance or decision setting out the steps, and associated requirements, to be complied with as part of the Migration from Legacy Infrastructure.

4.1 Framework Phases

- 4.4 In order to implement the requirements of Article 81 EECC, ComReg envisages that a Framework could consist of three phases as shown in Figure 2 below.

Figure 2: Framework Phases



4.1.1 Enablement Phase

- 4.5 An Enablement Phase would ensure the wholesale principles outlined above, are in place and adhered to. An Establishment Phase could include ensuring that Eircom provides Access Seekers with the opportunity to successfully migrate trial end users to ACPs on the Modern Infrastructure.

- 4.6 The ComReg Framework would set out the required information to be provided by Eircom to ComReg in order for the Enablement Phase to commence, including, the anticipated timelines for key stages of the Enablement Phase including design, test, implementation and trial.
- 4.7 At the end of an Enablement Phase, Eircom, and Access Seekers would have successfully validated their systems and processes with the end-to-end migration of their trial end users, as appropriate.

4.1.2 Migration and Switch-off Phase

- 4.8 A Migration and Switch-off Phase would be required to ensure that the principles for 'Wholesale Migration', outlined in Chapter 2 above, are adhered to, consistent with the requirement in Article 81(2) EEC that ComReg ensures that Migration from Legacy Infrastructure is conducted according to a transparent timetable and conditions, including an appropriate notice period for the transition. It is on this basis that ComReg outlines possible minimum requirements for this phase below.
- 4.9 The Migration and Switch-off Phase would commence when Eircom has completed an Enablement Phase to ComReg's satisfaction and has published a detailed 'Migration & Transition Plan' which would describe, in detail, its proposed mandatory migration approach and the overall timeline to the completion of the migration and switch-off for all legacy exchanges.
- 4.10 In its *Leaving a Legacy* paper Eircom proposes a "Stop Sell" phase whereby there is a cessation of new provides of legacy service. If this is put in place ComReg envisages that it could take place in this phase, once specific criteria and notification requirements prescribed by ComReg are met for the premises in a legacy exchange area.
- 4.11 Article 81(2)(a) requires ComReg to ensure there is an ACP of at least comparable quality as was available using the Legacy Infrastructure to enable the Access Seekers to reach the same end users. Hence, all end users who are accessible via the Legacy Infrastructure are in scope for the Migration from Legacy Infrastructure.
- 4.12 Following a switch-off complete milestone for a legacy exchange area, ComReg may withdraw the obligations to provide services on the legacy infrastructure for that exchange area, after having ascertained that Eircom has complied with such conditions as have been set down by ComReg in the transition Framework.

4.1.3 Decommission Phase

- 4.13 In a Decommission phase, Eircom could decommission the legacy network, that is, put it into a permanently beyond use state in legacy exchange area(s) where ComReg has withdrawn the obligations to provide services on the Legacy Infrastructure.
- 4.14 ComReg notes that the physical removal of the Legacy Infrastructure assets from the network²³ is not referenced in Eircom's *Leaving a Legacy* paper. ComReg are interested in stakeholder views on this matter.

4.2 Premises capable of ordering an ACP

- 4.15 ComReg envisages that during the Migration and Switch-off Phase a premises is considered passed by Modern Infrastructure when an Access Seeker is capable of ordering an ACP and having the ACP installed at the premises within a short time period.
- 4.16 ComReg would see as essential that in the event that Eircom publishes that a premises is capable of ordering an ACP, but subsequently the conditions in paragraph 4.15 are not met, that Eircom would provide a legacy service at that premises until such time as an ACP may be ordered and provisioned successfully.

- | | |
|------|---|
| Q.6 | What is your view on the Framework principles outlined in sections 4.1 and 4.2 above? Are there other aspects that should be considered? |
| Q.7 | Do you agree with the concept of a copper switch-off trial in specified exchanges? |
| Q.8 | What is your view regarding the concept of Stop Sell for legacy services for an exchange area? |
| Q.9 | What criteria and timelines would you consider appropriate in a Migration and Switch-off Phase? |
| Q.10 | What consideration should be given to the costs relating to connecting a premises for FTTP, including for mandatory migration from Legacy Infrastructure? If such costs were to be borne by Eircom, how should such costs be recovered? |
| Q.11 | What consideration should be given to the withdrawal of obligations and related conditions? |

²³ For example, removal of copper cables from Eircom ducts and poles.

Chapter 5

5 Eircom's White Paper "Copper switch-off: Leaving a legacy for the Future"

- 5.1 On 4 March 2021, Eircom shared with ComReg, and published on its website,²⁴ a white paper entitled "*Copper switch-off: Leaving a legacy for the Future*" (refer to Annex 2). In its white paper, Eircom signalled its intent to migrate services from copper-based to fibre-based networks.
- 5.2 On 9 April 2021, ComReg published Information Notice 21/35 welcoming Eircom's initiative and confirming that ComReg would engage with Eircom and other stakeholders on migration from legacy infrastructure and consult publicly in due course.
- 5.3 In summary, Eircom proposes a three-stage transition from copper to fibre services:

Stage 1: Consumer led migration

- 5.4 Where FTTP is available at the premises (i.e. premise passed by Eircom or NBI) Eircom would be allowed to stop selling wholesale copper services when an end user moves premises, changes service or switches SP.²⁵
- 5.5 This first 'Stop Sell' event is implemented at a premises level. The 'Stop Sell' will be progressively applied as premises are added to Eircom's APQ file.
- 5.6 A customer who wishes to stay with their existing SP on copper-based services is free to do so. In circumstances where a copper line is inactive when the fibre is deployed, then that premises will only be eligible for ordering fibre.
- 5.7 Once premises have transitioned to FTTP there will not be an option to migrate backwards to the legacy network.
- 5.8 Within 28 days of premises being able to order fibre in an area, Eircom proposes to provide the home and business owners with information on the benefits of FTTP. It will also provide clear information on the 'Stop Sell' and associated timelines.

²⁴ https://www.openeir.ie/wp-content/uploads/2021/03/White-paper_Leaving-a-Legacy.pdf

²⁵ This approach applies to the consumer and small business mass market only.

Stage 2: Incentivising exchange area led migration

- 5.9 When 75% of all premises within an Eircom exchange area are capable of ordering fibre (Eircom, NBI and SIRO), the second transition stage occurs.
- 5.10 Eircom states that, in light of the increasing costs of maintaining a copper service into the future with a reduced number of end users, Eircom proposes that it should be allowed to increase the wholesale copper only prices for voice and broadband services, up to the entry level FTTP profile speed wholesale price for premises passed by FTTP.²⁶
- 5.11 At this stage, Eircom proposes that the wholesale price of FTTC will remain at the level of prices proposed by Eircom to ComReg on 8 January 2021 and would allow existing FTTC customers to stay with their retail SP in the medium term if desired.²⁷
- 5.12 Eircom proposes that ComReg would determine when 75% of all premises within an Eircom exchange area are capable of ordering fibre.
- 5.13 When an Eircom exchange area reaches the 75% milestone, Eircom will inform operators at least six months in advance of the proposed price increase on existing copper services within that exchange area.

Stage 3: Completing the transition and copper switch-off

- 5.14 When 95% of all premises within an Eircom exchange area are capable of ordering fibre (Eircom, NBI and SIRO), the final transition stage occurs.
- 5.15 As this milestone is achieved, Eircom proposes that the full list of copper access regulatory remedies including those voluntary behaviours offered to ComReg by Eircom, are automatically lifted for the entire exchange area.
- 5.16 In addition, when 95% of all premises within an Eircom exchange area are capable of ordering fibre (Eircom, NBI and SIRO), Eircom would commit that within the next three years, all remaining premises within that exchange area have broadband with speeds greater than 30Mbps made available to them.

²⁶ Example of Wholesale prices as at 01 July 2021:

- SB-WLR PSTN rental = €16.59/month
- FTTH VUA Standalone 150Mbps port rental = €23.50/month.
- FTTH Bitstream Standalone 150Mbps port rental = €29.72/month plus usage = €0.31/month per Mbps

²⁷ Eircom's proposal of 8 January 2021 in relation to FTTC pricing is also included in Eircom's letter of 21 April 2021 which is published here: [ComReg-2165a.pdf](#). Eircom proposed an FTTC VUA port rental price of €20.36/month and a FTTC Bitstream port rental price of €25.27/month plus usage of €0.31/per month per Mbps.

- 5.17 Eircom envisages that the calculation of the stage 3 milestone includes premises where Eircom has been denied access to prepare FTTP, for example multi-dwelling units. Contracts for end users who have not acted will be terminated on the cessation date (unless self-declared to be a vulnerable user or a user providing critical national infrastructure).
- 5.18 Eircom proposes that ComReg determines when 95% of all premises within an Eircom exchange are capable of ordering fibre.
- 5.19 When an Eircom exchange reaches the 95% milestone, Eircom would inform operators at least 12 months in advance, that there will be an Eircom withdrawal of access to copper-based services within that exchange. Any copper lines which have not acted upon will be terminated on the cessation date (unless considered to be a critical user).

Business to businesses market

- 5.20 Eircom proposes an alternative transition from copper to fibre services in the business to business market.
- 5.21 Eircom proposes that these copper-based services are first moved to end-of-sale, and subsequently to end-of-life, on a product-by-product basis nationally rather than on a location-by-location basis. During that time, Eircom's voluntary commitment on its copper-based broadband and voice wholesale prices would remain in place for those services.

- Q.12 In addition to your responses above, what are your views on the context, transition proposal and conclusion presented in Eircom's White paper (Annex 2)?
- Q.13 In your view, what role should pricing signals have in incentivising the migration from legacy services? What are your views on Eircom's proposal on pricing triggers? Please set out clearly the reasons and evidence for your response.
- Q.14 What is your view on Eircom's proposal for differentiated handling of the business to business market?
- Q.15 Eircom proposes that at the 'cessation date', where end users have not acted (i.e. end user did not order a fibre-based service) their legacy service will be terminated (unless self-declared to be a vulnerable user or a user providing critical national infrastructure). Do you think there should be a maximum threshold of users (of legacy services) before Eircom could terminate their legacy services? If so, how might that be calculated?
- Q.16 What consideration should be given to a scenario where a significant number of end users choose not to migrate to an available ACP within the defined notice period?

Chapter 6

6 Additional Matters

- Q.17 What structured stakeholder engagement do you think should be established to address the process of Migration from Legacy Infrastructure to Modern Infrastructure?
- Q.18 Are there matters relating to the objectives of public policy or environmental considerations which ComReg should consider in the context of its consultation process?
- Q.19 Are there additional matters relating to Migration from Legacy Infrastructure not included above which ComReg should consider in the context of its consultation process?

Chapter 7

7 Next Steps

- 7.1 The purpose of this Call for Inputs is for ComReg to obtain views from a range of Industry, end users and external stakeholders on the regulatory framework to be followed by Eircom, as SMP operator, when seeking to decommission (or replace with a new infrastructure) parts of a legacy network and the mandatory Migration from Legacy Infrastructure to Modern Infrastructure. ComReg intends to use this Call for Inputs to inform the framework, which will be subject to a public consultation in late 2021.
- 7.2 ComReg would welcome evidence and views of interested parties and encourages all stakeholders to respond.
- 7.3 As ComReg plans to publish non-confidential versions of respondents' submissions on its website, a respondent should provide confidential and non-confidential versions of its submission.
- 7.4 ComReg welcomes all written responses from stakeholders by 5pm on Tuesday 14 September 2021. It will make the task of analysing responses easier if comments reference the relevant question numbers from this document. In all cases, please provide evidence in support of your views.
- 7.5 Responses must be submitted in written form (post or email) to the following address/email and clearly marked "Submissions to ComReg 21/78":

Commission for Communications Regulation
(Wholesale Products)
One Dockland Central,
1 Guild St.,
North Dock,
Dublin 1.
D01 E4XO
Ireland

Email: products@comreg.ie

Annex: 1 Questions

- Q.1 Do you agree with the wholesale migration and replicability principles set out above in section 2.1 to 2.2? Are there any other principles in this respect that should be considered? Please set out clearly the reasons for your response and any supporting evidence.
- Q.2 What principles should guide ComReg in establishing the existence or not of ACP as described in section 2.2 above? Please set out clearly the reasons for your response and any supporting evidence.
- Q.3 What general retail (end user) principles do you believe are required in protecting end user interests during any Migration from Legacy Infrastructure? Please set out clearly the reasons and evidence for your response.
- Q.4 What matters relating to end user communications should be considered in the transition from Legacy to Modern Infrastructure?
- Q.5 What are the matters relating to universal service that you believe should be considered during a transition from Legacy to Modern Infrastructure? Please set out clearly the reasons and evidence for your response.
- Q.6 What is your view on the Framework principles outlined in sections 4.1 and 4.2 above? Are there other aspects that should be considered?
- Q.7 Do you agree with the concept of a copper switch-off trial in specified exchanges?
- Q.8 What is your view regarding the concept of Stop Sell for legacy services for an exchange area?
- Q.9 What criteria and timelines would you consider appropriate in a Migration and Switch-off Phase?
- Q.10 What consideration should be given to the costs relating to connecting a premises for FTTP, including for mandatory migration from Legacy Infrastructure? If such costs were to be borne by Eircom, how should such costs be recovered?
- Q.11 What consideration should be given to the withdrawal of obligations and related conditions?
- Q.12 In addition to your responses above, what are your views on the context, transition proposal and conclusion presented in Eircom's White paper (Annex 2)?

- Q.13 In your view, what role should pricing signals have in incentivising the migration from legacy services? What are your views on Eircom's proposal on pricing triggers? Please set out clearly the reasons and evidence for your response.
- Q.14 What is your view on Eircom's proposal for differentiated handling of the business to business market?
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- Q.16 What consideration should be given to a scenario where a significant number of end users choose not to migrate to an available ACP within defined notice periods?
- Q.17 What structured stakeholder engagement do you think should be established to address the process of Migration from Legacy Infrastructure to Modern Infrastructure?
- Q.18 Are there matters relating to the objectives of public policy or environmental considerations which ComReg should consider in the context of its consultation process?
- Q.19 Are there additional matters relating to Migration from Legacy Infrastructure not included above which ComReg should consider in the context of its consultation process?

Annex: 2 Eircom White Paper “Copper Switch-off: Leaving a legacy for the Future”

Copper switch-off:
Leaving a legacy for
the Future

White paper





Foreword

Ireland faces many challenges in the coming years, not least from the economic and social consequences of the Covid-19 pandemic. We all hope that circumstances will improve so that the recovery can start soon. Whilst we have always appreciated the need for widespread availability of broadband, the Covid-19 crisis has really reinforced the essential need for reliable high-speed broadband, with Fibre to the Premises (FTTP) the preferred technology.

The benefits of FTTP are wide ranging. International studies have demonstrated clear economic benefits, whether measured in terms of the number of new start-up businesses or GDP growth. Society stands to benefit from enhanced services including e-Government, access to enhanced medical services and more flexible and better ways of working. A dedicated fibre line to every business and residential premise offers higher speeds, greater reliability and better performance than other competing technologies.

Our traditional access networks based on copper have reached the ceiling of broadband speed. We acknowledged this some years ago and accordingly began the rollout of our rural fibre network. We have since commenced the second phase of this commercial investment and have now passed 749,000 premises on our way to a target of

1.8 million. Such investment will not only create benefits for all our customers but promote Ireland internationally as a digital economy.

Fully unlocking Ireland's potential compared to competing destinations for job creation, exports and investments, requires that we as a nation urgently transition from copper to fibre. The speed and success of this transition will depend on a number of factors such as government policy and regulatory support to enable the promotion of fibre ahead of copper, and allowing customers to move to that new network when available, ultimately leading to a withdrawal of copper services from the market.

This white paper considers the conditions that will allow and encourage migration to these modern networks including the National Broadband Plan and for the switch-off of legacy copper services.

I believe these conditions promote transparency for our retail providers, their customers, and provide certainty for the business case of private investors and a return on the Irish taxpayers' investment.

A handwritten signature in black ink that reads "Carolan Lennon".

Carolan Lennon

CEO



Ireland's call

Ireland's citizens and businesses require access to fast and reliable broadband services. This is a central feature of our Government's policy:¹ *"In the area of communications, the government's goal is to provide a world class communications network with high quality services, supporting connected communities and enabling citizens to embrace digital opportunities, in a safe environment."*

The government supports economic growth, jobs, competitiveness and social inclusion through a range of policies and regulation designed to facilitate a more digitally connected economy and society. It is focused on ensuring the availability of high quality broadband to every premises in Ireland, balanced regulation to foster investment and innovation, as well as protecting and empowering individuals, communities and businesses in their use of digital technologies."

The Covid-19 pandemic has demonstrated a clear need for increased fibre broadband deployment, principally due to the large increase in the number of people working from home in the State. A recent survey by think-tank Eurofound revealed that approximately 40% of paid

hours worked by employees in Ireland were performed from home at the height of the crisis, the fourth highest figure in the EU:²

"Telecommunications, networks and connectivity are more vital than ever, with so much of our society confined to their homes and much of the economy depending on them. Networks need to be robust and flexible enough to deal with the additional traffic for working, doing business or e-learning and education online, but also for important social activities: from streaming or gaming to video calls with friends and families."

The Government's publication of the Remote Work Strategy, which will provide a legislative basis for employees to request the ability to work from home, and which contains an objective that remote working should be the norm for 20% of public sector workers, will ensure significantly increased rates of remote working will remain the norm even after the end of public health restrictions.

A joint eir and Tech Beat survey on remote working in December 2020, based on 263 responses, found that 55% of remote workers say they have achieved a better work/life balance, while only 11% say they do not wish to continue regularly working from home when public

¹ <https://www.gov.ie/en/policy/435802-communications-and-digital/>

² Burke-Kennedy, K., 'Ireland had one of highest rates of home-working during Covid-19 crisis', The Irish Times, 1 October 2020.



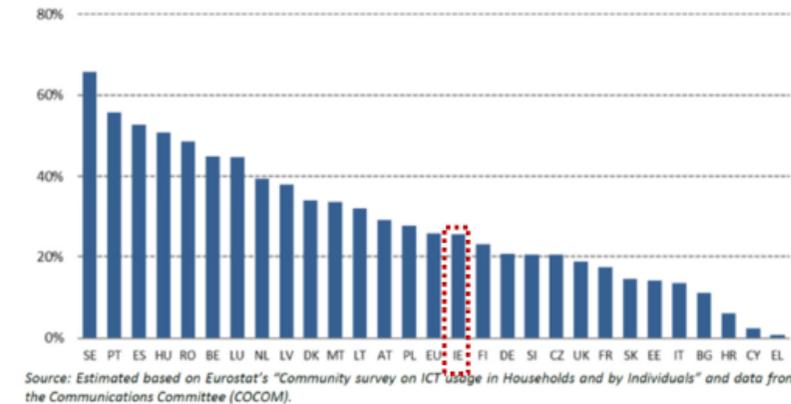
health restrictions ease. This demonstrates the scale of demand for remote working that is likely to persist in Ireland.

US research found that fibre broadband access increases rates of remote working. The research also demonstrated that, among surveyed workers, the average number of days worked from home per month was 12.8 days for FTTP users compared with 11.5 days for cable internet users and 10.2 days for DSL users.³

A quantitative model estimation by SQW in 2013 projected that faster broadband speeds (although not FTTP per se) would generate increase in teleworking, in turn generating about 60 million hours of leisure time per annum in the UK by 2024,⁴ as a result of commute reductions.

As it stands Ireland is some way behind many of its peers in the European Union as illustrated in the European Commission’s most recent scorecard report, the Digital and Society Index (DESI)⁵. Here Ireland ranks only 23 out of 28 for connectivity to high speed broadband.

Figure 1: Households with a fixed broadband subscription of at least 100 Mbps (% of households), 2019



Through industry and State Aid investment the availability of FTTP for every home and business in Ireland will soon become a reality. However, the success of open eir’s commercial investment, the State’s investment in the National Broadband Plan (NBP), and the speed at which Ireland can push to become a leader in Europe, is reliant on a supportive regulatory regime to develop a framework that

³ RVA (2011), Broadband Consumer Research.
⁴ SQW (2013), UK Broadband Impact Study.
⁵ <https://ec.europa.eu/digital-single-market/en/scoreboard/ireland>



incentivises a timely and orderly migration from the legacy copper-based services to modern FTTP services.

“Even with willing operators and customers, regulatory barriers to exchange closure and/or PSTN switch-off can delay migration.”⁶

How will high speed broadband be delivered in Ireland?

In Ireland high speed broadband is being delivered through a combination of:

- commercial investment by the telecommunications sector
- State intervention in those areas where commercial providers acting alone will not provide this service, the National Broadband Plan (NBP)

The NBP has commenced rollout and the first premises were connected to the NBP FTTP network in January 2021. open eir is pleased to support the rollout of the NBP providing access to our civil engineering network assets.

Over the years open eir has been at the forefront of commercial investment in the so-called commercial area. In the near term this has placed Ireland in a relatively advantageous position as recognised in

a recent European Commission study⁷. *“In terms of fixed coverage, Ireland outperforms the EU on DSL (at 93%, compared to 91% the EU average)... and especially on VDSL (92%, ranking third in the EU, far above the EU average of 59%).”* However this is only a short term benefit. Current technology that is transmitted over copper cables has a physical cap on the maximum download speeds at up to 100Mbps⁸ and much lower upload speeds. Whilst such speeds may be acceptable to some broadband users at the current time, history shows us that broadband speed demands are continually growing.

Faster broadband also tends to be associated with higher rates of remote working, which in turn carries environmental benefits by reducing commuting and associated greenhouse gases. The network over which these services are provided needs to be modernised. The copper network that has served us so well in the past will, in the next 5 to 7 years, be replaced with modern, reliable, future proofed and scalable high capacity networks largely based on FTTP technologies.

open eir is in the midst of the network transformation process with a multi-annual investment programme. The first phase, our rural FTTP broadband programme, was completed in summer 2019 passing 340,000 premises. The second phase, our Ireland’s Fibre Network

⁷ <https://ec.europa.eu/digital-single-market/en/scoreboard/ireland>

⁸ The DSL broadband speed on a line is a function of the distance of the premises and the serving network node.

⁶ Copper switch-off European experience and practical considerations by WIK-Consult



(IFN) initiative, commenced in the summer of 2019 and the rollout has progressed at pace. This is an ambitious project which relies upon €500m of investment from eir. The IFN will push high speed broadband to 1.4 million homes and businesses and employ 1,000 eir staff and contractors for the duration of the build. As part of the project we will build approximately 50,000 km of new fibre routes which is more than enough to circumnavigate the globe. Once completed, our fibre network will cover 84% of the premises in Ireland and 90% of that network will be served by FTTP. As of December 2020, we have passed 749,000 premises with FTTP through our rural broadband and IFN initiatives. Virgin Media and SIRO have also continued to rollout and invest in their networks, but to a lesser degree.

Once the NBP rolls out through the remainder of the country on eir's poles and ducts, Ireland could have a near ubiquitous fibre broadband network, making it one of the most connected countries in the world for fixed broadband. The new European regulatory framework, referred to as the Code⁹, which will be transposed into Irish law shortly, recognises the need to encourage the deployment of very high capacity networks, and to support migration from legacy infrastructure. Article 81 of the Code provides the basis for a national protocol to be established for legacy migration. This paper is in

accordance with Article 81(1) (and the relevant Irish legislation when transposed) to notify ComReg of open eir's "*plan to decommission or replace with a new infrastructure parts of the network, including legacy infrastructure necessary to operate a copper network*".

⁹ The European Electronic Communications Code, Directive (EU) 2018/1972



Tomorrow's world

Benefits to Irish economy, society and environment

Research on greater fibre broadband penetration and access to high internet speeds, consistent with copper switch-off, overwhelmingly shows a beneficial impact on business activity and the economy. This arises largely through creating easier access to markets, a more flexible workforce, and the development of business models that are digitally dependent and more flexible than those that rely solely on more traditional markets.

An OECD analysis of the effect of FTTP networks in 290 municipalities in Sweden in 2015, found that 10% higher fibre penetration was correlated with 0.08 more company registrations per 1,000 inhabitants per year across those areas.¹⁰ The same analysis further found that, on average, 10% higher fibre penetration is correlated with a 1.1% higher employment rate, when controlling for other significant factors such as urbanisation level, population evolution, income, education level and business creation.

¹⁰ In other words, about one additional company registration per 12000 inhabitants, Mölleryd, B. (2015), Development of High-speed Networks and the Role of Municipal Networks, OECD Science, Technology and Industry Policy Papers, No. 26, OECD Publishing, Paris.

Similar attempts to measure the effect of higher fibre broadband penetration on employment have been carried out elsewhere. In an Oxera study for the UK's Broadband Stakeholder Group, it was found that, if speeds are higher relative to other surrounding areas (or similar, competing areas), new or established businesses may also be attracted into the area from elsewhere, thereby boosting the level of business activity in the local area. The evidence, it says, shows an expected increase between 0.4% and 3.2% in the number of businesses operating in the area where speed is doubled.¹¹ This is reinforced by a study of French municipalities and the effect of available broadband speed, which observed 4.8% more start-ups in municipalities with ultrafast broadband compared to the ones with slower access¹².

As might be anticipated, the reduction of obstacles to business development and improved access to markets provided by high-speed broadband has been measured to have a demonstrable benefit to the whole economy, leading to improved GDP. A study by WIK, Ecorys, and VVA Consulting, which supports the finding of a link between broadband speeds and GDP growth, suggests that

¹¹ Oxera, Impact at a local level of full-fibre and 5G investments, Broadband Stakeholder Group, September 2019, with estimated productivity gains based on an assumption of the impact of a doubling of speed; Ipsos MORI (2018), based on an increase in connection speed of 100–200 Mbit/s; and Hasbi (2017), which estimated the impact of very high speed broadband availability in the local area.

¹² Henseler-Unger, I., The Socio-Economic Benefits of FTTH, Wik Consult, FTTH Conference 2018.



achieving 55% of broadband connections based on fibre by 2025 in Europe would result in GDP levels 0.54% higher than the status quo, while the less realistic scenario of achieving all-fibre connectivity by 2025 would result in a GDP increase by that point of 0.95% above the status quo.¹³

Further, an increase in fibre penetration has been linked to environmental benefits, through reduced CO2 emissions and more energy efficiency networks. An assessment of data on fixed broadband subscribers in the EU (plus Norway and Iceland) has shown that deployment of fibre infrastructure could lead to environmental benefits resulting in 88% less greenhouse gas emissions per gigabit in Europe, relative to the mix of copper and cable technologies in use in 2008.¹⁴

Finally, by switching off copper and moving customers to fibre networks, new and innovative healthcare solutions and applications including remote care opportunities can be better explored and implemented. An example of this is the town of Nueneen in the Netherlands, where the elderly population is linked over fibre-based high-speed networks to create a video-based platform of community

exchange which has been shown to reduce loneliness.¹⁵ Looking further into the future, tactile internet solutions such as remote surgery may also be enabled through fibre-based solutions.

Benefits to consumers

The benefits to consumers of switching off the copper and rolling out FTTP will flow to those consumers that actively use and pursue the opportunities inherent in a broadband connection. Users of voice only lines will not see any immediate benefit when shifting to fibre. Hence the interest and willingness of consumers to pay for fibre-based services and interest in copper switch-off will vary.

Compared to legacy broadband technologies, FTTP offers consumers a superior experience both in terms of bandwidth it offers and its reliability.

A consumer survey in Sweden found that more FTTP customers were happy with their service compared with (legacy) DSL customers (82% versus 50%). Further, 87% of the FTTP users highlighted the high bandwidth as a benefit of FTTP based services, 62% the wider range of services available and 51% a better value for money.¹⁶

In Ireland, the Department of Communications, Climate Action and Energy (DCCA) commissioned a study by PWC in 2018 to assess the

¹³ WIK-Consult, ECORYS and VVA Consulting (2016): Support for the preparation of the impact assessment accompanying the review of the regulatory framework for e-communications, Study for the European Commission, DG Communications Networks, Content & Technology.

¹⁴ Aleksic, S. and Lovric, A. (2014), Energy Consumption and Environment Implications of Wired Access Networks, American Journal of Engineering and Applied Sciences 4 (4), pp. 531-539.

¹⁵ What Fibre to the Home can do for your community, FTTH Council Europe

¹⁶ The socio-economic impact of FTTH by WIK for the FTTH Council Europe (2018)



costs and benefits of the NBP. In that report, PwC suggested that a household within the intervention area might benefit €740 per annum from the roll-out and uptake of FTTP. This conclusion was based on gaining the ability to work remotely, saving time on productive or value adding online activity and engaging in online shopping.¹⁷ Such benefits would also be available to consumers broadly across Ireland in the commercial areas.

The benefits to consumers of migrating away from copper to fibre-based services, however, are not likely to come without some level of disruption and inconvenience. This could include service outages over a short period or when equipment at a premise is changed and there is a need to reconfigure set-ups. Here a clear communication strategy and guidelines for copper switch-off can help alleviate such concerns.

Finally, there will be consumers who, despite the broad roll-out of FTTP in both intervention and commercial areas, find themselves continuing to rely on copper services. This could be due to long term restrictions on access or other factors beyond the control of operators making installation of new networks difficult or impossible. For some this may be a source of disappointment, and for others such as those only relying on voice only this may be of no concern. Nevertheless, here it is important that clear conditions are set for the transition from copper to fibre services.

¹⁷ PwC, NBP Cost Benefit Analysis Report, April 2019, p.7.

Benefits to business segment / enterprise

Overall FTTP enables innovation and new business opportunities in the knowledge economy, driving enterprises and organisations to adopt new business models and marketing strategies. Accordingly, many large enterprises will already be using fibre optic networks due to the high bandwidth, high reliability and high security requirements. However, small and medium-size businesses (SMEs) can also easily be served by FTTP and avail of the advantages fibre offers. For example, for most businesses reliability is a leading factor when deciding what type of broadband service to choose. By design, a fibre connection is far less likely to be impacted by service interruptions which make it an attractive choice.

Many businesses today are looking towards cloud services as they create new methods in which to do business, and ways to reduce operating costs. In cloud computing, where computing power and information is moved to the cloud, low latency and high capacity are critical requirements. FTTP technologies fulfil these requirements and ensure a good user experience.

Having employees using FTTP can also allow for more flexible working arrangements such as working from home, which helps employees save time and cost of travel between the home and workplace which generally contribute to higher productivity for the companies and



work-life balance for employees. To facilitate remote working, employees must be able to avail of appropriate upload speeds, which are not always available with copper technology.

The PWC report on behalf of the DCCAE from 2018, quantified significant enterprise benefits in the intervention area arising from (i) farm enterprises, (ii) SME enterprises, (iii) white collar workers commuting to employment outside of the intervention area and (iv) job creation for existing enterprises. The SME benefits cumulated to a total of €332m (real NPV) while commuting benefits were the highest totalling €930m (real NPV), both over a 25-year period.

As noted by PWC, the significance of this later benefit corresponds with the view of enterprise policymakers (e.g. DJEI) who hold the view that the ability of employees to work remotely, including teleconferencing “out-of-hours”, is an increasingly important constituent of Ireland’s FDI competitiveness.

Benefits for telecom infrastructure providers (Commercial Area)

International experience suggests that the process of copper switch-off can be slow and unstructured. This can have many explanations, but often two types of regulation complicate the process: access regulation allowing access seekers to stay on legacy networks longer than required and consumer protection such as universal service

obligations to keep certain services functional and protection of critical and vulnerable users.

In this regard, having a clear framework in place that provides an access provider like open eir, and also access seekers, with clarity and certainty on the conditions allowing for copper switch-off in the commercial area, can improve investor confidence. This in turn can boost take-up efforts which is a critical factor in supporting a positive FTTP business case, while providing increased incentives for roll-out; thereby creating a positive feedback loop.

FTTP provides a more-predictable, reliable and future-proof fixed broadband service in comparison to copper. Although the FTTC solutions eir has invested in can bring life back to copper lines, the quality and reliability improvements are surpassed by FTTP with fewer faults and more weather resilient properties. Fibre-based networks also require less maintenance and less energy relative to their copper counterparts, and the reduction in the number of exchange premises can offer savings from retirement of space bringing about operating expenditure reductions.

As users migrate to FTTP, the overall utilisation of the legacy copper network will decline, and there will come a point where it is inefficient to maintain parallel FTTP and legacy networks. In this regard, having



clear conditions for full and final migration along with the copper switch off, is a clear benefit to industry.

Benefits to NBI (in the Intervention Area)

National Broadband Ireland (NBI) has the task of building, operating and maintaining a fibre-based broadband network within the intervention area.¹⁸ NBI will be a wholesale operator, selling services to retail operators, who in turn deal directly with home and business broadband customers. In providing those wholesale services, NBI will provide its own technical infrastructure but will to a large extent rely on civil engineering infrastructure such as ducts and poles from open eir. Indeed, the DCCAIE made clear that as much as possible of the network infrastructure will comprise the re-use of existing poles and ducts, which NBI will lease from existing infrastructure owners, such as open eir. NBI will provide an alternative to eir's legacy services and ultimately render its copper network in the intervention area obsolete.

Significant benefits are expected from NBI's deployment of a broadband network in the intervention area. These range from accessibility to improved broadband services, which would increase the economic competitiveness and attractiveness of the intervention areas for investors to positive impact on job creation and a broad range of other public policy priorities, including in the areas of social

¹⁸ The network will provide fibre to the premises FTTH connectivity in the vast majority of cases, with provision for wireless alternatives for up to 2% of the hardest-to-reach premises.

inclusion, tourism and public sector reform. The cost benefit analysis conducted by PwC on behalf of the DCCAIE for the NBP, estimates a net benefit NPV of €858m over a 25-year period, with a benefit cost ratio of 1.3.

As noted in the previous section, having a clear framework in place that provides clarity and certainty on the conditions allowing for copper switch-off, can improve investor confidence. This also applies to NBI in the intervention area. With agreement on the conditions for copper switch-off, NBI will have a roadmap on which to better plan its roll-out and customer uptake. Since we are still in the early days of deployment in the intervention area, this additional clarity will be able to feed into the preparatory activities related to design of the network deployment, and hence, help NBI realise cost and resource management efficiencies. Furthermore, NBI foresee it will take between five to seven years to reach all 537,596 premises in the intervention area, but 15 years to fully migrate services to its network. The proposals in this white paper will significantly fast-track this to the benefit of NBI, which in turn will speed up the economic-wide benefits as noted above.

With increased clarity on copper switch-off, NBI will be in a better position to reap the benefits of efficient and timely deployment, ultimately ensuring an efficient use of taxpayers' money.



Leaving a legacy

The Irish landscape for fibre deployment will change dramatically over the next five years. We believe that the migration to fibre should initially be consumer led. In order to ensure that retailers and consumers can make informed decisions over time, a three-stage transition from copper to fibre services is required.

Stage 1: Consumer led migration

Where FTTP is available at the premises¹⁹, open eir should be allowed to stop selling wholesale copper services when a customer moves premises, changes service or switches provider.²⁰

This is the first “stop sell” event and is implemented at a premises level. The “stop sell” will be progressively applied as premises are added to open eir’s Pre-Qualification file. A variant of this is successfully being implemented in France.

Where a customer wishes to stay with their existing service provider on copper-based services they remain free to do so. In circumstances where a copper line is inactive when the fibre is deployed, then that premises will only be eligible for ordering fibre.

Once premises have transitioned to FTTP there will not be an option to migrate backwards to the legacy network.

Stage 2: Incentivising exchange area led migration

When 75% of all premises within an open eir exchange area are capable of ordering fibre, the second transition stage occurs.

In order to communicate the increasing costs of maintaining a copper service into the future, open eir should be allowed to increase the wholesale copper only prices for voice and broadband services, up to the entry level FTTP profile speed wholesale price for premises passed by FTTP.

At this stage, the wholesale price of FTTC will remain at the voluntary committed prices offered by open eir to ComReg on 8 January 2021. This will allow existing FTTC customers to stay with their retail provider in the medium term if desired.

Such wholesale pricing signals on the price of copper are proposed to be implemented in the UK and have already been successfully implemented in New Zealand. This approach recognises the increasing costs of maintaining the legacy network and will also provide the correct migration signals to retail operators, encouraging further FTTP adoption from their customers.

¹⁹ This includes where a premise is passed by open eir or NBI.

²⁰ This approach applies to the consumer and small business mass market only.



Stage 3: Completing the transition and copper switch-off

When 95% of all premises within an open eir exchange area are capable of ordering fibre, the final transition stage occurs. As this milestone is achieved, the full list of copper access regulatory remedies including those voluntary behaviours offered to ComReg by open eir, are automatically lifted for the entire exchange area.

In addition, when 95% of all premises within an open eir exchange area are capable of ordering fibre, open eir will commit that within the next three years, all remaining premises within that exchange area will have broadband with speeds greater than 30Mbps made available to them.

The calculation of the stage 3 milestone will include premises where open eir has been denied access to prepare FTTP, for example multi-dwelling units.

End users who have not acted will be terminated on the cessation date (unless self-declared to be a vulnerable user or a user providing critical national infrastructure).

This lifting of regulatory obligations and similar wholesale deployment commitments are also proposed in the UK.

Communication Plan to consumers and businesses

To complement the three-stage transition from copper to fibre services as set out above, a structured programme providing information to home and business owners on the availability of FTTP and the network changes in the area will be required. This will facilitate the migration to better modern networks and allow the switch-off and ultimate removal of copper lines.

Communications at Stage 1: Consumer led migration

Within 28 days of premises being able to order fibre in an area, open eir will provide the home and business owners with information on the benefits of FTTP. It will also provide clear information on the “stop sell” and associated timelines.

Communications at Stage 2: Incentivising exchange area led migration

As the availability of fibre in an exchange area is dependent on the roll-out by open eir, NBI and Siro, ComReg will have a role to play in publishing updates as to the progress and availability of FTTP within exchange areas.



Communications at Stage 3: Completing the transition and copper switch-off

When 95% of all premises within an open eir exchange area are capable of ordering fibre, open eir will inform the remaining consumer and small business copper customers in that exchange area who are passed by FTTP, that their existing copper services will be withdrawn in 12 months' time, advising them to contact their existing retail provider and/or retail provider of choice to discuss their options. The withdrawal notices will be progressively issued to the remaining 5% as premises are added to open eir's Pre-Qualification file.

These customers will also receive a reminder of this notice within three months and one month of the withdrawal of their copper services.

For vulnerable users reliant on special services for medical emergency and users providing critical national infrastructure, more time may be needed to identify suitable replacement services. Such users may request the withdrawal period to be extended from 12 months to 18 months. While such services are not the responsibility of open eir, open eir will work with the existing retail providers to facilitate solutions where possible. However, these services may no longer rely on an open eir connection, and it may be that alternative solutions are available in the wider market, which may be a choice for the consumer or business to purchase instead.

Communication Plan to telecom industry

As part of open eir's existing regulatory obligations, the availability of FTTP at a premises is published in advance to retailers, 28 days before an FTTP service can be ordered at that premise.

Continued information across the three stages of transition will help all retailers communicate and sell to their customers, detailing the journey they will take towards copper switch-off.

Industry Communication: Stage 1: Consumer led migration

After a premise first appears on open eir's Pre-Qualification file, the existing active copper service of that premise will no longer be available to order to operators. However, the relevant operator will continue to be able to maintain the existing copper service only.

Industry Communication: Stage 2: Incentivising exchange area led migration

When 75% of all premises within an open eir exchange area are capable of ordering fibre, that information will be made available by ComReg.

When an open eir exchange area reaches the 75% milestone, open eir will inform operators at least six months in advance of the proposed price increase on existing copper services within that exchange area.



Such a price increase will not exceed the wholesale entry level FTTH Bitstream price.

In the case of open eir exchanges that are subject to pricing regulation, that price increase will not impact eir's voluntary commitment of those wholesale prices for FTTC broadband services.

Industry Communication: Stage 3: Completing the transition and copper switch-off

When 95% of all premises within an open eir exchange are capable of ordering fibre, that information will be made available by ComReg.

When an open eir exchange reaches the 95% milestone, open eir will inform operators at least 12 months in advance, that there will be a withdrawal of access to copper-based services within that exchange.

Any copper lines who have not acted upon will be terminated on the cessation date (unless considered to be a critical user).

Business to businesses market

The large business to business and government market is typically characterised by multi-year contracts for multi-geographic locations throughout Ireland. Such frameworks, tenders, and contracts can involve the requirement for a number of copper-based solutions. Consequently, an alternative transition from copper to fibre services is required in these circumstances.

These copper-based services will first move to end-of-sale, and subsequently to end-of-life, on a product-by-product basis nationally rather than on a location-by-location basis. During that time, open eir's voluntary commitment on its copper-based broadband and voice wholesale prices will remain in place for those services.

The current IFN programme is expected to be completed in 2024, and open eir will make a formal announcement by 2025 regarding the withdrawal of access to these copper-based services and associated timelines.



Conclusion

Ireland is lagging behind its European peers in respect of FTTP availability. This can be reversed over the next few years through a combination of commercial and State investment in the deployment of FTTP high speed broadband networks, ensuring Ireland continues to be an attractive place to live and to do business.

At the same time as modern networks are deployed, it is important to encourage an orderly and timely transition from the legacy copper network to the faster and more reliable FTTP networks. We believe the protocol put forward in this paper provides a fair and reasonable basis for the progressive transition from legacy services, as the new networks are rolled out. At each stage, the pace of change accelerates in areas as the modern network becomes more widely available. In turn, this facilitates a quick switch-off of the legacy copper network when rollout is completed in an area. Doing nothing now and waiting until the FTTP network is fully rolled out is not desirable or efficient.

open eir looks forward to open and constructive engagement with ComReg and Industry Stakeholders to codify the national protocol to enable the digital transformation, and the timely switch-off of the legacy copper services and network. Recognising the due regulatory process to establish national regulatory policy, we hope that the protocol can be implemented at the earliest opportunity.