



Commission for  
**Communications Regulation**

# **Consultation on requirements regarding battery back-up for fixed voice services over non Public Switched Telephone Networks**

Consultation

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## Additional Information

All responses to this consultation should be clearly marked:	
Submissions to ComReg 16/109	
and should be sent by post or e-mail to arrive on or before 20 January 2017, to:	
Jennifer Gartland Retail Division Commission for Communications Regulation Irish Life Centre Abbey Street Freepost Dublin D01 W2H4 Ireland	
Ph: +353-1-804 9600 Fax: +353-1-804 9680	
Email: <a href="mailto:retailconsult@comreg.ie">retailconsult@comreg.ie</a>	
Please note ComReg will publish all respondents' submissions with the Response to this Consultation, subject to the provisions of ComReg's guidelines on the treatment of confidential information – ComReg 05/24.	

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# 1 Executive Summary

- 1 This consultation is to examine options including information and battery back-up (“**BBU**”) as potential solutions for consumers and end-users with voice services over non public switched telephone networks (“**non PSTN**”), including fibre, cable and fixed wireless access to make essential fixed-line telephone calls, including to emergency services, during a power failure at the home.
- 2 A conventional fixed telephone service over a publicly available telephone network (“**PSTN**”), a copper access network, continues to work if there is a power failure whereas a fixed voice service over a non PSTN will not. A BBU facility could be installed to provide temporary power to the equipment.
- 3 The Commission for Communications Regulation (“**ComReg**”) published a Call for Input<sup>1</sup> in January 2016 to consider the potential implications of the transition by Eircom Limited (“**Eir**”) from its existing copper network to a fibre network. Section 3.2 of the Call for Input referred to requirements that replacement voice services must comply with applicable regulations for publicly available telephone services (“**PATS**”).
- 4 As well as Eir’s transition, the availability of high speed broadband is increasing and communications services and devices are rapidly evolving. There is an increasing use of Voice over Internet Protocol (“**VOIP**”) technology (for example, Skype), as well as over the top services (for example, WhatsApp) over non PSTN networks. The use of the conventional telephone is decreasing.
- 5 We are responsible for ensuring that PATS providers fully inform their customers of the difference in the technology and how it will impact them in using their service. We are also responsible for specifying any relevant regulatory requirements to assist in ensuring the fullest possible availability of voice services.
- 6 We are proposing that, in addition to the requirement on ECS/ECN providers to disclose risk of interruption to the voice service within the contract, disclosure of risk is also required for existing subscribers during the contract period, if there is a change in the conditions in access to emergency services or applications.
- 7 We are furthermore proposing that fixed PATS providers are required to provide detailed information about BBU options available to all consumers and end-users at the point of sale and before entry into a contract and to existing subscribers if there is a change in conditions of access.

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<sup>1</sup> ComReg Document No. 16/01: <http://www.comreg.ie/fileupload/publications/ComReg1601.pdf>

- 8 Loss of fixed voice service over a non PSTN during a power failure may become more of an issue for consumers as voice services transition from PSTN. Therefore, with a view to ensuring that consumers and end-users can make an informed choice, supplying information to them on any differences in technologies and service characteristics before entry into a contract or, to existing subscribers if there is a change during their contract period, along with purchase options for a BBU solution, is likely necessary.
- 9 Fixed PATS providers should provide information on options to protect potential and existing subscribers from such risks and therefore assist in ensuring *“the fullest availability of the publicly available telephone services provided over public communications networks in the event of catastrophic network breakdown or in cases of unforeseen circumstances”*.<sup>2</sup> In this respect, we are proposing that fixed PATS providers should identify, for both potential subscribers as well as existing subscribers whose conditions in access change, options for purchasing a BBU facility.
- 10 Options for a BBU facility may be either those supplied by the PATS provider or by a third party retailer. If the PATS provider identifies BBUs supplied by third party retailers, end-users should be informed of sources for the availability BBU units that set out details of the cost, capacity and power duration of the units along with installation and maintenance instructions.
- 11 ComReg is cognisant that vulnerable users may have special requirements in relation to this issue. While ComReg is not proposing associated measures at this time, it is seeking views from stakeholders.
- 12 Submissions are invited from all stakeholders on the proposals and any other issues regarding BBU for fixed voice services over non PSTN networks.

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<sup>2</sup> Regulation 16(1)(a) of the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011

## 2 Background

- 13 We published a Call for Input in January 2016 to consider the principles that may be relevant for us when assessing the potential implications of the transition by Eir from its existing copper access network to non PSTN networks.
- 14 Section 3.2 of our Call for Input referred to regulatory requirements for PATS and that replacement voice services must comply with applicable regulations on the availability of services.
- 15 Regulation 16 of the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011<sup>3</sup> (the "**Regulations**") requires undertakings to ensure, to the fullest extent possible, the availability of PATS in the event of catastrophic network breakdown, or unforeseen circumstances. PATS providers must also take all necessary measures to ensure uninterrupted access to the emergency services.
- 16 The deployment of high speed broadband to households represents a profound change in the range of services and applications that consumers can enjoy. The Government's National Broadband Plan ("**NBP**") was published by the Department of Communications Energy and Natural Resources ("**DCENR**")<sup>4</sup> on 30 August 2012. Further details were announced by the Minister for the DCENR, on 15 July 2015, in a draft strategy document which sets out how the Government proposes to ensure the delivery of high-speed broadband in areas where the Electronic Communications Service ("**ECS**") providers are unlikely to provide such services commercially (i.e., the NBP intervention area(s)).<sup>5</sup> On the 22 December 2015, DCENR published the NBP Intervention Strategy - Updated December 2015 which takes into account the submissions received to the July 2015 publication.
- 17 As stated in our Call for Input, communications markets are continually and rapidly evolving with new services and devices entering the market. We note that for many consumers the perceived value of the fixed telephony service will increasingly move from voice to internet access for multiple services. The number of users of PSTN continues to be substantial, however, increasingly the conventional voice service will be delivered over high speed broadband networks using VoIP technology, often in a bundle with other services.

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<sup>3</sup> European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011, S.I. No. 337 of 2011: <http://www.irishstatutebook.ie/eli/2011/si/337/made/en/pdf>

<sup>4</sup> On the 23rd of July 2016, the Department of Communications, Energy and Natural Resources became the Department of Communications, Climate Action & Environment (DCCAE).

<sup>5</sup> <http://www.dcenr.gov.ie/communications/en-ie/Broadband/Pages/National%20Broadband%20Plan%20-%20Intervention%20strategy.aspx>

- 18 There is also an emergence of new technology in the market where services are over the top.
- 19 As stated in our Call for Input, the existing Universal Service Obligation (“**USO**”) does not specify the technology to be used in providing voice services. Nor, does it preclude the USP from meeting consumer requests for connections by sourcing a connection from a third-party. In principle, we consider it likely that a Universal Service Provider (“**USP**”) could choose to meet requests for a connection and voice service by providing (or sourcing) a connection to a non PSTN and providing a VoIP service over that connection. It may also be possible for the USP to meet its obligations in some cases by using other technologies such as wireless.
- 20 Eir is currently designated as a USP of access at a fixed location to an electronic communications network and voice services under the USO until 30 June 2021.<sup>6</sup>
- 21 As the market evolves and as consumers increasingly migrate to new advanced networks and services, one area of potential concern is the way in which fixed telephone services are protected in the event of a loss of power.
- 22 A conventional PSTN telephone draws the necessary power for operation from the local exchange via the copper telephone wires and as a result can continue to function even when there is a power failure at the premises. However, for example, optical fibres are unable to support this facility as they do not conduct electricity. Services such as VoIP, whereby the consumer and end-user’s broadband provides telephony-like services, are at risk of interruption during a power failure at the consumer and end-user’s premises because these services rely on local power being supplied to the broadband modem. The consequence is that it may not be possible to make essential voice calls, including to emergency services during a power failure to the consumer’s premises.
- 23 In practice, alternative temporary power to support essential calls over fibre or cable<sup>7</sup> access networks during a power failure could be supplied via a BBU facility installed at the consumer and end-user’s premises.
- 24 This consultation applies to all **fixed** voice services offered over non PSTN, not only those voice services supplied by the USP.
- 25 We note recital 35 of Directive 2009/136/EC of the European Parliament and of the Council<sup>8</sup> below and note that this is important in the context of non PSTN including those implemented as a result of the NBP.

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<sup>6</sup> ComReg Decision D05/16, ComReg Document No. 16/65 entitled “Universal Service Requirements - Provision of Access at a Fixed Location (AFL USO)”, dated 29 July 2016, <http://www.comreg.ie/publication/universal-service-requirements-provision-access-fixed-location-afl-uso/>

<sup>7</sup> It is noted that similar to fibre, cable networks do not provide power to operate necessary equipment at the consumer location, including network devices (e.g., cable modems, optical network terminals) and telephones.

<sup>8</sup> Directive 2009/136/EC of 25 November 2009



*“In future IP networks, where provision of a service may be separated from provision of the network, Member States should determine the most appropriate steps to be taken to ensure the availability of publicly available telephone services provided using public communications networks and uninterrupted access to emergency services in the event of catastrophic network breakdown or in cases of force majeure, taking into account the priorities of different types of subscriber and technical limitations.”*

- 26 In section 3.2 of our Call for Input we proposed this consultation on issues relating to BBU. These issues include whether or not any requirements should be specified for the purpose of ensuring the fullest possible availability of PATS where access to the PATS involves equipment powered by the mains supply at the consumer and end-user’s premises. Mindful of the principle of proportionality, we did not envisage that any requirements related to battery back-up would have a material impact on the business case for non PSTN.
- 27 This consultation is concerned with the facilities provided at end-users’ premises in the case of a fixed non PSTN network. Such facilities generally require mains power to allow the equipment, such as consumer and end-user premises equipment (“**CPE**”), network termination equipment, routers and VoIP gateways, to operate and it is for these solutions that this consultation is directed.
- 28 ComReg is of the preliminary view that any implications of 16(2)<sup>9</sup> of the Regulations with respect to back-up power of CPE for fixed voice PATS services would be satisfied by meeting the requirements proposed in this consultation; this view is without prejudice to any other implications arising from the obligation on undertakings to ensure uninterrupted access to emergency services.
- 29 Finally, we have considered whether our proposed approach in light of our information notice on Regulatory Framework for Next Generation Voice Services, including VoIP.<sup>10</sup> Any decision arising from this project in relation BBU for VoIP services will supersede any existing detail in the guidelines on VoIP, where relevant.

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<sup>9</sup> “An undertaking providing a publicly available telephone service shall take all necessary measures to ensure uninterrupted access to emergency services.”

<sup>10</sup> <http://www.comreg.ie/fileupload/publications/ComReg1091.pdf>

## 3 Consultation Issues

### 3.1 Analysis of Policy Issue

#### 3.1.1 Technological Changes

30 The conventional telephone service offering has changed with the evolution of technology. While improvements are extensive, there are instances where an existing feature will no longer be available for the consumer and end-user who has switched or, will in the future switch, from PSTN to a non PSTN fixed networks. One such feature is the ability to make a call when the equipment is powered by the mains supply and there is no power. Services over a non PSTN, such as VoIP, are at risk of interruption during a power failure at the consumer and end-user's premises during which it would not be possible for the consumer and end-user to make essential voice calls.

31 ComReg has responsibilities in this area:-

- to ensure that ECS/electronic communications network (“**ECN**”) Providers inform their customers of the difference in the technology and the impacts on them<sup>11 12 13</sup>; and
- to specify any relevant requirements so that “*undertakings shall ensure the fullest possible availability of the publicly available **telephone services** provided over public communications networks in the event of catastrophic network breakdown or in cases of unforeseen circumstances*” [emphasis added].<sup>14</sup>

32 The risk of consumers and end-users being unable to make voice calls from certain fixed networks during a power outage could be mitigated by various means, including providing consumers and end-users with adequate information as well as the use of BBU to ensure, at a minimum, a temporary supply of power is available to the customer, if appropriate.

33 To inform our examination of BBU during this consultation process, we have drawn from a number of sources in order to understand the likelihood that BBU would be called upon to support essential calls and the consequences to ECS/ECN providers and consumers and end-users in deploying and maintaining such back-up service.

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<sup>11</sup> Regulation 14 (2) (b) of the Regulations.

<sup>12</sup> Regulation 16 (6) (b) and (c) of the Regulations.

<sup>13</sup> Section 12 of the Communications Regulation Act, 2002, as amended:  
<http://www.irishstatutebook.ie/eli/2002/act/20/enacted/en/pdf>

<sup>14</sup> Regulation 16 1 (b) of the Regulations, S.I. No. 337 of 2011: <http://www.irishstatutebook.ie/eli/2011/si/337/made/en/pdf>

- 34 In assessing the potential risk of disruption to fixed voice services, we noted that our Consumer Line did not receive any complaints in the year to 30 Sep 2016 in respect of issues resulting from loss of telephone service due to domestic electricity power failure<sup>15</sup>. However, we note that the prevalence of these technologies are likely to increase and will expand to all geographical areas.
- 35 We have reviewed research carried out by Cullen International in February 2016<sup>16</sup> on whether National Regulatory Authorities (“**NRAs**”) have launched consultations or imposed provisions on BBU for the optical terminating units and VoIP equipment for FTTH access deployments. Of the 15 benchmarked NRAs, with the exception of the UK, no NRA has mandated provision of a BBU service. Some findings from the benchmark set out in Appendix 1 include:
- Finland’s NRA has set conditions for power supply security in copper withdrawal and sets out requirements for emergency power supply for network components (excluding consumer equipment). The length of the required back-up time depends on the vulnerable user of the component. The vulnerable user is determined on the basis of the number of affected users and/or the coverage area.
  - Sweden’s, Portugal’s and Greece’s NRAs require that ECS providers inform consumers of the risks of power failure.
  - Portugal’s NRA states that it will be necessary to find solutions that allow vulnerable citizens to be contacted and access to emergency services in cases of power failure.
- 36 We note that following Cullen International’s research, the UK’s NRA, Ofcom, published in its Strategic Review of Digital Communications statement<sup>17</sup> and has stated its intent to withdraw its existing guidance<sup>18</sup> on the use of BBU to protect against localised power outages.

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<sup>15</sup>Service complaints include all services such as VoIP over existing FTTH or through cable TV (CATV) technology.

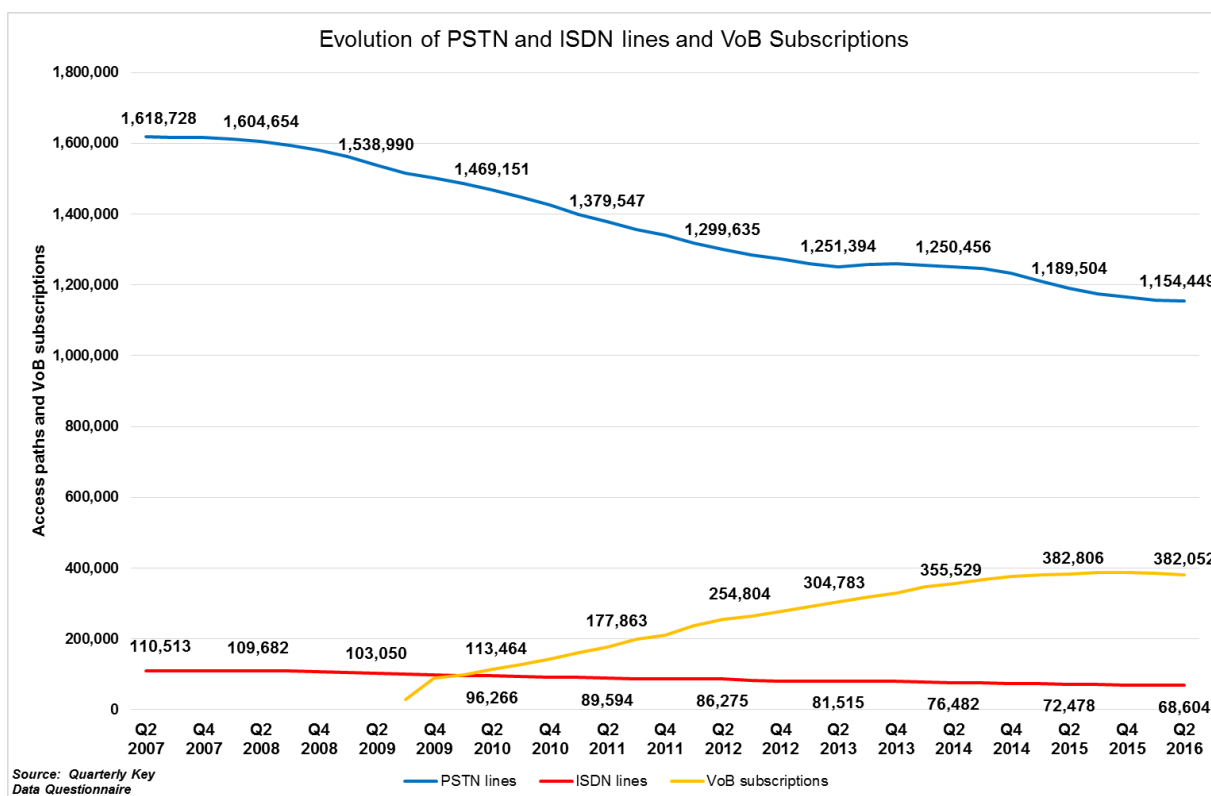
<sup>16</sup> See Appendix 1

<sup>17</sup> Ofcom Strategic Review of Digital Communications Statement  
[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

<sup>18</sup> Ofcom’s guidance at the time of Cullen International’s research to those operators deploying fibre networks was that they should provide a back-up battery capable of allowing the customer to make emergency calls on their landline phone for at least an hour after a power cut at the premises

### 3.1.2 Changes in technology used for fixed voice access

37 The following graph is compiled from our Quarterly Key Data Report<sup>19</sup> and shows the evolution of PSTN, ISDN Lines, Cable voice and other managed VoIP subscriptions. The market has been increasing in voice over broadband subscriptions and declining in traditional telephone and data lines between Q1 2007 – Q2 2016.



**Figure 1: Evolution of Conventional and VoB subscriptions**

38 We have reviewed research published in the Special Eurobarometer 414<sup>20</sup> in March 2014 which reported that:

- 41% of households in Ireland with mobile telephone access had no fixed telephone access.
- Respondents in Ireland are more likely to use an internet phone service to make free calls than they were in 2013 (+10 PP).
- 5% of the 1000 Irish households surveyed had no mobile telephone access.

<sup>19</sup> Quarterly Report Data as of Q2 2016 is available at [www.comreg.ie](http://www.comreg.ie)

<sup>20</sup> Pages 25, 27 and 31 of: [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_414\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_414_en.pdf)

39 We considered existing technology such as cordless (DECT) phones whose base-stations are totally reliant on the mains supply and are already commonly used by consumers. In practice, a consumer with a DECT phone to access their voice service over a PSTN can choose to retain a wired telephone as back-up during a power failure. However, for consumers and end-users of a fixed voice service over non PSTN networks, similar options may not be available as there may not be a concurrent working copper line to use in the alternative.

### 3.1.3 Service Provider Information

40 We collected data from fixed ECS/ECN providers using our statutory powers<sup>21</sup> regarding:

- cost scenarios of BBU and back-up duration;
- particular vulnerable users and possible differences between residential and business needs;
- current reliance on cordless (DECT) phones;
- any differences in needs of urban, suburban consumers and those in rural areas where there is less availability of choice.

41 A summary of the data submitted by fixed ECS/ECN providers is as follows:

- No ECS/ECN providers currently supply BBU solutions to their domestic customers. One ECS/ECN provider currently supplies BBU to commercial customers on request;
- Half of the ECS/ECN providers provided estimates of cost for domestic BBU solutions. According to these providers estimated costs were approximately €100 to install and approximately €25 to maintain per year;
- The majority of ECS/ECN providers report that they would likely charge their customers for a BBU solution, if provided;
- Half the ECS/ECN providers had sales figures of the take up of their supplied cordless (DECT) phones. However, the low percentage (in one case, approximately 12% of subscriber base) suggests the majority of consumers source their own cordless phone independent of their ECS/ECN provider.

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<sup>21</sup> Section 13D of the Communications Regulation Act 2002 as amended:  
<http://www.irishstatutebook.ie/eli/2002/act/20/enacted/en/pdf>

### 3.1.4 Consumer Survey

- 42 We undertook a survey to further understand the extent of consumer awareness around the requirement of BBU to sustain VoIP services in the event of a power failure at the consumer and end-user's premises. The survey results, published at the same time as this consultation (ComReg 16/104a), have assisted in informing this consultation.
- 43 The most relevant findings from this online survey are as follows:
- 99% of the respondents have a phone service, of which 95% have a mobile phone and 55% have a traditional telephone (21% corded, 79% cordless). 27% of all respondents include VoIP as a phone service.
  - Of the age group 55+, 83% have a traditional telephone service (17% corded and 83% cordless), 98% have a mobile phone and 31% have a VoIP phone service.
  - In the Connaught and Ulster region, 61% have the traditional telephone service (15% corded, 85% cordless), 100% have a mobile phone and 26% have a VoIP phone service.
  - In the Munster region, 52% have the traditional telephone service, 96% have a mobile phone and 22% have a VoIP phone service.
  - In the Leinster region (excluding Dublin), 55% have the traditional corded telephone service, 94% have a mobile phone and 23% have a VoIP phone service. 3% of respondents surveyed in this region have no phone service.
  - In Dublin, 55% have the traditional telephone service, 94% have a mobile phone and Dublin has the highest rate of VoIP service usage at 34%. 1% of those surveyed do not know what kind of phone service they have.
  - 28% of corded telephone users are located in Munster, 20% are located in Dublin, 18% are located in Leinster (excluding Dublin) and 15% are located in Connaught and Ulster;
  - When asked if a cordless (DECT) telephone wouldn't work for a reason such as a power failure, 25% said they would plug a corded telephone directly into the wall to continue the phone service. 29% of these are aged 55+. 31% live in the Munster region, 28% live in the Connaught and Ulster region and 25% live in the Leinster (excluding Dublin) region;

- 99% of all traditional telephone users would have an alternative service to make an emergency call and 1% would not if their home phone was not working. Of those 99%, 97% would use a mobile phone as an alternative service in the event of a power failure and 2% rely on a battery back-up;
- Of the traditional telephone users in the age group 55+, 99% would use a mobile phone as an alternative in the event of power failure and 1% would have no alternative service;
- 25% of VoIP users are unaware and 75% are aware that a VoIP service might not work in the event of a power failure. The highest awareness is in the 55+ age bracket at 81%;
- 37% of VoIP users are unaware and 63% are aware that they may need to have a battery back-up to be able to use their VoIP service in the event of a power failure, The highest awareness is in the 55+ age bracket at 70%;
- 37% of all VoIP users are prepared to spend an amount each year for a battery back-up, 31% of all VoIP users are prepared to spend up to €25 per year. 56% of all VoIP users are not prepared to spend any amount each year for a BBU;
- The VoIP users in the age group 55+ are the least likely to spend any amount each year for a battery back-up at 67%;
- The VoIP users in the Leinster (excluding Dublin) region are least likely to spend any amount each year for a battery back-up at 63%. 56% in Munster and 40% in Connaught and Ulster regions are not prepared to spend any amount each year for BBU.

### 3.1.5 Electricity Failures

- 44 We contacted the Commission for Energy Regulation (“**CER**”) who identified ESB Networks as the holder of a central register of vulnerable users of electricity service and, in addition, the appropriate body for data on power outage statistics. In the event of a planned outage, vulnerable users recorded in this database are treated as a priority by their electricity service provider.
- 45 We collected data from ESB Networks to ascertain if there were significant variances in power outage duration on a national, urban and rural level. In addition, the data indicated that in the six years up to and including 2015, an average of 32% of all outages lasted less than 2 hours in duration whereas the remaining average of 58.5% of all outages were between 2 and 6 hours in duration.

46 The data also indicated that in 2015, the average customer minutes lost due to faults was 59 minutes in rural areas and 18 minutes in urban areas. The average number of customer interruptions due to faults was less than 1 per customer per year at 0.6 interruptions per customer per year in rural areas and 0.2 interruptions per customer per year in urban areas.

### 3.1.6 Battery Availability and Cost

47 We note from European Community Joint Research Centre on Energy Efficiency<sup>22</sup> that the power consumption of a home gateway in its on-state can be up to 6.2 watts (“W”)<sup>23</sup> and a VoIP telephone in its on-state can be up to 4.3W, a total power consumption of 11W. We also note that batteries can be obtained in a variety of forms, sizes, materials and capacities all which effect longevity, costs and practicalities associated with maintenance and the environmental impact of disposal.

48 As well as considering that the majority of power outages last less than 6 hours with longer outages increasingly unlikely, it is necessary to note that the length of time that an essential call, including to emergency services, is typically short in duration. Consequently, for a battery back-up facility to offer effective protection, there is a minimum longevity that needs to be offered for such protection to be of use.

49 As an example, a rechargeable AA<sup>24</sup> cell battery has 2400 milliamp hours (“mAh”)<sup>25</sup> @ 1.25 volts<sup>26</sup> = 3 watt-hours (“Wh”)<sup>27</sup>. Therefore to provide 11W of power for 6 hours, 22 ‘AA’ batteries would be required. For this reason, batteries providing sufficient power for systems to remain operational for a number of hours are generally bulky units. In addition, replacement, maintenance and disposal can be cumbersome and costly for the consumer and end-user and/or the ECS/ECN provider. These practical aspects may diminish the theoretical benefit they offer.

50 We researched battery back-up units and we could not source battery back-up units available for purchase in Ireland in the price range of less than €25 per year, which we would consider the minimal price range. Figure 2 shows examples of what is currently provided in the UK by an ECS/ECN provider, what is available for purchase in the UK and what is currently available for purchase in Ireland.

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<sup>22</sup> Page 29 of Code of Conduct on Energy Consumption of Broadband Equipment Version 5.0:

[http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/files/documents/ICT\\_CoC/cocv5-broadband\\_final.pdf](http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/files/documents/ICT_CoC/cocv5-broadband_final.pdf)

<sup>23</sup> The watt is a unit for measuring electrical power.




<sup>24</sup> A disposable AA cell battery has 2500 mAh @ 1.5V = 3.75 Wh

<sup>25</sup> The milliamp hour (mAh) is a unit that measures electric power over time and is commonly used to measure the energy capacity of a battery. In general, the more mAh, the longer the battery capacity or battery life.

<sup>26</sup> The volt is a unit for measuring the force that moves an electric current.

<sup>27</sup> The watt-hour (Wh) is a unit of [energy](#) equivalent to one [watt](#) (1 W) of [power](#) expended for one hour (1 h) of [time](#).



	Example from UK ECS provider	Example from UK online source	Example from Irish online source
			
	BT Openreach fibre modem battery back-up unit	UK power supply with battery back-up	Back-UPS 700VA
	Four rechargeable AA batteries	Plug-in DC power source with built in Li-ion back-up battery	Battery back-up Power and Surge Protection
<b>Size</b>	Unavailable	68 x 42 x 74 mm	6.00 kgs
<b>Output Capacity</b>	Up to an hour	7W approx 55 mins 10W approx 36 Mins	11W approx 35 hours (390 Watt capacity)
<b>Price Range</b>	Unavailable	£46.80 (approx €52)	€79.99
<b>Source</b>	<a href="http://bt.custhelp.com/app/answers/detail/a_id/36953/346">http://bt.custhelp.com/app/answers/detail/a_id/36953/346</a>	<a href="http://www.audon.co.uk/digalm/IP2100-12.html">http://www.audon.co.uk/digalm/IP2100-12.html</a>	<a href="http://www.upssupplier.ie/home.php">http://www.upssupplier.ie/home.php</a>

**Figure 2 – Battery Back-Up Research**

- 51 Finally, we considered the submission to our Call for Input 16/01 received from Eircom Limited (“Eir”)<sup>28</sup> which stated “*The issues are already relevant and are not unique to the transition from eir’s copper network in the future. Matters such as establishing a clear policy for battery back-up should be addressed in the near term for all market players.*”
- 52 We agree with Eir that it is appropriate to consider this aspect across all fixed ECS/ECN providers.

<sup>28</sup> Page 32 of ComReg Document No. 16/01s: <http://www.comreg.ie/publication/transition-from-eiras-copper-network/>

Q. 1 Are there any other factors that ComReg should consider, in addition to those set out in Section 3.1, that cover market and technological changes, battery back-up availability and cost with respect to:

(a) the limitations of services, such as VoIP, which are at risk of interruption during a power failure at the consumer and end-user's premises because these services rely on local power being supplied to the equipment through which the service is being provided; and

(b) alternative temporary power capable of supporting essential calls over non PSTN networks, such as, fibre networks, during a power failure supplied through a battery back-up facility installed at the consumer and end-user's premises?

Please provide detailed reasons and supporting evidence for your view.

## 3.2 Potential regulatory options available to ComReg

53 Having considered all the available information outlined above, in light of the identified consumer protection concerns, including section 4.2 of the RIA, we assess in this consultation and in the RIA the broad regulatory approaches to mitigating the risk of power failure affecting voice services, including to:

1. Rely on existing obligations (no intervention measures);
2. Specify minimum ex ante BBU information requirements;
3. Impose BBU requirements; and
4. Potential measures for Vulnerable Users.

### 3.2.1 Rely on existing obligations ('no intervention measures')

54 Consumers and end-users need, at a minimum, to understand any risk associated with non-PSTN powered fixed voice services and access to 112 service, amongst other things, to make informed choices.

55 Regulation 14 (2)(b) of the Regulations<sup>29</sup> states that an ECS/ECN provider contract must specify –

*(i) whether or not access to emergency services and caller location information is being provided and any limitations on the provision of emergency services under Regulation 20,*

*(ii) information on any other conditions limiting access to, or use of, services and applications where such conditions are permitted under national law in accordance with European Union law.*

56 The transition from PSTN networks to non PSTN fixed networks and the increase of availability of high speed broadband means “changes to conditions limiting access to or use of services” are also increasing. Essentially, with consumers and end-users increasingly migrating to a VoIP over broadband services, the evolution in technology changes some of the characteristics of the voice service.

57 One approach would be for us to continue to rely on existing obligations with respect to contracts, as set out in 4.3.1 and 4.4.1 of the RIA. In the context of power outages, we expect that by fulfilling Regulation 14 (2)(b)(i) and (ii) of the Regulations, ECS/ECN providers of PATS must clearly disclose limitations in the event of a power failure to consumers and end-users within the terms and conditions of their contract.

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<sup>29</sup> The Regulations, S.I. No. 337 of 2011: <http://www.irishstatutebook.ie/eli/2011/si/337/made/en/pdf>

58 Essentially, relying on this option alone would mean that we would forbear at this time from specifying ex ante information requirements, relying solely on PATS providers to comply with applicable legislation, including, transparency requirements.<sup>30</sup> Importantly, ECS/ECN providers are already obliged to make available clear contractual information. Therefore, the features and capabilities of any service must be properly described including the dependency of the service on a power supply in the home and on the availability of a broadband connection.

### 3.2.2 Specify minimum ex ante BBU information requirements

59 However, there is an option available to ComReg to specify additional requirements to be complied with by PATS providers (Regulation 15 and Regulation 16 of the Regulations). The factors taken into account in our consideration is the information provided by ECS/ECN providers and the consumer survey undertaken with respect to awareness of the matter.

60 As set out in section 3.1.5 ComReg undertook a survey to further understand the extent of consumer awareness around the requirement of BBU to sustain VoIP services in the event of a power failure at the consumer's premises. The survey results, published at the same time as this consultation (ComReg 16/104a), have assisted in informing this consultation.

61 The consumer survey showed 27% of all respondents have VoIP as a voice service.

62 Of this 27%, a quarter are unaware that a VoIP service would not work in the event of a power failure and three quarters are aware. Of those aware, 81% are aged 55+.

63 Of this 27%, 37% are unaware that they need a BBU to use their VoIP service in the event of a power failure, whereas 63% are aware. Of those aware, 70% are aged 55+.

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<sup>30</sup> Pursuant to Regulation 14 of the Regulations.

### **Proposed Approach and Preliminary View**

- 64 It is our preliminary view that, in addition to the existing contractual requirements where PATS providers inform consumers about the limitations of technology over a non PSTN network during a power failure fixed PATS Providers should provide detailed information (as set out in paragraph 65 and 66) about options for BBU, to all consumers, at the point of sale (instore, online, voice and face to face) before entry into a contract (specified in accordance with Regulation 16 (1) (b) and, to existing subscribers in the event that there is a change in conditions of access during the contract.
- 65 It is our preliminary view that fixed PATS providers should provide to potential subscribers pre contract as well as to existing subscribers in the event that there is a change during the contract:
- a. clear and transparent disclosure of conditions limiting access to or use of services; and
  - b. information on steps consumers may take to address those limitations.
- 66 It is our preliminary view that fixed PATS providers must provide detailed information including:
- the implications of not having BBU during a power failure – service limitations with and without BBU;
  - emergency use requirements; and
  - sources for the availability of BBU units that set out details of the cost of BBU units, capacity and power duration of BBU units, installation and maintenance instructions.
- 67 This approach would be designed to ensure that consumers, end-users and subscribers who are in contract are at a minimum aware of the risk of interruption to their voice service including 112 access during a power failure in the home and are adequately informed in deciding whether or not to purchase a BBU facility, which facility is appropriate and where it can be purchased.
- 68 In many cases, fixed ECS/ECN providers do not currently make available any information to consumers, end-users and to subscribers before entry into a contract or to subscribers who are in contract in respect of the features of a VoIP service (that the digital telephone service may not work in instances of a power failure).

- 69 In this light, we wish to seek that industry improve the information flows and where a service differs from a conventional telephone service in terms of service reliability and available features (and therefore may not meet consumer expectations), consumers and end-users should be made fully aware about these differences. We would furthermore encourage fixed ECS/ECN providers as part of their general service offering to inform consumers and end-users of options to avoid interrupted service.
- 70 Better information to consumers and end-users could be expected to allow them to more fully assess their needs or otherwise for their voice service including purchasing a BBU service.
- 71 We see appropriate consumer information as a critical element of our overall approach to this matter. Absent necessary information there may be a lack of awareness and/or confusion in transition to new access technologies and services. Fixed ECS/ECN providers should provide consumers and end-users with sufficient information to make an informed decision whether or not to purchase a BBU service for continuation of voice service for a temporary period of time in the event of a power failure.
- 72 Consumers and end-users may expect that a fixed voice service provided by a non PSTN (a fibre, cable or fixed wireless network (voice over broadband or managed VOIP)) would remain available in the event of a power failure in the home or premises as this capability has always been present for PSTN telephony. Therefore, in transition to new advanced networks consumers and end-users may be unaware that they must take action to ensure voice service availability in the case of a power failure at their premises.
- 73 In this context, any lack of transparency *inter alia* insufficient engagement with consumers and end-users in respect of voice service characteristics including, any differences in the experience they could expect in using replacement services, would potentially result in a misinformed choice and consumer welfare would be reduced.
- 74 Our RIA (section 4.3.2 and 4.4.2) considers it in the public interest to identify minimum information that must be communicated to consumers and end-users regarding back-up power. Informing them of the circumstances under which their voice service access is not available is not sufficient and further specification is required in terms of adequately informing a consumer and end-user on how to have a BBU in place at the consumer and end-user's premises.

- 75 Thus, availability of clear and accurate pre contractual information related to back-up power that could be in place at the consumer and end-user's premises is an important means to empower consumers to make an informed choice. Equipped with information as described above, paragraphs 65 and 66, all consumers and end-users, both new and existing subscribers will be in a better position to make decisions on whether or not to purchase back-up power and conduct regular maintenance in order to ensure voice service access during power outages.
- 76 Our preliminary view is that at the point of sale (instore, online, voice and face to face), prior to entry into a contract, fixed PATS providers provide clear and transparent information to consumers and end-users in relation to BBU, such as, the types of information disclosure set out at paragraphs 65 and 66. This would include identifying a solution(s) for the purchase of a BBU to consumers and end-users.
- 77 We are of the preliminary view that the identification of BBU purchasing options should be communicated clearly to consumers and end-users at the point of sale (instore, online, voice and face to face) and in the event of a change during the contract, alongside the disclosure of any potential limitations of voice services, including VoIP, which involves equipment powered by the mains supply at the consumer and end-user's premises being at risk of interruption in the event of a power failure.

Q. 2 Do you agree with the preliminary view that it is not sufficient to rely on the existing contractual and information requirements on fixed PATS providers?

Please provide detailed reasons and supporting evidence for your view.

Q. 3 Do you agree that all fixed PATS providers should provide:

(a) clear and transparent disclosure of conditions limiting access to or use of services at point of sale (instore, online, voice and face to face); and

(b) information on steps consumers and end-users may take to address those limitations?

Please provide detailed reasons and supporting evidence for your view.

Q. 4 Do you agree that, in addition to the existing contractual and information requirements, all fixed PATS providers should provide detailed information (as set out in paragraphs 65 and 66) about battery back-up, to all consumers and end-users, at the point of sale (instore, online, voice and face to face) and before entry into a contract?

Please provide detailed reasons and supporting evidence for your view.

Q. 5 Do you agree that all fixed PATS providers should provide pre contract and in the event that there is a change during the contract:

(a) clear and transparent disclosure of conditions limiting access to or use of services during the contract, if there is a change in technology (instore, online, voice and face to face); and

(b) information on steps consumers, end-users and subscribers may take to address those limitations.

Please provide detailed reasons and supporting evidence for your view.

Q. 6 Do you agree that, in addition to the existing contractual and information requirements all PATS providers should provide detailed information (as set out in paragraphs 65 and 66) about the requirement for battery back-up, to all subscribers, during the contract, if there is a change in technology (instore, online, voice and face to face) and before entry into a contract?

Please provide detailed reasons and supporting evidence for your view.



### 3.2.3 Impose BBU requirements

- 78 We note that the purpose of BBU is to supply temporary power to make essential calls in the event of a power failure at the home. It is not the purpose of a BBU to fully replace power and keep a voice service running as normal.
- 79 In the data we collected from ESB Networks, as set out in Section 3.1.5, in the 6 years up to and including 2015, an average of 32% of all power outages lasted less than 2 hours in duration, whereas the remaining average of 58.5% of all power outages were between 2 and 6 hours in duration.
- 80 As set out in our RIA (section 4.3.3 and 4.4.3), while overall consumers and end-users should gain if the fixed PATS provider is obliged to supply a BBU service, the cost burden of providing a BBU solution to all consumers and end-users, regardless of whether they requested it, may outweigh the current and potential number of affected users and or coverage areas.
- 81 Further, recognising that consumers and end-users may have different preferences for back-up power, a “one-size fits all” solution may be inappropriate and could disserve consumer and end-user interests. The overall magnitude of impact of a mandatory installation of a BBU service will depend primarily on any degree of hassle/transaction costs, consumers underlying BBU valuation and a magnitude of fixed PATS providers’ compliance costs compared with consumer benefit.
- 82 We recognise that consumers and end-users are increasingly relying on new types of telephone service instead of conventional services.
- 83 Our RIA considers that imposing on the one hand minimum ex ante BBU information requirements and on the other hand an opportunity to avail of the BBU service after being informed is likely beneficial to consumers. It recognises that consumers may have different preferences for back-up power. The opportunity to avail after being informed of BBU could ensure that consumers and end-users who so elect can obtain BBU simply and conveniently when activating a voice service. As the take up of the VoIP service increases, a BBU service upon request would make the consumer and end-user more aware of the effect on the retail product if a BBU service is provided or not. It provides the consumer and end-user with choice, that is, the option to buy BBU so that they can continue to use their home and other premises phones during any power failure.
- 84 Evidence indicates that so far no ECS/ECN providers make available a BBU service to support PATS (including access to emergency calls), save in some cases for business consumers. It would also appear that the option to purchase a BBU facility through an independent retailer exists but may be limited.

## Proposed Approach and Preliminary View

- 85 It is our preliminary view that fixed PATS providers should identify, to all consumers and end-users pre contract and to subscribers during a contract change options for purchasing a battery back-up, either supplied by the PATS provider or a third party retailer. However, it will be the responsibility of the PATS provider to ensure that any BBU that they are recommending to consumers and end-users as a solution in the absence of a BBU from them directly must be compliant with the EMC Directive<sup>31</sup>.
- 86 We are of the preliminary view that if the PATS provider identifies a BBU through a third party retailer, consumers and end-users should be informed of sources for the availability of battery back-up units that set out details of the cost, capacity and power duration of the units along with installation and maintenance instructions (as set out in paragraph 67).
- 87 In the public interest there is merit in requiring fixed PATS providers to be responsible for ensuring that consumers and end-users have at least been advised of the option to purchase a BBU service either from them or a third party, as set out in the RIA, section 4.3.3 and 4.4.3.
- 88 We believe that a reasonable and precautionary principle is the option for a BBU feature for voice service to be identified to all consumers and end-users. This means that consumers and end-users will not be forced to install unwanted equipment. Additionally, this approach would allow the fixed PATS providers appropriate flexibility to minimise any costs associated with identifying options.

Q. 7 Do you agree that fixed PATS providers should identify, to all consumers and end-users pre contract and to subscribers during a contract change, options for purchasing a battery back-up, either supplied by the PATS provider or a third party retailer?

Please provide detailed reasons and supporting evidence for your view.

<sup>31</sup> Electromagnetic Compatibility (EMC) Directive: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0030&from=EN>

### 3.2.4 Potential Measures for Vulnerable Users

- 89 With respect to potential cost of any BBU offering, as set out in section 3.1.3 ComReg collected data from fixed ECS/ECN providers using our statutory powers which included cost scenarios of battery back-up and back-up duration. ECS/ECN providers estimated a cost of approximately €100 for the provision of BBU to a consumer and a cost of approximately €25 per year to maintain the battery<sup>32</sup> as set out in Section 3.1.3.
- 90 Our consumer survey showed 27% of all respondents have VoIP as a voice service. With respect to willingness to pay for BBU, of this 27%, 37% of these are prepared to spend an amount each year for BBU. 31% of these are prepared to spend up to €25 per year.
- 91 Of this 27%, 56% are not prepared to spend any amount each year for a battery back-up. Of those unwilling to spend any amount, 67% are aged 55+.
- 92 With respect to ability to pay, we considered a number of groups which may have more reliance on voice calls particularly in emergencies and where cost may be a factor in considering the BBU.
- 93 There are likely to be consumers for whom voice calls are particularly important, for example elderly consumers living alone. We considered the BBU recommended for personal alarm systems<sup>33</sup>, using fixed electronic communications, used by people who live alone, or who are alone for long periods, and note that all the alarm units work on mains electricity and have a battery back-up. The battery will automatically cut in if the power is disconnected or fails. The alarm unit warns the user if there has been a power failure or if the battery back-up is low.
- 94 We considered how utility service providers address requirements of vulnerable users and contacted CER. Consumers may register as a vulnerable user with ESB Networks by opting to do so through their electricity service provider.<sup>34</sup> ESB Networks define a 'vulnerable customer' means a household customer who is:
- a. critically dependent on electrically powered equipment, which shall include but is not limited to life protecting devices, assistive technologies to support independent living and medical equipment, or
  - b. particularly vulnerable to disconnection during winter months for reasons of advanced age or physical, sensory, intellectual or mental health.

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<sup>32</sup> In the data we collected from ECS/ECN providers under section 13D of the Act.

<sup>33</sup> Further information available from Assist Ireland and the Citizens Information Board:

[http://www.assistireland.ie/eng/Information/Information\\_Sheets/Choosing\\_a\\_Personal\\_Alarm\\_System\\_and\\_Telecare.html](http://www.assistireland.ie/eng/Information/Information_Sheets/Choosing_a_Personal_Alarm_System_and_Telecare.html)

<sup>34</sup> Further information available through ESB Networks' Vulnerable Customer Policy: <https://esbnetworks.ie/who-we-are/customer-service/vulnerable-customer-policy>

95 Another specific group are those with disabilities who, in accordance with Regulation 17 of the Regulations,<sup>35</sup> must have the ability to register their requirements through their ECS/ECN provider.<sup>36</sup> We considered the current registration process and as there is a system in place already, we consider the ability to record if, in addition to having a disability, a customer is considered vulnerable, is achievable with very little additional resources required by the ECS/ECN provider.

### Further Information

96 We are interested to gather information on specific groups who may be at a higher risk of experiencing consumer detriment during fixed service outage caused by a power outage compared to the general population and whether special measures in respect of BBU should be implemented for these, as set out in the RIA, section 4.3.4 and 4.4.4).

97 We would welcome views as to how consumers, or their nominated representatives, could identify themselves as being a vulnerable user and what registration and or certification of vulnerability would be most appropriate.

98 We would also welcome views, to take into consideration with the information collected from our consumer survey and information from providers, in respect of the cost of BBU to vulnerable users or other related issues, such as BBU duration.

Q. 8 (a) Is there a specific group or groups who are at a higher risk of experiencing consumer detriment compared to the general population in respect of this issue and where special provision in respect of BBU might need to be made for these groups?

If you are of the view that there are specific vulnerable groups we would welcome any observations with respect to:

(b) Who is best placed to consider the needs of this specific group?

(c) How those consumers could identify themselves as a vulnerable user, including, what registration and/or certification of vulnerability would be most appropriate; and

(d) Any cost or other implications for all vulnerable consumers to avail of a BBU service.

<sup>35</sup> Section 17 of the Regulations, S.I. No. 337 of 2011: <http://www.irishstatutebook.ie/eli/2011/si/337/made/en/pdf>

<sup>36</sup> ComReg Decision D04/14, ComReg Document No. 14/52 entitled "Electronic Communications:- Measures to Ensure Equivalence in Access and Choice for Disabled End-Users", dated 29 May 2014, Page 30:

# 4 Regulatory Impact Assessment ("RIA")

## 4.1 Introduction

99 This section sets out our impact assessment. Our approach follows the RIA Guidelines<sup>37</sup> published by us in August 2007 and takes into account the "Better Regulation" programme<sup>38</sup> and international best practice (for example, considering developments about RIA published by the European Commission<sup>39</sup> and the OECD). In addition, Section 13(1) of the Communications Regulation Acts 2002 to 2011 requires us to comply with Ministerial Policy Directions. In this regard, Ministerial Policy Direction 6 of February 2003<sup>40</sup> requires that, before deciding to impose regulatory obligations on undertakings, we must conduct a RIA in accordance with European and international best practice and otherwise in accordance with measures that may be adopted under the "Better Regulation" programme.

100 This RIA is an overall analysis of the likely effect of proposed regulation or regulatory change. Its purpose is to help identify regulatory options, and should establish whether the proposed regulatory approach is likely to have the desired impact in terms of promotion of the interests of consumers through ensuring that PATS providers comply with applicable regulations on the availability of services. Our aim in conducting this RIA is to ensure that all proposed measures are appropriate, proportionate and justified in light of the analysis conducted, having regard to the consumer protection concerns that have been identified in transition to advanced networks, while taking into account the twin objective of promotion of competition and the principle of technological neutrality.

101 As part of the process in selecting an appropriate regulatory approach in this instance, we set out the key policy issues and objectives below, followed by an assessment of potential regulatory options and their respective impacts for consumers, service providers as well as competition.

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<sup>37</sup> ComReg, "Guidelines on ComReg's Approach to Regulatory Impact Assessment", [ComReg Document 07/56a](#), 10 August 2007 (the "RIA Guidelines").

<sup>38</sup> Department of the Taoiseach, "Regulating Better", January 2004. See also "Revised RIA Guidelines: How to conduct a Regulatory Impact Analysis", June 2009, [http://www.taoiseach.gov.ie/eng/Publications/Publications\\_2011/Revised\\_RIA\\_Guidelines\\_June\\_2009.pdf](http://www.taoiseach.gov.ie/eng/Publications/Publications_2011/Revised_RIA_Guidelines_June_2009.pdf).

<sup>39</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "Second strategic review of Better Regulation in the European Union", COM(2008) 32 final 30.01.2008, p. 6.

<sup>40</sup> Ministerial Policy Direction made by the Minister of Communications, Marine and Natural Resources on 21 February 2003.

102 We now conduct our RIA having regard to regulatory requirements for PATS. We set out in our call for input on transition from Eir's copper network that any replacement voice service on advanced networks must comply with applicable regulations on the availability of services<sup>41</sup>. We consider other options including forbearance from regulation at this time with respect to availability of services. The following sections, in conjunction with the rest of the analysis in this Consultation represent a RIA. It sets out a preliminary assessment of the potential impact of our proposed regulatory approach for consumer protection.

## 4.2 Describe the policy issue and identify the objectives

### 4.2.1 Policy Issue

103 Regulation 16 of the Regulations<sup>42</sup> requires undertakings to ensure, to the fullest extent possible, the availability of PATS in the event of catastrophic network breakdown, or unforeseen circumstances. PATS providers must also take all necessary measures to ensure uninterrupted access to the emergency services.

104 As the market evolves and as consumers increasingly migrate to new advanced networks and services, one area of concern is the way in which telephone networks are protected from a loss of power.

105 Conventional telephone network and services ('PSTN') so far have offered relatively high levels of resilience to consumers, particularly in the event of a power failure to the home.<sup>43</sup> This is an important consideration in providing continuity of voice service including uninterrupted access to emergency services. Unlike PSTN, however, voice services over non PSTN networks are at risk of interruption. Typically, this might be caused by a failure of the electricity supply at the end user's premises. Thus, because of a power failure at the household or business premises, it would not be possible for the end-user to make voice calls, including essential calls and those to the emergency services.

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<sup>41</sup> ComReg document 16/01, Section 3.2.

<sup>42</sup> Ibid.

<sup>43</sup> In the case of PSTN telephony, power is provided to the telephone over the copper that connects it to the telephone exchange, and as a result can continue to function even when there is a power cut at the premises.

- 106 Premises with FTTH or other Non PSTN technology are less likely to have an operational PSTN line available for voice service, either because the premises is in a new-build development in which there is no PSTN line available, or because the existing PSTN phone line has been discontinued in favour of fibre or cable access service and, hence is no longer operational. In such cases, the end-users may be solely reliant on the new network to make fixed-line telephone calls, including essential calls. Given this potential lack of choice it is appropriate for us to consider the extent of consumer protection that is in place or could be put in place more formally at this time.
- 107 It is noted that similar to fibre, cable networks do not provide power to operate necessary equipment at the consumer location, including network devices (e.g., cable modems, optical network terminals) and telephones (CPE). It is furthermore noted that with respect to the use of a cordless handset with a locally powered base (e.g., DECT) the limitation outlined with respect to fibre or cable telephony may also apply to PSTN telephony.
- 108 While in practice, the risk of interruption to the voice service for end-users of fixed non PSTN networks and services could be mitigated by substitution of the fixed voice by mobile, this is dependent on coverage as well as a device that has battery sufficient to make a voice call.
- 109 This risk of interruption to the fixed voice service could also be mitigated by the use of BBU to ensure a supply of power to equipment such as consumer premises equipment (CPE), network termination equipment, routers, and VoIP gateways.
- 110 End-users may expect that the fixed-line telephone service provided by a fibre or cable network (voice over broadband or managed VOIP) would remain available in the event of a power failure in the home or premises as this capability has always been present for PSTN telephony. Therefore, in transition to new advanced networks consumers and end-users may be unaware that they must take action to ensure voice service availability in a power failure. In this context, any lack of transparency *inter alia* insufficient engagement with consumers and end-users in respect of voice service characteristics including, any differences in the experience they could expect in using replacement services, would potentially result in a misinformed choice and consumer welfare would be reduced.

## 4.2.2 Objectives

111 Our statutory objectives are to promote competition whilst promoting interests of consumers of services inter alia protecting consumer welfare.<sup>44</sup> Electronic communications services are important for all ECS stakeholders including vulnerable users who can face particular difficulties when using them.

112 Our objectives under section 12 (1) (a) (iii) of the Act in relation to the provision of electronic communications networks, electronic communications services and associated facilities include:

*“in so far as promotion of the interests of consumers within the Community is concerned—*

- (i) ensuring that all users have access to a universal service,*
- (ii) ensuring a high level of protection for consumers in their dealings with suppliers, in particular by ensuring the availability of simple and inexpensive dispute resolution procedures carried out by a body that is independent of the parties involved,*
- (iii) contributing to ensuring a high level of protection of personal data and privacy,*
- (iv) promoting the provision of clear information, in particular requiring transparency of tariffs and conditions for using publicly available electronic communications services,*
- (v) encouraging access to the internet at reasonable cost to users,*
- (vi) addressing the needs of specific social groups, in particular disabled users, and*
- (vii) ensuring that the integrity and security of public communications networks are maintained.*

**[...]**

*(3) In carrying out its functions, the Commission shall seek to ensure that measures taken by it are proportionate having regard to the objectives set out in this section.*

**[...]**

*(6) The Commission shall take the utmost account of the desirability that the exercise of its functions aimed at achieving the objectives referred to in subsection (1)(a) does not result in discrimination in favour of or against particular types of technology for the transmission of electronic communications services.”*

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<sup>44</sup> Communications Act 2002, as amended, section 12 1 (a) and (c). Also, the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011.



- 113 Our objective under Regulation 16 (1) (a) of the Regulations is to ensure that providers meet their obligations with respect to ensuring the fullest possible availability of PATS.
- 114 In addition, Regulation 14 of the Regulations specifies that undertakings providing PATS shall do so in accordance with a contract. It sets out seven specific areas that must be addressed in such a contract (See Annex 1).<sup>45</sup>
- 115 Notwithstanding, if it is considered necessary, appropriate and proportionate (following consultation) we may specify requirements for the purposes of ensuring availability and continuity of the voice service including to 112 by PATS in the event of a unforeseen circumstances such as a power failure, as set out in Annex 1.
- 116 We may also, under Regulation 15 of the Regulations, specify requirements with respect to the principle of Transparency *inter alia* '*promoting the provision of clear information, in particular requiring transparency of tariffs and conditions for using publicly available electronic communications services*'. We believe that in transition to a non PSTN choice needs to be underpinned by an understanding of what services are on offer so that end-users can make informed choices. End-users need, at a minimum, to understand any risk associated with non-PSTN powered voice services. They need to know how to protect themselves from such risks, and have a meaningful opportunity to do so.
- 117 We are seeking to ensure the fullest possible availability of PATS in particular in the event of a power failure in the home or premises. We are seeking to offer consumers and end-users of voice service protection against power failure in respect of their CPE for their telephony service where necessary and appropriate. In addition to the provisions under Regulation 16 (1) (b) of the Regulations, we have a general duty to further the interests of citizens in relation to communications matters *inter alia* section 12 (1) (a) (iii) of the Act, particularly, vulnerable users.
- 118 Any intervention by us could consist of imposing minimum *ex ante* information requirements. Thus, for example, requiring fixed PATS providers to engage in the disclosure of any risk associated with the voice service along with information on options to protect themselves from such risks. We may also impose a requirement for the provision of BBU for PATS.<sup>46</sup> However, in considering the imposition of any regulatory measures we are bound, pursuant to section 12 of the Act and Regulation 16 of the Regulations, by the principle of proportionality and technological neutrality.

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<sup>45</sup> Regulation 14 of the Regulations.

<sup>46</sup> In accordance with Regulation 16 (1) (b) of the Regulations.

119 We consider it necessary first to understand and quantify the potential harm to end-users and to assess possible mitigation techniques. The broad regulatory principles and alternative regulatory approaches that we are considering to achieve the stated objectives are outlined in the following section.

### 4.3 Identify and describe the potential regulatory options

120 In light of the consumer protection concerns above, this section provides a description of each option that we are considering for the purpose of achieving the above stated objectives.

121 We recognise that any regulatory measures should be kept to the minimum necessary to address any concerns with respect to consumer protection in an effective, efficient and proportionate manner. There are a range of potential regulatory options available to us to address in ensuring consumer protection.

122 In this regard, regulation can be considered to be incremental, such that only obligations are imposed which are necessary and proportionate to addressing any consumer protection concerns.

123 On the one hand, we may decide following this consultation that there is not a need for us to intervene at this time to implement intervention measures. The lightest regulatory approach would be forbearance at this stage and thus to rely solely on PATS providers to comply with applicable regulations on the availability of services *inter alia*, Regulation 14 and Regulation 16 of the Regulations.

124 Alternatively, regulatory forbearance could be insufficient to ensure consumer protection. Therefore, we may decide on the basis of market developments that there is at this time a need for some actions by us to ensure the fullest possible availability of PATS. Broadly, potential measures can be categorised into measures that increase information given consumers and end-users of fixed PATS; and measures that protect consumers from disruption of a fixed telephone service in the event of a power failure at the home or premises, such as, a BBU service.

125 Pursuing the wider public interest objective we could consider imposing consumer protection measures on ECS providers of PATS, such as, (i) a requirement to make available additional information in respect of BBU ("**minimum ex ante BBU information requirements**") and/or (ii) provisioning of a BBU system of a particular form with potential pass-through to consumers of all, or part, of associated costs ("**BBU requirements**").

126 For the purpose of the RIA we are considering the following four broad options:

1. Rely on existing obligations (no intervention measures)
2. Specify minimum ex ante BBU information requirements
3. Impose BBU requirements
4. Potential measures for vulnerable users

127 The question of forbearing from specifying any requirements, essentially maintaining the status quo, and the incremental imposition of one or more of the above requirements are considered below.

#### **4.3.1 Option 1: Rely on existing obligations (no intervention measures)**

128 The first option essentially is set out in Section 3.2.1. It refers to the obligations already on PATS providers to comply with applicable regulations on the availability of services and details of the services being delivered and any conditions limiting access to the services notably, Regulation 14 and Regulation 16 of the Regulations, without introduction of further measures for protecting consumer welfare.

#### **4.3.2 Option 2: Specify minimum ex ante BBU information requirements**

129 Option 2, as set out in section 3.2.2, would involve us further specifying minimum ex ante BBU information requirements. Our further intervention may be required where the approach by PATS providers to end-users information in this regard may be inadequate in the context of increasing non PSTN networks.

130 In order to ensure that sufficient information is available to consumers or end-users to make informed choices, in addition to the risk disclosure obligation we could impose on the PATS provider obligations consisting of

- a. A disclosure of risk obligation pre contract or during contract as relevant; and /or
- b. A requirement to provide consumers and end-users as well as existing subscribers with clear and transparent information on measures they may take to address risks associated with risk if interruption to the voice service.

131 For the purposes of increasing awareness of the BBU service option(s) available to end-users, how the BBU service operates including installation and other usage instructions, fixed PATS providers, amongst other things, could be required to inform consumers of:

- the implications of not having BBU during a power failure – service limitations with and without BBU;
- emergency use requirements; and
- sources for the availability of BBU units that set out details of the cost of BBU units, capacity and power duration of BBU units, installation and maintenance instructions.

132 This approach would be designed to ensure that end-users are, at a minimum, aware of the risk of interruption to their voice service including calls to 112 access during a power failure in the home or premises and are adequately informed in deciding whether or not to purchase a BBU service.

### **4.3.3 Option 3: Impose BBU requirements**

133 Under this option, we may decide where necessary and appropriate to impose on fixed PATS providers BBU requirements.

134 Further, a BBU requirement could consist of a BBU system of a specified minimum duration that support PATS (including essential and emergency calls) for a period of time in the event of a power failure at the home. With respect to costs of a BBU service, there is potential for pass-through to end-users of all, or part, of associated costs.

#### a. Mandatory provisioning of BBU with a minimum specified duration

135 Under this approach a fixed PATS provider delivering a non-powered voice service could be obliged to have available if requested by the consumer or business, a BBU service with a minimum specified duration.

#### b. Optional provisioning of BBU with a minimum specified duration

136 Under the second variant, a fixed PATS provider delivering a non-powered voice service would be required to offer all end-users, details of where a BBU, that would provide the facility to make voice calls when there was a power outage for a minimum number of hours, is available (including through a Third Party Provider). Under this approach no fixed PATS provider would be obliged to provide a BBU service directly to the end-user.

137 Under sub-option 3b, it is envisaged that the end-user would have choice to either deal directly with the Third Party Provider or the ECS/ECN provider, once the PATS provider identifies appropriate options for purchasing a BBU service.

- 138 The rationale behind this sub-option is that, many end-users, if adequately informed by their PATS providers, may understand any risk of interruption associated with non-PSTN powered fixed voice services and; can source a BBU from a Third Party Provider or the fixed ECS/ECN provider, as relevant. Alternatively, end-users may make an informed decision to communicate by mobile in the event of a domestic power failure.
- 139 Similar to sub-option 3a, the fixed PATS provider could have appropriate flexibility to pass through the cost to the end-user, though mindful of having a reasonable retail price and possibly a minimal cost for vulnerable customers, as relevant.
- 140 As set out under option 2 in section 4.3.2, the fixed PATS provider could be required to ensure that the end-user is provided with sufficient information to make a decision about the BBU service. Rather than a mandatory provisioning of a BBU service, it may be sufficient that any proposal to impose BBU requirements would specify that the fixed PATS provider give consumers an opportunity to choose whether to order their voice service with or without BBU. In practice this may mean that end-users would be informed of the BBU at the point of sale, or where there is a change in technology during their contract period and decide whether to purchase same from their chosen fixed PATS provider or through a Third Party Provider.

#### **4.3.4 Option 4: Measures for Vulnerable Users**

- 141 As more and more homes and businesses use fixed non PSTN broadband and voice over that connection, there is potentially a greater risk of power failure affecting internet connection and VoIP phones. We have a general duty to further the interests of citizens in relation to communications matters.
- 142 The rationale for Option 4 is that it may be necessary for some consumers to be better informed of possible interruption of their voice service. It may furthermore be necessary for some consumers to better understand any options for a BBU service including practices for prolonging battery life, where to purchase battery replacement, and replacement instructions. As set out under option 2, end-users must be adequately informed by their PATS providers of the risk of interruption to their voice service so that they can decide whether or not to purchase the voice service, including a BBU service. However, this approach may not of itself have a sufficiently positive impact on vulnerable consumers in particular.
- 143 If we were to decide to forbear from imposing a mandatory requirement to install a BBU service for all end-users, option 2 would likely be important to end-users' ability to successfully self-provision a BBU service. Option 2 may favour action by us to specify requirements for the purpose of ensuring that all end-users, at a minimum, understand any differences in voice services and, therefore, the potential risks associated with non-PSTN powered fixed voice service, know how to protect themselves from such risks, and have a meaningful opportunity to do so.

144 There is likely a risk differential between end-user segments. Vulnerable users including those that have identified themselves to their electricity provider and who receive a Priority Assistance service, may have a higher risk to detriment compared to the general population. More rural areas may have less choice in terms of mobile (coverage) or operational PSTN connection. On this basis, and notwithstanding that the latter category of end-user may be adequately informed, this occupant will, at a minimum, likely require the BBU capability in order to preserve their ability to make calls including essential calls.

145 Additionally, therefore, it may be necessary and appropriate to mandate the supply of some level of a BBU service. Certain consumers may be vulnerable to detriment on a more persistent basis – especially if a person has a life threatening medical condition. Together with a minimum ex ante BBU information requirement, we could consider imposing an optional provision of BBU for vulnerable users, if that subscriber requested it.

146 Having identified and described each of the options, the next step is to analyse each option in turn with respect to the potential impact on stakeholders and the impact on competition.

## **4.4 Determine the impacts on stakeholders**

147 For the stakeholder analysis, there are 3 groups to consider: consumers, existing operators and new entrants.

### **4.4.1 Option 1: Rely on existing obligations ('no intervention measures')**

148 To maintain the status quo would mean relying solely on Regulation 14 as well as Regulation 16 of the Regulations without us at this time specifying further requirements for end-user protection.

149 There are two aspects to this option – forbearance from (i) imposing minimum ex ante information requirements as well as (ii) mandating the supply of some level of a BBU service.

#### **Benefits**

150 The number of potential end-users negatively affected may be relatively small because non PSTN deployments are not currently on any significant scale. However, it is anticipated that there will be more widespread and increasing rollout of non PSTN networks, including on foot of the NBP in 2017 and beyond.

- 151 The majority of voice services currently are based on PSTN technology (see Figure 1). Home landline telephone service ownership remains significant at 67% nationally, with little variance between urban (71%) and rural users (61%).<sup>47</sup>
- 152 In practice, the risk of interruption to the fixed voice service could be mitigated by the use of alternatives, such as, mobile phones. Evidence indicates that take up or usage of mobile services is almost universal and that there are no significant variances between urban and rural users.<sup>48</sup> In light of this, today most voice users would appear to have an alternative in a scenario of a power failure to the home or premises. It can be argued that this makes the system as a whole more resilient as users generally have two or more relatively independent means of making calls including essential calls— 63% of households combine a fixed and mobile phone. However, issues with indoor coverage may lessen the effectiveness of the use of mobile instead of fixed to make essential calls in the event of a power outage.
- 153 We recognise the increasing use of mobile and that some users of the VOIP service may well be unconcerned about a BBU service, choosing instead to rely on their mobile service. Our omnibus survey (2016) reports that the majority of respondents (97%) believe that if the home telephone is not working (e.g. if there is a power failure in the home) they have through the mobile phone the potential to make an essential call. Mobiles have their own batteries rather than relying on line or mains power, as fixed phones do. This is an advantage over in-home cordless DECT phones, but the limited battery life, particularly in the case of smartphones, means that corded fixed phones are still likely to be more reliable in longer power cuts. In addition coverage issues including inside buildings may cause issues.
- 154 Further, as set out at section 3.1.5 the information provided by ESB Networks shows that 32% of power failures in 2015 were restored within 2 hours (consistent with previous years) hence power outage durations have been relatively stable over recent years).<sup>49</sup> We furthermore note that the combined risk of a power failure and need to call emergency services is likely to be a low probability; the average number of times a customer in Ireland experienced a power outage in 2015 was 1.12 (interruptions per customer per year).<sup>50</sup>

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<sup>47</sup> ComReg's 2015 ICT consumer survey, slide 10 and Slide 16.

<sup>48</sup> ComReg's 2015 ICT consumer survey, slide 16 and slide 58.

<sup>49</sup> This information represents outages which excludes High Voltage transmission (that tends to result in shorter duration outages for large customers).

<sup>50</sup> According to the information provided by ESB networks, 2016.

155 Finally, consumer welfare could be enhanced where they continue to independently source the CPE solution (either through their PATS providers or from an independent retailer) that best suits their personal requirements. PATS providers may not directly provide CPE for consumers connecting to the fixed voice service. Consumers generally have control and choice over CPE including DECT phones. According to our omnibus survey (2016), the majority (79%) of traditional telephone users have opted to use a cordless phone. In the absence of consumer complaints, so far, any limitation which exists for DECT phones would not appear to be problematic in practice.

156 Additionally, forbearance or maintaining the status quo could be expected to be a benefit for the industry.

### Costs

157 As the market evolves, the cost of maintaining the status quo is that consumer protection against a power failure in respect of continuity of fixed voice service, including, 112 access may not be sufficient. While there may be a relatively low level of potential harm to consumers generally at this time, there may nevertheless be substantial risk to vulnerable users.

158 Additionally, the number of people potentially affected in the future by a disruption to voice service may increase with roll out to continue to be VOIP services on a more significant scale. We expect PSTN voice replaced by voice services on broadband networks, managed and unmanaged (as one of a number of applications). Figure 1 has indicated that VOIP is increasing, and at 33% of all voice subscriptions (primarily Virgin Media subscribers in urban and sub urban areas) is currently a significant minority. As stated, next-generation, fibre-based broadband networks, as optical fibre does not conduct electricity.

159 End-users who retain a plug in phone or have a mobile alternative are not likely at risk of consumer detriment. Today, however, many households do not use a traditional corded phone plugged directly into a telephone wall socket, rather only use cordless phones.<sup>51</sup>

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<sup>51</sup> According to our omnibus survey (2016).



160 The consumer welfare impact is likely to be negative where consumers are not adequately aware or, sufficiently informed by the fixed PATS provider at the point of sale or pre contract signing of the risk of interruption to the voice service. Of the respondents who include VoIP as a phone service (27%), a quarter (25%) are unaware that a VoIP service might not work during a power failure in the home. In that context, and more generally, the consumer will not be able to make informed choices including whether or not to purchase a BBU service. This will likely result in consumer detriment and, particularly in respect of vulnerable users. They are most likely to require a BBU service to ensure continuity of voice service and ability to make essential calls.

161 By maintaining the status quo PATS providers are allowed in the first instance discretion to devise their own approach in relation to these matters. As such, it has no additional costs incurred and would have no incremental impact on fixed PATS providers.

### **Net welfare**

162 Some fixed PATS providers could in the future in delivering a VoIP service provide effective information to their end-users as well as offer a BBU service, as relevant. Adequately informed, the end-user can make an informed choice as to whether or not to purchase the services including a BBU service.

163 We expect there to be a period during which both PSTN voice telephony and non PSTN are available to end-users, however, there are consumer protection concerns.

164 We observe that the cohort of consumers and end-users most likely at risk of losing continuity of service and ability to make essential calls and to have 112 access during a power failure in the home or premises are those who either have no PSTN service available or, in the immediate future no longer have, alternatives that come with line powering capabilities (i.e. PSTN copper); who are in more remote rural areas with inadequate indoor mobile coverage and therefore primarily dependent on the fixed network and; vulnerable users who remain dependent on fixed voice to stay in contact, make essential calls or to access essential services. In these circumstances, some consumers are likely to need greater protection and assistance as the market evolves in the context of preserving the voice service.

165 Our guiding principle is that the transition to advance networks and services should not result in voice service and 112 access being more vulnerable than when consumers used the PSTN voice network and should not make citizens less safe. In this respect, we expect PATS providers to comply with their existing obligations in respect of the availability of services.

166 On the basis of the principles set out above, the consumer welfare impact, absent any additional consumer protection measures, is likely to be negative as the consumer protection costs are not limited. Thus, for example, there is substantial risk to vulnerable users with a disruption of the fixed home phone service. In addition, in transition to new technology solutions end-users may have the wrong expectation that their voice service will continue to function in a similar way to the more conventional PSTN voice service. This would not allow them to make informed decisions concerning their voice service, including a requirement for additional protection i.e. BBU. Along with a level of consumer detriment, there may be a (perceived) barrier to migrating to non PSTN and services. On the other hand, however, maintaining the status quo will have no incremental impact on PATS providers.

167 On balance, complete forbearance by us at this time is not likely to fully meet the objectives, set out at Section 4.2.

#### **4.4.2 Option 2: Specify minimum ex ante BBU information requirements**

168 This option considers if it is necessary, appropriate and proportionate taking into account the requirements as set out in Regulation 14, 15 and 16 of the Regulations to further specify requirements<sup>52</sup>.

169 Our omnibus research (2016) indicates that consumer awareness of a possible non-availability of the voice service is not particularly extensive even among VoIP users.

170 The objective of option 2 would be to provide information in respect to BBU to end-users before the purchase of a non PSTN PATS. In addition to Regulation 14 contract requirements which ECS/ECN providers must already comply with, we could require fixed PATS providers to notify end-users of, amongst other things,

- the availability of back-up power purchasing options - examples of retail sources for associated equipment, which may include third-party vendor sources if providers do not offer such equipment themselves; and
- other detailed BBU information, *inter alia*, use conditions and effect on power source effectiveness; power source duration and service limitations; testing, monitoring and replacement details including equipment and batteries as necessary.

171 This information could be required to be provided by the fixed PATS providers during the sales process and if there is a change to conditions in access during the contract period.

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<sup>52</sup> Pursuant to Regulation 15 of the Regulations.

## Benefits

- 172 In light of current market developments set out in Section 3.1, it would appear that there is a relatively low level of potential harm to consumers generally, though we envisage this level can potentially increase as non PSTN networks become more prevalent. Notwithstanding, consumer welfare could be expected to be enhanced by improving the information flow about (i) the risk of interruption to service in a power failure at the premises as well as (ii) the steps that could be taken to address any such risks, including, options for the purchase of a BBU service should their circumstances require it.
- 173 Better information to end-users could be expected to allow them to more fully assess their needs or otherwise for their voice service including a BBU service. This will enable them to make informed decisions, particularly where such information was not previously available. This may be to choose to consume a VoIP service and how to use it; to elect or not to have a BBU service to address their particular needs and /or; to manage expectations about reliability and functionality in their household or at their premises through suitable alternative approaches including a mobile phone.
- 174 Brochures accompanying DECT phones raise awareness that they require a power source and there should be back-up if power fails. This has not stopped people from using these handsets for voice calls including making essential calls and is a good example of where end-users have exercised effective and informed choice.

## Costs

- 175 The cost of not increasing the information to end-users is that detriment can arise to the extent that there is insufficient information in respect to power outage risks and BBU for fixed non PSTN services. As such, end-users have now come to expect many features associated with PSTN technology to be standard in fixed voice services. However, non PSTN fixed services may offer different services than conventional fixed voice services, for example, availability of 112 and reliability of the service. This creates a risk of end-users being uninformed or insufficiently informed and protected.
- 176 Another potential cost of not increasing the information to end-users is that PATS providers may have little incentive to fully inform end-users of a limitation in the VoIP service or to minimise it. In this context, end-users could not make informed choices. They may be improperly informed of any differences in the (replacement) service, including possible limitations during a power failure and the need or otherwise to purchase a BBU service.

177 There would likely be a reduction in consumer welfare in the absence of high levels of awareness among consumers; where fixed PATS providers are insufficiently transparent in offering a VoIP service and; in the context of proactively removing the consumer's PSTN line. Our omnibus research shows that while 7 in 10 respondents have a home phone service, little over a quarter report having a VoIP phone service. Of these users, 25% are unaware their VoIP service might not work during a power failure in the home. On the other hand, 63% of VoIP users claim to be aware that they may need to have a BBU service to continue the voice service. This suggests potentially a substantial lack of consumer awareness. Or at a minimum, the level of consumer understanding of CPE, BBU issues may not be uniform among consumers.

178 On the other hand, specified minimum ex ante BBU information requirements are likely to have minimal cost impacts on PATS providers given that the process and systems required to implement transparency obligations<sup>53</sup> already exist. PATS providers should already furnish end-users with clear and effective information upon initiation of service, and are free to include additional BBU information with the other materials, removing the need for a special cost of distribution. Any incremental costs to be paid by the PATS providers complying with any additional information requirements would not be considered overly burdensome.

### **Net welfare**

179 The net effect of the benefits and costs of improved ex ante information is likely to be positive such that overall consumers and end-users as well as industry gain from the measures.

180 Measures that increase appropriate information available to consumers and end-users would empower them to make informed choices. It would also act as a safeguard for high risk vulnerable users, supporting their need for continuity of service and 112 access, as well as access to other ancillary services. If adequately informed consumers generally would to a large degree likely be protected against detriment. They would be sufficiently aware of any service limitations, know how to protect themselves from such risks, and have a meaningful opportunity to do so. We believe that increasing transparency could help reduce the potential for consumer detriment including any (perceived) barriers to taking up a VoIP service.

181 Additional information provisions, appear to have relatively limited costs, such that the net effect on consumer welfare would be expected to be positive.

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<sup>53</sup> Pursuant Regulation 14 of the Regulations.

### 4.4.3 Option 3: Impose BBU requirements

182 Our objective under Regulation 16 (1) (b) of the Regulations is to ensure that PATS providers meet their obligations with respect to ensuring the fullest possible availability of PATS.

183 In the absence of line powering, BBU is an option to help ensure continuity of voice service in the case of a power failure at the home. We consider that potential regulatory options for a BBU service can fall broadly into two categories:

- a. Mandatory provisioning of a BBU service with a minimum specified duration
- b. Optional provisioning of a BBU service with a minimum specified duration (upon request, opportunity to avail after being informed).

a. Mandatory provisioning of a BBU service with a minimum specified duration

184 This option would mandate fixed PATS providers offering a non-powered voice service to install a BBU service for every consumer in addition to having a specified duration of BBU. Evidence indicates that so far no PATS provider makes available a BBU service to support PATS (including access to emergency calls), save in some cases for business consumers.

#### Benefits

185 Mandatory install of a BBU service could be expected to enhance consumer welfare generally in the context of transitioning to non PSTN. The vast majority of consumers are currently connected to the conventional PSTN voice service and the nature of this service means that a home phone will still work in a power failure (if using a non-dect handset). When switching across to advanced networks and VoIP services, this is something a significant number of consumers might take for granted (i.e. overall consumer expectations regarding residential voice may not be aligned with ongoing technology transitions).

186 We recognise that mobile penetration levels are over a 100% and, hence, many consumers may have an alternative battery based access path to making calls, including essential calls. However, as set out above, mobile coverage may deteriorate indoors (compared to outdoors), depending on the technology (2G or 3G) and the network operator. Moreover, the local mobile networks can be overwhelmed in the event of adverse events and/or prolonged power failure.

187 A significant number of end-users have a cordless phone in the home or premises and may be unable to make calls during a power cut (as the device that connects to the phone line requires mains power to work) unless they plug in a traditional handset.

188 Additionally, the number of people potentially affected in the near future by a disruption to voice service may increase with roll out of the VOIP service on a more significant scale. As the market evolves, the level of potential demand by residential users for a BBU service may increase – especially for users who prefer a safety net of a working home or premises phone during a power failure to call the power company and or make essential calls (i.e. vulnerable user). We furthermore note from our omnibus survey (2016) that nearly 4 in 10 users of VoIP services (37%) are prepared to spend each year for a battery pack for the service.

### Costs

189 The cost of a mandatory supply of a BBU service for all consumers and end-users of PATS provided by non PSTN, regardless of whether they requested it would likely be material.

190 To the extent that any cost of compliance is significant and, the pass through to consumers and end-users is considerable, the additional consumer surplus expected from the measure would be reduced. We note from our omnibus survey (2016) that in general consumers indicate a low willingness to pay for BBU – over 50% of VoIP users are not prepared to buy a battery pack for the service. Therefore, mandating the supply of BBU to all consumers and end-users ('one size fits all') could present a barrier to taking up a VoIP service and potentially inhibit consumers and end-users from migrating to advanced networks more readily and trying out these services.

191 There are other potential costs to consumers and end-users with a mandatory install of a BBU service, including, for example:

- a cost of an additional transaction phase for consumers who may wish to use the VoIP service;
- because of likely differences in consumer preferences a "one-size fits all" solution may not best serve consumer interests;
- consumers and end-users may have less control or choice over CPE and they could be forced to purchase a service they do not want or need; and
- a loss to consumers and end-users who would have used the service without a BBU service but do not take up the service when BBU is in place. Consumers and end-users may have concerns over BBU (e.g., the unit feature are not to their liking, hassle costs of moving the unit once installed or replacing batteries etc.).

192 While BBU provides some resilience against domestic power cuts, it has some potential downsides. For example:

- it may not work when required because the batteries have not been replaced or been maintained properly;
- the batteries will only operate for a limited period of time. Hence, for prolonged power cuts, the back-up facility offers no protection; and
- the batteries are unable to protect all the devices that are connected to the phone line. For example, the significant numbers of consumers and end-users who only have a cordless phone in the home are unable to make calls during a power cut, as the device that connects to the phone line requires mains power to work.

### **Net welfare**

193 While overall end-users should gain from this measure, the cost burden of providing a BBU solution to all consumers and end-users regardless of whether they requested it may outweigh the current number of affected users and or coverage areas. Further, recognizing that consumers and end-users may have different preferences for back-up power, a “one-size fits all” solution may be inappropriate and could disserve consumer interests. The overall impact of a mandatory installation of a BBU service will depend primarily on the degree of hassle/transaction costs, consumers underlying BBU valuation and the magnitude of PATS Providers BBU costs compared with consumer benefit.

- b. Optional provisioning of a BBU service with a minimum specified duration (upon request, opportunity to avail after being informed)

194 Under this variant, fixed PATS providers would be obliged to identify, to all consumers and end-users pre contract as well as to subscribers during a contract change, options for purchasing a battery back-up. In practice, PATS providers offering a non-powered voice service would at the point of sale (or during a contract change) be required to ensure that a technical solution for back-up power is made available for consumers to access and purchase optionally if they so elect, at their own expense, either directly or from a third party retailer.

195 The measure does not place any obligation on the consumer or end-user to purchase a BBU service; further, the PATS provider would not be obliged to supply a BBU service directly to the consumer; the obligation is placed on the PATS provider not providing line-powered service, to make information in respect to BBU available to the consumer as set out at paragraphs 65 and 66, and identify options for purchasing a BBU service.

196 This obligation would mean that fixed providers of PATS services would be required to have identified at least one technical solution capable of supporting a minimum number of hours of uninterrupted voice service. We would refer to the information received from ESB Networks (section 3.1.5) in this regard.

### **Benefits**

197 The availability of a BBU service, whether provided by the PATS provider or a third party, on an opportunity to avail after being informed basis, is likely beneficial to potential consumers and end users as well as existing subscribers. It recognises that they may have different preferences for back-up power. This measure could ensure that consumers and end-users, who so elect, can obtain BBU simply and conveniently when activating a voice service and similarly the case for subscribers. As the take up of the VoIP service increases, a BBU service upon request would make the consumer and end-user more aware of the effect on the retail product if a BBU service is provided or not. It provides the consumer with choice, that is, the option to buy BBU so that they can use their home phones during any power failure. Adequately informed, the consumer can make an informed choice as to whether or not to purchase the services including a BBU service.

198 Such approach can be welfare enhancing as the decision to purchase a BBU service from the PATS providers would be up to the consumer and end-user or, subscriber– they would not be forced to purchase a service they do not want or need. However, a BBU service would be available for consumers and end-users who do wish to purchase the BBU to meet their particular needs.

199 There are likely to be special cases in which voice calls are particularly important – especially if someone in the house has a life threatening medical condition. Maintaining the availability of PATS to the fullest extent possible is important to those particularly vulnerable to disconnection for reasons of, amongst other things, those dependent on life supporting equipment, are of advanced age or with a disability. This consumer may be reliant on the home phone service and may desire additional protection. Because of this it is likely that their valuation of the continuity and reliability of the fixed voice service would be of higher value than other consumer types.

200 Similar to increasing transparency, optional provisioning of a BBU service of a minimum specified duration could help reduce any (perceived) barriers to taking up a VoIP service and hence help motivate consumers to migrate to advanced networks more readily.



201 Additionally, an optional BBU service is likely to be beneficial to the industry. The decision to provide BBU for CPE is left to the VoIP service provider, who may provide such a facility as part of a service offering. This would allow fixed PATS providers appropriate flexibility to minimise any costs as well as to better serve and right size their consumers at the point of sale. Thus, for example, the PATS provider can communicate with consumers as well as their subscribers, as relevant, and advise an option that best suits their personal needs or a more cost effective solution.

### **Costs**

202 It is difficult to envisage any significant consumer detriment with the introduction of an optional BBU model. On the contrary, absent such a measure, there is a risk that consumers and end-users would take for granted that a home or premises phone will still work during a power failure. Significant consumer detriment may arise where the safety net of a working home or business phone during a power failure to make essential calls including to emergency services is likely critical. More rural areas may have less choice in terms of mobile (coverage) or operational PSTN connection which is particularly important in the context of vulnerable users. Further, the local mobile networks can be over whelmed in the event of a widespread emergency.

203 On the other hand, consumer welfare from the measure could be reduced if any potential higher costs incurred by the PATS provider in offering BBU upon request are unreasonably passed through to consumers or, if it creates unnecessary transaction costs. In that context, the consumer may be hindered from taking up the BBU service and would disserve consumer interests.

### **Net welfare**

204 In the public interest there is merit in requiring fixed PATS providers to be responsible for ensuring that its consumers and end-users are aware of the options to purchase a BBU service either from the PATS providers or a third party. We are concerned about consumers and end-users who are particularly vulnerable to non-availability of the voice service.

205 On balance, we consider that the benefits of obliging fixed PATS providers to identify options for a BBU service likely out-weights associated costs. The option for continuity of a back-up power equivalent service for the purposes of supporting fixed PATS (including essential and emergency calling) during a power failure would promote consumer welfare. It cannot be acceptable that the deployment of new and more advanced networks and technologies to result in a lesser voice service including reduced safety of life. This Option would be a lower administrative burden on PATS providers and less costly including in terms of potential compliance costs when compared with that of providing a widespread BBU solution (option 3a).

#### **4.4.4 Option 4: Measures for Vulnerable Users**

206 As the transition to new advanced networks and take up of VoIP accelerates we would anticipate that the industry would be responsible for ensuring that its consumers and end-users have relevant information including the options to purchase back-up power, either from the service provider or a third party retailer.

207 It may be necessary for some consumers to be better informed of possible interruption of their voice service. It may furthermore be necessary for some consumers to better understand any options for a BBU service including practices for prolonging battery life, where to purchase battery replacement, and replacement instructions.

208 As set out under option 2, consumers must be adequately informed by their PATS providers of the risk of interruption to their voice service so that they can decide whether or not to purchase voice service, including a BBU service. However this approach may not of itself have a sufficiently positive impact on vulnerable consumers, as set out at paragraph 144 above. In these circumstances, some consumers are likely to need greater protection and assistance as the market evolves in the context of preserving the voice service.

209 Therefore, we are seeking further information on aspects related to vulnerable consumers at this stage, as set out in section 3.2.4.

#### **4.5 Determine the impacts on competition**

210 In exploring the various regulatory options, the previous sections have addressed the potential impacts of the proposed regulatory changes on both end-users and fixed PATS providers. We now consider whether each option is likely to have a positive or negative effect on competition. Thus for example, is there the potential for competitive distortion, will new entrants be treated in the same way as existing operators as relevant etc.

211 The proposed interventions could involve some implementation and operational costs for fixed PATS providers, such as, in updating advertising/promotional materials or implementing a relevant sales process. Notwithstanding, these potential impacts, respecting the principles of proportionality, non-discrimination and technology neutral, any proposed enhanced regulatory measures would apply as appropriate to all ECS/ECN providers providing fixed PATS including (managed) VoIP services.

212 While certain providers may have a greater share of fixed non PSTN voice consumers currently, it is anticipated that PSTN consumers will increasingly migrate to VOIP services in the near future. The regulatory proposals are intended to be imposed on all fixed PATS providers and to create greater transparency for consumers and end-users with respect to voice service characteristics, rather than targeting any one access technology. Therefore, the potential effect of our proposals outlined in this consultation, where the approach by fixed PATS providers to BBU is somewhat insufficient to protect consumers and end-users at this time, is to raise the level of transparency across all fixed PATS providers. The proposed minimum ex ante BU information requirements may therefore be considered relatively neutral in relation to competition between fixed PATS providers.

213 It may even be argued that the enhanced transparency measures should help to promote competition between service providers as consumers and end-users would be better informed of the service characteristics including any potential limitation and options available to them to mitigate interruptions. This would mean that the consumers and end-users have a better understanding and awareness such that they can better choose according to their own valuation (the price and quality) of service offerings. The proposed regulatory changes should therefore perform well in terms of better equipping potential consumers and end-users as well as existing subscribers to make competitive or better informed choices based on the merits of the service offering as well as their particular needs including, a BBU service. Improved transparency through better information should thus help promote price competition and service innovation among fixed PATS providers, in turn, generating further benefits for consumers over the medium to longer term.

214 Furthermore, by reducing a risk of interruption of the voice service for a period of time, the proposals in respect of BBU requirements may be viewed as providing a more secure commercial and regulatory environment for fixed PATS providers to operate and invest in, thereby providing greater revenue certainty and supporting more efficient and sustainable competition over the longer term.

215 As also noted above, in the long term, given increased consumer confidence and a reduction in risk of consumer harm, consumers and end-users may also be more minded, if not having done so already, to access and use the products and services that the industry has to offer, including a BBU service, potentially leading to increased revenues and increased market entry. The proposed measures would likely reduce any (perceived) barriers to taking up a VoIP service. This will, in effect, grow competition and innovation as firms not already in the industry could see it as a favourable and positive place to do business.

## 4.6 Assess the likely impacts and choose the best option

216 This section of the RIA contains an overall assessment of the impacts of each option. On the basis of this assessment, the options have been ranked in order of preference.

### Options and criteria

217 As set out in section 4.3, we consider that the potential options for protecting consumer welfare fall into four main categories.

218 Each of these options will have consequential implications on the parties involved in different ways and to different extents. We believe that the principal criteria that reflect the consequences of further specifying measures to be complied with, such as, disclosure and or some level of BBU on both end-users and fixed PATS providers are:

- the level of protection afforded by the solution with respect to the risk that such protection would be called upon;
- the costs associated with the provision of the solution, and the possible risk to infrastructure investment and competition that may result;
- the costs and practicalities associated with the maintenance (i.e. replacement) of batteries, and the risk and consequences if such maintenance does not occur; and
- the issues that could arise in accommodating the solution by consumers and the potential implications for the adoption of a fibre connection and VoIP service.

219 We have taken into account the above criteria in assessing the options for our impact assessment.

### Ranking the options

220 Option 1 (no intervention measures) is the counterfactual or benchmark against which we assess the incremental net effects of other potential options. This option would be the lightest regulatory approach and would rely solely on PATS providers to comply with applicable regulations on the availability of services inter alia, Regulation 14 and Regulation 16 (1) (a) of the Regulations.

- 221 It can be argued that the benefits of the conventional voice service are at this time sufficiently great to offset potential costs of any limitation with respect to VoIP services. There is also a requirement on ECS/ECN providers to disclose risk of interruption to the voice service within the contract. Additionally, some fixed PATS providers could in the future in delivering a VoIP service provide effective BBU information to their potential end-users and subscribers as well as offer a BBU service, as relevant. However, there are consumer protection concerns. Some consumers, including vulnerable users, are likely to need greater protection and assistance as the market evolves in the context of preserving the voice service and ability to make essential calls.
- 222 Our guiding principle is that the transition to advance networks and services should not result in continuity of the voice service including to 112 being more vulnerable than when end-users used the PSTN voice network and should not make citizens less safe. On the basis of these principles, the consumer welfare impact, compared to option 1 and absent any additional consumer protection measures, is likely to be negative as the consumer protection costs are not limited. On the other hand, maintaining the status quo will have no incremental impact on PATS providers. On balance, complete forbearance by us from further specifying measures at this time is not likely to fully meet the objectives, set out at Section 4.2.
- 223 We see appropriate end-user information as a critical element of our overall approach. Absent baseline information there may be a lack of awareness and or confusion in transition to new access technologies and services.
- 224 Option 2 considers it in the public interest to identify minimum information that must be communicated to end-users regarding back-up power. Informing end-users of the circumstances under which their voice access service is not available does not adequately inform an end-user on how to purchase, efficiently use, monitor, or replace back-up power at the consumer's or end-user's premises.
- 225 Thus, availability of clear and accurate information pre contract or, in the event of a change in access during a contract period, related to CPE back-up power from reliable sources, is an important means to empower end-users. Equipped with information as described at paragraphs 65 and 66, all consumers and end-users, as well as existing subscribers, will be in a better position to make decisions on whether or not to purchase back-up power and conduct regular maintenance in order to ensure voice access during power outages.

- 226 Additional information provisions would ensure that overall consumer expectations regarding the voice service are aligned with ongoing technology transitions. Absent a minimum ex ante BBU information requirement on providers of voice services (option 2), many may not provide their end-users with clear and effective information, including, in relation to the potential need for BBU or how to self-provision this service, as relevant. We believe that increasing transparency could help reduce the potential for consumer detriment including high risk vulnerable users and reduce any (perceived) barriers to taking up a VoIP service. The proposed baseline information measures themselves appear to have relatively limited costs on consumers as well as on industry, such that the net effect of option 2 on consumer welfare would be expected to be positive.
- 227 Mandatory install of a BBU service (option 3a) could be expected to enhance consumer welfare generally in the context of transitioning to non PSTN networks. Overall consumer expectations regarding residential voice may not be aligned with ongoing technology transitions.
- 228 While overall consumers should gain from this measure, the cost burden however on fixed PATS providers of providing a BBU solution to all consumers, regardless of whether they requested it, may outweigh the current and future anticipated number of affected users and or coverage areas. Many consumers may have an alternative access path to making calls, including essential calls via their mobile service. Moreover, a significant number of consumers and end-users have only a cordless phone in the home or premises and may be currently unable to make calls during a power cut (as the device that connects to the phone line requires mains power to work).
- 229 Mandating PATS providers to install a BBU service could also be beneficial to industry in the context of helping to reduce any (perceived) barriers to taking up a VoIP service. However, recognizing that end-users may have different preferences for back-up power, a “one-size fits all” solution may be inappropriate and could disserve consumer interests. The overall impact of a mandatory installation of a BBU service will depend primarily on the degree of hassle/transaction costs, end-users’ underlying BBU valuation and the magnitude of PATS providers’ compliance costs compared with consumer benefit.
- 230 Notwithstanding this, the number of people potentially affected in the near future by a disruption to voice service may increase with roll out of the VOIP service on a more significant scale. As the market evolves, the level of potential demand by residential users for a BBU service may increase – especially for users who prefer a safety net of a working home or premises phone during a power failure to call the power company and or make essential calls (e.g. vulnerable user).

231 Evidence indicates that no PATS providers of residential voice currently offers a BBU service or makes available information in that regard to consumers, although some may offer it to business consumers. It would also appear that the option to purchase a BBU facility through an independent retailer exists though may be limited. Consequently, if the decision to provide BBU for CPE is left to the PATS provider, there is a risk that they may not offer some level of BBU to consumers, in particular, to vulnerable users.

232 Sub-option 3b indicated that in the public interest there is merit in requiring fixed PATS providers to be responsible for ensuring that its consumers and end-users as well as, their existing subscribers in the event of a service change during the contract, are made aware of options to purchase a BBU service either from the PATS providers or a third party.

233 We are concerned about consumers who are particularly vulnerable to non-availability of the voice service and seek further view on this (option 4).

234 It is difficult to envisage any significant consumer detriment with the introduction of an optional BBU model. Such an approach can be welfare enhancing as the vulnerable users in particular would be informed by their chosen PATS provider at a certain stage (e.g. service activation) of the options for a BBU service. Compared to a mandatory install of BBU (sub Option 3a), an opportunity to avail after being informed approach would likely be more convenient and less burdensome for consumers. No consumer will be forced to purchase unwanted equipment.

235 Additionally, an optional BBU service is likely to be beneficial to the industry. This would allow the fixed PATS providers appropriate flexibility to minimise any costs as well as to better serve and right size their consumers at the point of sale. This option would be a lower administrative burden on PATS providers and less costly including in terms of potential compliance costs when compared with that of providing a widespread BBU solution.

## **Conclusions on the best and preferred option**

236 In this light, our proposal is to adopt possibly a combination of options 2 and 3b as it likely represents the more appropriate and proportionate regulatory approach. So far, the evidence indicates that PATS providers do not give residential consumers information related to back-up power or offer a BBU service. A package of measures consisting of disclosure obligations as well as BBU measures may be necessary and appropriate to address the potential challenges and issues, to ensure a high level of consumer protection whilst simultaneously minimising any potential barriers to competition and innovation.

237 Adopting minimum BBU information requirements, in addition to the disclosure requirement, would be designed to ensure that both current and new consumers and end-users, at a minimum, understand their options with respect to back-up power and, are aware of the consequences of their decisions whether, and to what extent, to purchase back-up power. As the transition to new advanced networks and take up of VoIP accelerates we would anticipate that the industry would be responsible for ensuring that its consumers and end-users at least have some option to purchase back-up power, either from the service provider or a third party retailer. This is a reasonable requirement as it is technology neutral and on all fixed providers of voice service to notify their end-users of the capabilities of their service including, making essential calls during a power failure.

238 Overall, the proposed interventions would be expected to enhance consumer welfare through protecting consumers, particularly vulnerable users against interruption to their voice service. As such, the combined proposed approach, of a minimum BBU ex ante information requirement and the optional BBU model, complies with our statutory objectives to protect consumer interest whilst promoting competition and investment. Moreover, it is expected that the proposed measures will be proportionate on fixed PATS providers. The approach complies with principles of objectivity, proportionality and transparency as well as our guiding principle that transitions to new advanced networks and services should not result in the fixed voice service being more vulnerable than when consumers used the more conventional service.

239 We consider that this approach will, for the time being, provide an appropriate and balanced regulatory framework to BBU matters. We expect that as technology and the market developments evolves further it may be appropriate to make modifications to regulation, as relevant. While ComReg is not proposing associated measures at this time, it is seeking views from stakeholders in relation to vulnerable users that may have special requirements in relation to this issue.

240 We invite comments from interested parties on the above preliminary RIA and its underlying analysis and to submit any comments or information in relation to it that they believe we should consider in finalising the most appropriate regulatory approach to this policy issue.

Q. 9 Do you agree or disagree with ComReg's draft high level assessment of the impact of the proposed regulatory options? Are there any other factors that you consider to be relevant?

Please explain your answer providing appropriate evidence and costings, if applicable.



## 5 Draft Decision Instrument

### 1. STATUTORY FUNCTIONS AND POWERS

1.1. This Decision and Decision Instrument is hereby made by ComReg for the purposes of imposing obligations, requirements, and specifications for the provision of battery back-up services.

1.2. This Decision and Decision Instrument is made:

- i) Pursuant to and having regard to the functions and objectives of ComReg set out in sections 10 and 12 of the Act and Regulations 12, 13 and 16 of the Framework Regulations;
- ii) Pursuant to the functions and powers conferred upon ComReg by Regulation 15 (6) (c) and (d) and 16 (1) (b) of the Universal Service Regulations;
- iii) Having had regard to the views of interested parties, including Undertakings and the submissions they made in response to ComReg Document No. 16/109;
- iv) Having had regard to The Government's National Broadband Plan as published by the Department of Communications, Energy and Natural Resources ("DCENR");
- v) Having had regard to the analysis and reasoning set out in ComReg Document No. 16/109 and Decision • (which shall, where the context admits or requires, be construed together with this Decision Instrument).

### 2. DEFINITIONS AND INTERPRETATION

2.1. In this Decision Instrument, unless the context otherwise admits or requires, the following terms shall have the following meanings:

'Act' means the Communications Regulation Act 2002 (as amended);

'Battery Back-Up' means a back-up power facility that ensures users have the ability to make calls over their fixed PATS in the event of a power failure which includes, but is not specifically limited to, access to emergency services;

'Call' means a connection established by means of a publicly available electronic communications service allowing two-way voice communication;

'ComReg' means the Commission for Communications Regulation, established under section 6 of the Act;

'Consumer' means any natural person who uses or requests a publicly available electronic communications service for purposes which are outside his or her trade, business or profession, which has the same meaning as it has in Regulation 2 of the

Framework Regulations; 'Decision Instrument' means this decision instrument which is made pursuant to Regulation 16 of the Universal Service Regulations;

'ECN' means electronic communications network, which has the same meaning as it has in Regulation 2 of the Framework Regulations;

'ECS' means electronic communications service, which has the same meaning as it has in Regulation 2 of the Framework Regulations;

'Effective Date' means the date specified in Section 7 of this Decision Instrument;

'EMC Directive' means the Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility;

'EMC Regulations' means the European Communities (Electromagnetic Compatibility) Regulations 2016;

'End-User' means a user not providing public communications networks or publicly available electronic communications services, which has the same meaning as it has in Regulation 2 of the Framework Regulations;

'Framework Regulations' means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011, S.I. 333 of 2011;

'PATS' means a publicly available telephone service which has the same meaning as it has in Regulation 2 of the Universal Service Regulations;

'Universal Service Regulations' means the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations, S.I. 337 of 2011;

'Undertaking' means a person engaged or intending to engage in the provision of electronic communications networks or services or associated facilities;

'User' means a legal entity or natural person using or requesting a publicly available electronic communications service;

'Subscribers' means any natural person or legal entity who or which is party to a contract with a provider of publicly available electronic communications services for the supply of such services, which has the same meaning as it has in Regulation 2 of the Framework Regulations.

2.2. Other terms, words, or phrases used in this Decision Instrument shall have the same meaning as they have in the Framework Regulations and the Universal Service Regulations, unless the context admits or requires.

### 3. APPLICATION AND SCOPE

3.1. This Decision Instrument applies all fixed PATS providers.

3.2. This Decision Instrument is legally binding upon and legally enforceable against all fixed PATS providers from the Effective Date, subject to Section 7.

### 4. THE OBLIGATION TO PROVIDE INFORMATION

4.1. Fixed PATS providers shall advise consumers and end-users at the point of sale and prior to concluding a contract about the technology being used, any of its limitations in the event of a power failure and options available to them in respect of Battery Back-Up that is compliant with EMC Regulations for use with the service being sold.

4.2. Fixed PATS providers shall advise subscribers in person and in durable form during the contract, if there is a change in technology being used, any of its limitations in the event of a power failure and options available to them in respect of battery back-up that is compliant with EMC Regulations for use with the service they are subscribed to.

4.3. In accordance with the requirements set out in 4.1 and 4.2, fixed PATS providers shall advise consumers and end-users of options for Battery Back-up units, sources for their availability, details of their cost, capacity and power duration and information regarding their installation and maintenance.

4.4. Fixed PATS providers shall inform subscribers in person and in durable form of any change to access to emergency services or caller location information in the service to which they have subscribed and of any change to conditions limiting access to or use of services and applications where conditions are permitted under national law in accordance with European Union law.

### 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 the duties conferred on it under any primary or secondary legislation in force prior to or after the Effective Date of this Decision Instrument.

## 6. MAINTENANCE OF OBLIGATIONS AND SEVERANCE

6.1. If any Section(s), Clause(s) or provision(s), or portion(s) 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, then that Section(s), Clause(s) or provision(s), or portion(s) thereof shall, to the extent required, be severed from this Decision Instrument, and rendered ineffective, but as far as possible without modifying the remaining Section(s), Clause(s) or provision(s), or portion(s) thereof and shall not in any way affect the validity or enforcement of this Decision Instrument or other Decision Instruments.

## 7. EFFECTIVE DATE, DURATION, AND REVIEW

7.1. This Decision and Decision Instrument is fully effective after six months from the date of its publication (the Effective Date) and shall remain in full force and effect unless amended by ComReg.

7.2. Fixed PATS providers shall confirm and demonstrate to ComReg's satisfaction with documentary evidence, when requested, that consumers and end-users have been informed in compliance with Section 4 of this Decision Instrument within six months from the date of its publication (the Effective Date). The form of this confirmation can be specified by ComReg.

**JEREMY GODFREY**

**CHAIRPERSON**

**THE COMMISSION FOR COMMUNICATIONS REGULATION**

Made on this day the \_\_\_\_ of February 2017

Q. 10 Do you have any comments on the wording of ComReg's draft Decision Instrument?

Please provide detailed reasons and supporting evidence for your view.

Q. 11 Do you agree with the effective date of ComReg's draft Decision Instrument?

Please provide detailed reasons and supporting evidence for your view.

## 6 Submitting Comments

241 The consultation period will run from 9 December 2016 to 20 January 2017. Responses must be submitted in written form and referenced to the relevant question numbers from this document. If responses are submitted electronically, they must be unprotected to facilitate online publication.

242 It is sometimes necessary for respondents to provide confidential information in their submissions. Confidential information must be clearly identified as such. We will publish all of the responses we receive to this consultation, subject to our guidelines on the treatment of confidential information.

## Annex: 1 Legislation

243 The legal basis is, as provided for, in the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (the "Regulations"), the functions and objectives assigned to ComReg by sections 10 and 12 of the Communications Regulations Act 2002, and the tasks and objectives of ComReg, as provided for, in the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011.

244 In particular, Regulation 16 of the Regulations provides:

"(1) (a) Undertakings shall ensure the fullest possible availability of the publicly available telephone services provided over public communications networks in the event of catastrophic network breakdown or in cases of unforeseen circumstances.

(b) The Regulator may specify requirements to be complied with by undertakings for the purpose of subparagraph (a).

(2) An undertaking providing a publicly available telephone service shall take all necessary measures to ensure uninterrupted access to emergency services."

245 Regulation 14 of the Regulations provides:

"(2) A contract referred to in paragraph (1) shall specify in a clear, comprehensive and easily accessible form, at least—

(a) the identity and address of the undertaking,

(b) the services provided including, in particular—

(i) whether or not access to emergency services and caller location information is being provided and any limitations on the provision of emergency services under Regulation 20,

(ii) information on any other conditions limiting access to, or use of, services and applications where such conditions are permitted under national law in accordance with European Union law,

(iii) the minimum service quality levels offered, namely, the time for the initial connection and, where appropriate, other quality of service parameters as defined by the Regulator from time to time."

246 Regulation 15 (6) of the Regulations provides:

“(6) The Regulator may require an undertaking providing public electronic communications networks or publicly available electronic communications services, among other things, to—

b) inform subscribers of any change to access to emergency services or caller location information in the service to which they have subscribed,

(c) inform subscribers of any change to conditions limiting access to or use of services and applications where conditions are permitted under national law in accordance with European Union law,”



# Appendix: 1 Cullen International Research



**Table 1 - Battery backup for customer premises equipment (CPE) for FTTH and FTTP**

Last update: February 2016

Contact: [peter.dunn@cullen-international.com](mailto:peter.dunn@cullen-international.com)

The table below shows whether NRAs have launched consultations or imposed provisions on battery back-up for the optical terminating units and VoIP equipment for FTTH/FTTP NGA deployments.

The [Universal Service Directive](#) (2002/22/EC) as amended by 2009 EU regulatory framework for electronic communications to be transposed into national law by May 25, 2011, article 23 says:

**Availability of services:**

*Member States shall take all necessary measures to ensure the fullest possible availability of publicly available telephone services provided over public communications networks in the event of catastrophic network breakdown or in cases of force majeure. Member States shall ensure that undertakings providing publicly available telephone services take all necessary measures to ensure uninterrupted access to emergency services.*

In its common position on VoIP (ERG (07) 56rev2) (see [EU Telecom Flash 7/2008](#)) the European Regulators Group noted that in the context of the review of the EU regulatory framework, it is probably necessary to recognise that power failure typically blocks VoIP service provision, including access to the emergency services. ERG noted that the same limitation often applies to traditional fixed telephony, given the widespread use of cordless terminals with a locally powered wireless base station.

Country	Regulatory obligation on operators (USP or not) to supply battery backup for CPE for FTTH/FTTP?	If yes,			If not,	
		What is the legal basis (national and EU legislation)?	Details of obligation: how long must the battery Backup last; backup supplied by default or on request; how communicated to end user?	Payment: by end user or operator; price or price range; cost passed onto end user?	Does NRA explain how this is consistent with the requirements in the Universal Service Directive?	Give details of any recent discussion or consultation documents, especially if other technical solutions to meet the USD requirements have been considered
AT	No	-	-	-	Not justified	No discussion
BE	No				Not justified	No discussion

Country	Regulatory obligation on operators (USP or not) to supply battery backup for CPE for FTTH/FTTP?	If yes,			If not,	
		What is the legal basis (national and EU legislation)?	Details of obligation: how long must the battery Backup last; backup supplied by default or on request; how communicated to end user?	Payment: by end user or operator; price or price range; cost passed onto end user?	Does NRA explain how this is consistent with the requirements in the Universal Service Directive?	Give details of any recent discussion or consultation documents, especially if other technical solutions to meet the USD requirements have been considered
DK	No	-	-	-	-	NITA discussed power supply solutions in its analysis of barriers for development of IP- telephony in Denmark completed in 2005 but did not propose any specific requirements for VoIP providers that could potentially present another barrier for development of VoIP.

Country	Regulatory obligation on operators (USP or not) to supply battery backup for CPE for FTTH/FTTP?	If yes,			If not,	
		What is the legal basis (national and EU legislation)?	Details of obligation: how long must the battery Backup last; backup supplied by default or on request; how communicated to end user?	Payment: by end user or operator; price or price range; cost passed onto end user?	Does NRA explain how this is consistent with the requirements in the Universal Service Directive?	Give details of any recent discussion or consultation documents, especially if other technical solutions to meet the USD requirements have been considered
FI	No	Not applicable	Not applicable	Not applicable	<p>Requiring uninterrupted functioning of end user VoIP equipment is “<i>not technically and economically reasonable</i>”.</p> <p>(FICORA <a href="#">statement</a> (in EN) of Sep. 5, 2007 on the regulation of VoIP services)</p> <p><a href="#">General requirements for other network components</a></p> <p>Art. 8 of FICORA <a href="#">Regulation 54</a> (in EN) sets out requirements for emergency power supply for network components (excl. end user equipment). The length of the required back-up time depends on the vulnerable user (between – and 5) of the component. The vulnerable user is determined on the basis of the number of affected users and/or the coverage area.</p>	<p>None</p> <p><u>Mobile networks (can be used for the provision of USO)</u></p> <p>Since 2008, TeliaSonera Finland (TSF) has been phasing out its fixed access network in sparsely populated areas by replacing fixed connections with wireless solutions. In this context, the ministry set (publication <a href="#">16/2008</a>, in EN) 12 conditions that an operator should meet before dismantling its fixed access network. The conditions for power supply security are the following:</p> <p><i>“Electrical power supply to mobile network base stations shall be backed up in such a way that services will continue to perform flawlessly even in the event of disruption for a minimum of 3 hours. For base stations located outside densely populated areas, the minimum requirement will be increased to 6 hours of flawless performance by 1 June 2010”.</i></p> <p>And</p> <p><i>“Power supply to terminal device. The telecommunications operator shall ensure that consumers have access to reasonably priced devices for recharging the batteries of mobile media from other than mains electricity sources in situations where the consumer’s permanent dwelling does not have mains electricity”.</i></p> <p>TSF committed to meeting these conditions.</p>

Country	Regulatory obligation on operators (USP or not) to supply battery backup for CPE for FTTH/FTTP?	If yes,			If not,	
		What is the legal basis (national and EU legislation)?	Details of obligation: how long must the battery Backup last; backup supplied by default or on request; how communicated to end user?	Payment: by end user or operator; price or price range; cost passed onto end user?	Does NRA explain how this is consistent with the requirements in the Universal Service Directive?	Give details of any recent discussion or consultation documents, especially if other technical solutions to meet the USD requirements have been considered
FR	No	-	-	-	Not justified	No discussion
DE	No	-	-	-	Not justified	No discussion
GR	No					<p>No positions published by the authorities on this issue.</p> <p>NB With a <a href="#">decision</a> on June 28, 2007 EETT modified the rules of its previous Decision τ 390/3/13-6-2006</p> <p>("Regulation of General Permits") and added, among other things, that every company that provides VoIP services is obliged to provide a contract that, among other things, must, in the first page, with clear letter and according to the kind of service provided, state that the service might stop working if there is a power cut.</p>

Country	Regulatory obligation on operators (USP or not) to supply battery backup for CPE for FTTH/FTTP?	If yes,			If not,	
		What is the legal basis (national and EU legislation)?	Details of obligation: how long must the battery Backup last; backup supplied by default or on request; how communicated to end user?	Payment: by end user or operator; price or price range; cost passed onto end user?	Does NRA explain how this is consistent with the requirements in the Universal Service Directive?	Give details of any recent discussion or consultation documents, especially if other technical solutions to meet the USD requirements have been considered
IT	No	Not applicable	Not applicable	Not applicable	Not justified	No positions published by the authorities on this issue.
NL	No	Not applicable		OPTA said the same issue exists with cordless DECT phones, ISDN connections and GSM (you can't call 112 when the battery is empty). OPTA concluded that these limitations have not been problematic in practice.		OPTA <a href="#">stated</a> on June 23, 2008 that it sees no reason to impose on VoIP providers to take special measures to guarantee the continuation of the service during a power failure.
NO	No	-	-	-	Not justified	Nkom published a <a href="#">note</a> on regulation of broadband telephony in 2006. The issue of power failure was not discussed.
PT	No	-	-	-	ANACOM recognises that NGA networks based on optical fibre do not as a general rule, allow power supply to be provided from the optical switch to CPE. It adds that the question must be analysed in the context of access to emergency services (consumers must be duly informed on the conditions of the functioning of the services, incl. on access (and possible restrictions) to these services. ANACOM states that it will be necessary to find solutions that allow vulnerable	In February 2006, the topic was covered by one ANACOM question in a <a href="#">consultation on VoIP</a> , but there was no follow-up. ANACOM has also considered this question in its <a href="#">report on the results of the public consultation on NGA</a> of Feb. 2009 (see previous column).

Country	Regulatory obligation on operators (USP or not) to supply battery backup for CPE for FTTH/FTTP?	If yes,			If not,	
		What is the legal basis (national and EU legislation)?	Details of obligation: how long must the battery Backup last; backup supplied by default or on request; how communicated to end user?	Payment: by end user or operator; price or price range; cost passed onto end user?	Does NRA explain how this is consistent with the requirements in the Universal Service Directive?	Give details of any recent discussion or consultation documents, especially if other technical solutions to meet the USD requirements have been considered
					citizens to be contacted and access to emergency services in cases of power failure.	
ES	No	-	-	-	Technical reasons: according to the Ministry of Industry, NGA networks based on optical fibre would not, as a general rule, allow power supply to be provided from the optical switch to CPE	According to <a href="#">Royal Decree 329/2009</a> of the Ministry of Industry adopted on March 13, 2009 "The designated (USO) provider must possess the technical resources necessary to guarantee the continuity of the public telephony service in situations of power supply interruption for at least four hours. <u>Nevertheless, when the connection to the public telephone network is provided using technologies that do not enable power supply from the operator premises to the customer terminal, the technical resources necessary to guarantee the power supply of terminal equipment must be provided by the end user</u> " (see <a href="#">Big Five Update April 2009</a> ).  But for the time being, Telefónica does not provide Universal Service using IP.
SE	No	-	-	-	Not justified	Concluding a consultation on IP-telephony regulatory policy in September 2006, PTS <a href="#">stated</a> that VoIP

Country	Regulatory obligation on operators (USP or not) to supply battery backup for CPE for FTTH/FTTP?	If yes,			If not,	
		What is the legal basis (national and EU legislation)?	Details of obligation: how long must the battery Backup last; backup supplied by default or on request; how communicated to end user?	Payment: by end user or operator; price or price range; cost passed onto end user?	Does NRA explain how this is consistent with the requirements in the Universal Service Directive?	Give details of any recent discussion or consultation documents, especially if other technical solutions to meet the USD requirements have been considered
						providers might not always be able to secure uninterrupted power supply for consumer equipment. PTS did not propose any specific regulations except that the end users must be duly informed that the service may not be available in the case of a power cut.
<b>CH</b>	No	-	-	-	Not applicable	No discussion
<b>UK</b>	Yes	<p><a href="#">General Conditions 3:</a> 3.1 The Communications Provider shall take all necessary measures to maintain to the greatest extent possible [...] (c) uninterrupted access to Emergency Organisations as part of any Publicly Available Telephone Services offered.</p> <p><a href="#">Guidelines</a> on the use of battery back-up to protect lifeline services delivered using fibre optic technology, Dec. 19, 2011</p> <p><a href="#">Article 23</a> of the Universal Service Directive</p>	<ul style="list-style-type: none"> <li>- Battery must be supplied by default;</li> <li>- The minimum battery duration should be 1 hour.</li> </ul>	<ul style="list-style-type: none"> <li>- Initial cost bourn by the operator, end users responsible for replacements;</li> <li>- no rules on passing the cost to end users.</li> </ul>	<p>Art. 23 of the Universal Service Directive was implemented with General Condition 3.</p> <p><a href="#">Guidelines</a> on the use of battery back-up to protect lifeline services delivered using fibre optic technology interpret what uninterrupted access to emergency organisations means to Ofcom.</p>	<p><a href="#">Statement</a> on Guidelines on the use of battery back-up to protect lifeline services delivered using fibre optic technology summarizes the 2011 consultation responses and Ofcom's reply.</p> <p>Power over fibre solutions were discussed (p. 18-19)</p> <p>2011 <a href="#">Consultation</a> on Proposed guidelines on General Condition 3 for next generation fibre access - Battery back-up for superfast broadband services which use fibre optic technology</p>

## Appendix: 2 List of Questions

- Q. 1 Are there any other factors that ComReg should consider, in addition to those set out in Section 3.1, that cover market and technological changes, battery back-up availability and cost with respect to:
- (a) the limitations of services, such as VoIP, which are at risk of interruption during a power failure at the consumer and end-user's premises because these services rely on local power being supplied to the equipment through which the service is being provided; and
  - (b) alternative temporary power capable of supporting essential calls over non PSTN networks, such as, fibre networks, during a power failure supplied through a battery back-up facility installed at the consumer and end-user's premises?
- Please provide detailed reasons and supporting evidence for your view. ... 18
- Q. 2 Do you agree with the preliminary view that it is not sufficient to rely on the existing contractual and information requirements on fixed PATS providers?
- Please provide detailed reasons and supporting evidence for your view. ... 23
- Q. 3 Do you agree that all fixed PATS providers should provide:
- (a) clear and transparent disclosure of conditions limiting access to or use of services at point of sale (instore, online, voice and face to face); and
  - (b) information on steps consumers and end-users may take to address those limitations?
- Please provide detailed reasons and supporting evidence for your view. ... 23
- Q. 4 Do you agree that, in addition to the existing contractual and information requirements, all fixed PATS providers should provide detailed information (as set out in paragraphs 65 and 66) about battery back-up, to all consumers and end-users, at the point of sale (instore, online, voice and face to face) and before entry into a contract?
- Please provide detailed reasons and supporting evidence for your view. ... 23
- Q. 5 Do you agree that all fixed PATS providers should provide pre contract and in the event that there is a change during the contract:
- (a) clear and transparent disclosure of conditions limiting access to or use of services during the contract, if there is a change in technology (instore, online, voice and face to face); and
  - (b) information on steps consumers, end-users and subscribers may take to address those limitations.
- Please provide detailed reasons and supporting evidence for your view. ... 24
- Q. 6 Do you agree that, in addition to the existing contractual and information requirements all PATS providers should provide detailed information (as set out in paragraphs 65 and 66) about the requirement for battery back-up, to all subscribers, during the contract, if there is a change in technology (instore, online, voice and face to face) and before entry into a contract?
- Please provide detailed reasons and supporting evidence for your view. ... 24



- Q. 7 Do you agree that fixed PATS providers should identify, to all consumers and end-users pre contract and to subscribers during a contract change, options for purchasing a battery back-up, either supplied by the PATS provider or a third party retailer?  
Please provide detailed reasons and supporting evidence for your view. ... 26
- Q. 8 (a) Is there a specific group or groups who are at a higher risk of experiencing consumer detriment compared to the general population in respect of this issue and where special provision in respect of BBU might need to be made for these groups?  
If you are of the view that there are specific vulnerable groups we would welcome any observations with respect to:  
(b) Who is best placed to consider the needs of this specific group?  
(c) How those consumers could identify themselves as a vulnerable user, including, what registration and/or certification of vulnerability would be most appropriate; and  
(d) Any cost or other implications for all vulnerable consumers to avail of a BBU service..... 28
- Q. 9 Do you agree or disagree with ComReg’s draft high level assessment of the impact of the proposed regulatory options? Are there any other factors that you consider to be relevant?  
Please explain your answer providing appropriate evidence and costings, if applicable. .... 56
- Q. 10 Do you have any comments on the wording of ComReg’s draft Decision Instrument?  
Please provide detailed reasons and supporting evidence for your view. ... 61
- Q. 11 Do you agree with the effective date of ComReg’s draft Decision Instrument?  
Please provide detailed reasons and supporting evidence for your view. ... 61