Guernsey Electricity
Powering Life, Today & Tomorrow

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24 September 2021
Your Ref: T1557G
Our Ref: amb12616/tjp

Via post and email

Dear Sirs

Fibre to the Premises (FTTP): Future Approach to Emergency Calls – Call for Information

We write in response to the above Call for Information issued by the Guernsey Competition and Regulatory Authority (**GCRA**) on 30th July 2021 (the "**2021 FTTP Call for Information**"). *Please regard this letter as Guernsey Electricity Limited's (**GEL**) formal response to the 2021 FTTP Call for Information and please also note that we are happy for it to be placed on the public record.*

Introduction and scope of the inquiry

The 2021 FTTP Call for Information is principally aimed at Guernsey telecommunications operators. However, the GCRA has sought consultation from GEL on the following related points:-

i) the question of the extent to which an anticipated switch to FTTP may give rise to a new FTTP battery back-up (**BBU**) installation market in Guernsey; and
ii) the appropriate technical standards for BBU.

GEL has been approached for the above input because the GCRA anticipate that GEL may become a participant in the above market subject to GCRA regulation and because of GEL's relevant technical knowledge and expertise.

The GCRA has pointed out that not all the questions posed in the 2021 FTTP Call for Information are relevant to GEL. The GCRA has therefore asked GEL to focus its response to Questions 6 to 8, 14 to 18, 19 to 23, 29 and 31. GEL therefore sets out its response to each of these questions in turn below.

Question 6:- What has been the frequency, duration, cause and location of power outages in Guernsey in the last five years?

GEL Distribution Network

Please see Appendix A for the frequency and duration statistics for the period between 2016 and 2020.

As regards the cause of power outages in the island's distribution network, these are mainly due to damage caused by third parties and faults due to ageing and wear. In addition, disturbance by third parties (i.e. cables and joints manipulated by other contactors) have in some cases accelerated the degradation process leading to faults in the network and outages.

GEL Generation (including cable link)

Please see Appendix B for the frequency and duration statistics for the period between 2016 and 2020.

The commissioning of the interconnector to the European grid in 2001 dramatically reduced the occurrence of power outages as a result of generation plant faults. The interconnector provides an instant back-up to generator faults in most cases. There are three significant events which have occurred in the period between 2016 and 2020 and the details of these are shown below:-

- 2016 – Overload of a CIEG (Channel Islands Electricity Grid) circuit caused loss of supplies across both Jersey and Guernsey. Restoration of supplies was complex and resulted in high customer minutes lost (CML).
- 2018 – Failure of the Guernsey to Jersey interconnector resulted in a loss of all supplies to the island. The Vale power station was brought into full service and supplied the island for nominally 8 weeks until a repair on the cable was completed. Two minor generation plant outages led to further CML during the interconnector outage of 0.7 and 2.9 minutes. Had the interconnector been in service these minor plant faults would have been covered.
- 2019 – With the Guernsey to Jersey interconnector out of service for replacement of the subsea cable, a fault on one of the generators led to a cascade failure of all generators and loss of all supplies to the island.

Significant generation related CML have typically occurred during outages of the interconnector which is not a normal state for the system. With a new and more reliable subsea cable installed in 2019 the expected periods of time without the interconnector are expected to be low moving forward.

Question 7:- Which areas of Guernsey (if any) are more affected by power outages, to what extent and why?

GEL Distribution Network

No specific areas are notable as this can vary widely.

GEL Generation (including cable link)

The areas of Guernsey impacted by generation or interconnector faults can vary significantly depending on the nature of the fault. In general, if the interconnector is the sole source of supply

then the entire island will be without power until the Vale back-up generation is brought online. If the interconnector is operating in parallel with local generation then loss of local supplies may be limited to a partial loss but will very much depend upon the nature of the fault.

Question 8:- Are there foreseeable/predictable, if exceptional, events that may cause longer than normal outages, and if so, what are these events and what length of power outages would they be likely to cause?

GEL Distribution Network

In GEL's experience, there are no events which are foreseeable/predictable.

GEL has risk assessed most substations in terms of flooding and put control measures in place as required however there is always the potential for exceptional events to cause outages.

In the past, there have been exceptional storms/high tides/low pressure with areas being flooded and, on one occasion, causing the loss of a substation until the area was dried out. We have also experienced outages caused by fire.

In addition, there is also the potential for malicious third party interference such as targeted vandalism or (although unlikely) terrorist activity which could lead to an outage. Whilst the GEL network security is proportionate and often enhanced for our environment, anything is possible if a third party is determined enough to threaten that security.

Where we have had instances of exceptional circumstances, outages were kept within 12hrs. >18hrs loss of supply is rare with only 2 cases that GEL is aware of in the last 20 years.

GEL Generation (including cable link)

GEL is required to maintain an N-2 level of redundancy for our local generation plant. This means that there should be sufficient generation plant to cover island demand even with the loss of up to two local generators. GEL will always look to minimise the risk of generation related CML through robust procedures around interventions and management of change. In the event that issues do occur, defined recovery procedures have demonstrated historically that the majority of supplies will be restored within an hour.

Under certain scenarios, when the island is supplied with power from either a mix of imported power and local generation or local generation only, a system of pre-defined customer disconnection may take place in the event of a loss of one of the supply sources. This is commonly referred to as 'load shedding'. In the event that load shedding is required, blocks of load (sectors of customers) on the system are disconnected from the system in order to maintain system stability and allow the remaining supply sources to match demand. A priority table is used to determine the order in which sectors are shed. The areas with highest priority to maintain supply are typically those with Critical National Infrastructure, such as the hospital, however definition of the sectors is geographical and by the nature of the system, load shedding is effective on an area basis rather than customer type.

Question 14:- What are the installation costs of and the relevant specifications, size and bulk costs of BBU units able to deliver 1, 4 and 8 hours of standby power (and what talk time would each deliver)?

As the GCRA is aware, the UK telecommunications regulator, Ofcom, has looked into the question of FTTP and BBU units over recent years and, in GEL's opinion, offers useful guidance for the GCRA and Guernsey telecommunications operators in establishing the framework applicable to this jurisdiction. The relevant Ofcom findings of 2011 and 2018 are at Appendix C and D respectively.

In consultation with infrastructure providers, equipment vendors, professional bodies and individual members of the public, Ofcom found that the protection offered by a BBU of 1 hour is such that it should remain operational for around 74% of the time during power outages. This rises to 94% for a 4 hour battery lifetime.

However, the feedback Ofcom received from those it consulted was that BBU facilities supporting at least 4 hours' protection may be expensive to procure, difficult to install and hard to maintain. Ofcom found that these issues could not only constrain the rollout of FTTP technology but also limit the effectiveness of the facilities thereby ruling that option out for most customers.

Ofcom also found that whilst it is the European standard, there would be difficulty in supplying a minimum of 8 hours BBU in the UK.

GEL is not able to determine what the costs associated with the provision of BBU power facilities would be as they would depend on the number of customers for whom the provision was required, the amount of protection provided and the specifics of the solution developed. How the costs of such facilities are recovered would also be a matter for telecommunications operators to establish as part of their own product/service specification. These are all details to which GEL is not privy as GEL is not a telecommunications operator.

Ofcom had taken a technologically neutral approach to allow telecommunications operators to develop a solution that best suited the particular characteristics of their own respective service or network and customer base. GEL therefore cannot comment on the cost and relevant specifications as it will be specific to the business of each of the relevant telecommunications operators.

As regards talk time for each hour of standby power, again, that would depend on the specific solution offered by the relevant telecommunications operator and provided it was adequate to meet their customer's needs.

Question 15:- What are the relevant specifications and bulk costs of PAYG mobile phones (without SIM cards) able to provide 1, 4 and 8 hours of standby power (and what length of talk time would each deliver)?

GEL is unable to comment as this is specific to telecommunications operators.

Question 16:- With due regard to the above and any other relevant factors you describe, for what minimum period of time should any back-up solution provide the ability to make emergency calls?

Ofcom considered that a minimum BBU provision of 1 hour constituted a proportionate measure for telecommunication operators to adopt in their FTTP deployments. It offered protection to customers in a manner that is sustainable over time for the majority of cases but longer back-up may need to be provided in some cases such as for vulnerable customers. Any extension to the minimum of 1 hour would therefore be down to the relevant telecommunications operator to implement based upon their knowledge of their customer base and what their individual needs were.

GEL therefore suggests that the GCRA and Guernsey telecommunications operators use this as a UK industry and regulatory accepted minimum threshold in deciding whether to adopt the same or increase the minimum duration of BBU units in Guernsey.

Question 17:- Where both solutions (BBU and PAYG mobile) are available, which is superior/preferable? Please detail why.

GEL is unable to comment as this is specific to telecommunications operators.

Question 18:- Are there particular subscribers for which either a BBU or PAYG mobile would be an unsuitable solution, given any relevant factors (including technical competence to operate, charge and maintain)? Please detail who these would be and why.

GEL is unable to comment as this is specific to telecommunications operators.

Question 19:- Do you have any information that might indicate the level of demand for paid BBU installation, the financial viability/profitability of such a BBU installation business (particularly for a telecommunications operator) and likely pricing levels? If so, please provide the same.

GEL's view is that a small BBU unit would be commoditised by the telecommunications operators and built into their own monthly standing charge. A more significant back-up power system e.g. to power the rest of the home in the event of an outage would be considerably more costly than a small BBU unit for a phone.

Question 20:- Should an operator be legally required to install a BBU unit for a subscriber that requests it and is willing to pay for it?

Yes. It is GEL's view that providing protection for subscribers so that they can make an emergency call in a power cut is essential.

There is already scope within the UK's Communications Act 2003 for Ofcom to impose such requirements as it considers appropriate within a telecommunications operator's licence conditions to secure end users' access to telephone numbers (including uninterrupted access to the emergency services) through the installation of relevant apparatus (i.e. the electronic communications network) in the customer's premises into which customers connect their in-home equipment (i.e. their own telephone).

This statutory duty is reflected in Ofcom's own guidelines that expect a BBU to be provided in FTTP installations and that that represents a minimum necessary measure for telecommunications operators to deploy allowing customers to access the emergency services from fixed line communication services.

At present, there does not appear to be any similar statutory requirement under the existing Telecommunications (Bailiwick of Guernsey) Law, 2001 though such a requirement may be a condition in the relevant telecommunications operator's licence granted by the GCRA.

However, a statutory duty on a Guernsey telecommunications operator to install upon request would not be too dissimilar to GEL's existing statutory duty under the Electricity (Guernsey) Law, 2001 to supply electricity upon request.

Consequently, it would not be unusual, in GEL's opinion, to place such an obligation on telecommunications operators in this jurisdiction. However, the ultimate decision is one to be made with the relevant telecommunications operators in mind who would be affected by such legal obligation.

Question 21:- If network operators do provide BBU installation to subscribers converting to FTTP, to what extent does an operator enjoy a position of market power to raise BBU pricing above a competitive level?

GEL is unable to comment as this is specific to telecommunications operators.

Question 22:- Would it be proportionate for the GCRA to regulate the pricing of telecommunications operators for installing a BBU, in order to prevent any abuse of market power in BBU installation (such as unreasonably high prices) and to ensure an affordable price and, if so, on what basis should such regulation proceed?

GEL is unable to comment as this is specific to telecommunications operators.

Question 23:- To what extent should the network operator be required to: independently price its BBU installation and not bundle the same, not design its FTTP in a fashion that unreasonably restricts compatibility with third party BBUs, provide reasonable logistical and technical cooperation to third party BBU installers and inform customers of their right to have their BBU installed by an independent installer.

GEL is unable to comment as this is specific to telecommunications operators.

Question 29:- On what timescale should (i) PAYG mobiles and (ii) BBU units be replaced to ensure reliable operation and appropriate back-up duration?

GEL is unable to comment as this is specific to telecommunications operators.

Question 31:- What testing may be required of BBUs or PAYG mobiles to ensure they are still functioning normally and reliably on an ongoing basis (and what testing equipment can be supplied with the solution to enable this to be done easily by laymen)?

GEL is unable to comment as this is specific to telecommunications operators.

Conclusion

The information that GEL can contribute to this consultation process is limited. The vast majority of information the GCRA requires in order to inform its decision-making rests with the relevant Guernsey telecommunications operators. They will each have a different approach and solution offered according to their own network, their particular customer base and the service they provide to such customers. They are best placed to advise on the extent to which an anticipated switch to FTTP may give rise to a new FTTP BBU installation market in Guernsey and the appropriate technical standards for BBU.

GEL is however happy to engage and meet with the GCRA and any other interested person to discuss this letter more fully and assist the process where it can.

Yours faithfully

Alan Bates
Chief Executive

Annexures:- Appendix A – 2016 – 2020 GEL Distribution Network Power Outage Statistics
Appendix B – 2016 – 2020 GEL Generation Power Outage Statistics
Appendix C – Ofcom Guidelines on the use of battery back-up to protect lifeline services delivered using fibre optic technology dated 19th December 2011
Appendix D – Ofcom – Protecting access to emergency organisations when there is a power cut at the customer's premises – Guidance on General Condition A3.2(b) dated 10th October 2018

APPENDIX A

Distribution Network									
Year	Total CML (Customer Minutes Lost)	Availability of supply	Total number of incidents	Number of customers off supply for less than 3 hours	Number of customers off supply 3 to 18 hours	Number of customers off supply for more than 18 hours	Total number of customers affected	Percentage of customers back on within 3 hours	Percentage of customers back on within 18 hours
2020	22.46	99.99%	166	5713	346	0	6059	94.3%	100%
2019	26.08	99.99%	170	7016	586	0	7602	92.3%	100%
2018	30.08	99.99%	179	5743	740	0	6483	88.6%	100%
2017	18.30	99.99%	132	4811	194	0	5005	96.1%	100%
2016	36.91	99.99%	155	7407	1200	0	8607	86.1%	100%

RESULTS OF 01/01/2020 TO 31/12/2020 MAINS AND RECHARGEABLE INCIDENTS

Number of Customers 30,952

All Incidents (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	6	26	11	0	43	1.389247868
Third Party	0	0	2	3	0	5	0.161540450
GE Influenced Reasons	0	2	14	4	0	20	0.646161799
Weather and Environment	0	0	0	1	0	1	0.032308090
UNKNOWN	0	1	47	22	1	71	2.293874386
Total	0	9	89	41	1	140	4.523132592

Customer Minutes Lost (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	343,003	41,346	11,868	0	396,217	12.801014474
Third Party	0	0	4,040	810	0	4,850	0.156694236
GE Influenced Reasons	0	103,523	44,395	8,793	0	156,711	5.063033083
Weather and Environment	0	0	0	0	0	0	0.000000000
UNKNOWN	0	0	86,209	18,271	0	104,480	3.375549238
Total	0	446,526	175,990	39,742	0	662,258	21.396291031
					Availability:		99.99594%

Incident Count (All)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	6	26	11	0	43	1.389247868
Third Party	0	0	15	8	1	24	0.775394159
GE Influenced Reasons	0	2	14	4	0	20	0.646161799
Weather and Environment	0	0	0	1	0	1	0.032308090
UNKNOWN	0	1	52	24	1	78	2.520031016
Total	0	9	107	48	2	166	5.363142931

Customer Minutes Lost (All)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	343,003	41,346	11,868	0	396,217	12.801014474
Third Party	0	0	24,703	10,429	0	35,132	1.135047816
GE Influenced Reasons	0	103,523	44,395	8,793	0	156,711	5.063033083
Weather and Environment	0	0	0	0	0	0	0.000000000
UNKNOWN	0	0	88,417	18,631	0	107,048	3.458516413

Total	0	446,526	198,861	49,721	0	695,108	22.457611786
					Availability:		99.99574%

RESULTS OF 01/01/2019 TO 31/12/2019 MAINS AND RECHARGEABLE INCIDENTS

Number of Customers 30,784

All Incidents (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	6	29	11	0	46	1.494282744
Third Party	0	0	7	1	0	8	0.259875260
GE Influenced Reasons	0	4	8	4	0	16	0.519750520
Weather and Environment	0	1	1	0	0	2	0.064968815
UNKNOWN	0	5	56	6	0	67	2.176455301
Total	0	16	101	22	0	139	4.515332640

Customer Minutes Lost (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	250,375	88,443	33,207	0	372,025	12.085011694
Third Party	0	0	6,325	6,474	0	12,799	0.415767931
GE Influenced Reasons	0	201,482	15,227	13,500	0	230,209	7.478202963
Weather and Environment	0	0	240	0	0	240	0.007796258
UNKNOWN	0	57,677	91,185	564	0	149,426	4.854015073
Total	0	509,534	201,420	53,745	0	764,699	24.840793919
					Availability:		99.99527%

Incident Count (All)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	6	29	11	0	46	1.494282744
Third Party	0	0	13	3	1	17	0.552234927
GE Influenced Reasons	0	4	8	4	0	16	0.519750520
Weather and Environment	0	1	1	0	0	2	0.064968815
UNKNOWN	0	5	76	8	0	89	2.891112266
Total	0	16	127	26	1	170	5.522349272

Customer Minutes Lost (All)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	250,375	88,443	33,207	0	372,025	12.085011694
Third Party	0	0	14,594	10,284	0	24,878	0.808147089
GE Influenced Reasons	0	201,482	15,227	13,500	0	230,209	7.478202963
Weather and Environment	0	0	240	0	0	240	0.007796258
UNKNOWN	0	57,677	116,239	1,684	0	175,600	5.704261954
Total	0	509,534	234,743	58,675	0	802,952	26.083419958
					Availability:		99.99504%

RESULTS OF 01/01/2018 TO 31/12/2018 MAINS AND RECHARGEABLE INCIDENTS

Number of Customers 30,618

All Incidents (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	7	30	6	0	43	1.404402639

Third Party	0	1	2	2	0	5	0.163302632
GE Influenced Reasons	0	4	7	16	0	27	0.881834215
Weather and Environment	0	1	1	1	0	3	0.097981579
UNKNOWN	0	1	59	10	0	70	2.286236854
Total	0	14	99	35	0	148	4.833757920

Customer Minutes Lost (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	514,008	102,877	6,696	0	623,581	20.366483768
Third Party	0	0	4,533	0	0	4,533	0.148050167
GE Influenced Reasons	0	3,432	21,993	25,138	0	50,563	1.651414201
Weather and Environment	0	0	580	0	0	580	0.018943105
UNKNOWN	0	35,000	142,503	3,751	0	181,254	5.919851068
Total	0	552,440	272,486	35,585	0	860,511	28.104742308
					Availability:		99.99465%

Incident Count (All)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	7	31	6	0	44	1.437063165
Third Party	0	2	20	6	0	28	0.914494742
GE Influenced Reasons	0	4	7	16	0	27	0.881834215
Weather and Environment	0	1	1	1	0	3	0.097981579
UNKNOWN	0	1	64	12	0	77	2.514860540
Total	0	15	123	41	0	179	5.846234241

Customer Minutes Lost (All)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer

Other	0	514,008	105,517	6,696	0	626,221	20.452707558
Third Party	0	0	42,274	10,324	0	52,598	1.717878372
GE Influenced Reasons	0	3,432	21,993	25,138	0	50,563	1.651414201
Weather and Environment	0	0	580	0	0	580	0.018943105
UNKNOWN	0	35,000	152,102	3,931	0	191,033	6.239238357
Total	0	552,440	322,466	46,089	0	920,995	30.080181593
					Availability:		99.99428%

RESULTS OF 01/01/2017 TO 31/12/2017 MAINS AND RECHARGEABLE INCIDENTS

Number of Customers 30,442

All Incidents (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	3	4	39	12	0	58	1.905262466
Third Party	0	1	1	1	0	3	0.098548059
GE Influenced Reasons	0	3	3	0	0	6	0.197096117
Weather and Environment	0	1	1	1	0	3	0.098548059
UNKNOWN	0	4	25	4	0	33	1.084028645
Total	3	13	69	18	0	103	3.383483345

Customer Minutes Lost (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	149,940	78,524	8,293	0	236,757	7.777314237
Third Party	0	0	5,240	270	0	5,510	0.180999934
GE Influenced Reasons	0	0	18,191	0	0	18,191	0.597562578
Weather and Environment	0	0	0	0	0	0	0.000000000

UNKNOWN	0	196,075	49,018	15,860	0	260,953	8.572137179
Total	0	346,015	150,973	24,423	0	521,411	17.128013928
					Availability:		99.99674%

Incident Count (All)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	3	4	39	12	0	58	1.905262466
Third Party	0	1	7	11	0	19	0.624137704
GE Influenced Reasons	0	3	3	0	0	6	0.197096117
Weather and Environment	0	1	1	1	0	3	0.098548059
UNKNOWN	0	4	37	5	0	46	1.511070232
Total	3	13	87	29	0	132	4.336114579

Customer Minutes Lost (All)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	149,940	78,524	8,293	0	236,757	7.777314237
Third Party	0	0	14,108	7,553	0	21,661	0.711549832
GE Influenced Reasons	0	0	18,191	0	0	18,191	0.597562578
Weather and Environment	0	0	0	0	0	0	0.000000000
UNKNOWN	0	196,075	65,933	18,485	0	280,493	9.214013534
Total	0	346,015	176,756	34,331	0	557,102	18.300440181
					Availability:		99.99652%

RESULTS OF 01/01/2016 TO 31/12/2016 MAINS AND RECHARGEABLE INCIDENTS

Number of Customers 30,317

All Incidents (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	18	35	16	5	74	2.440874757
Third Party	0	0	2	1	0	3	0.098954382
GE Influenced Reasons	1	1	7	4	0	13	0.428802322
Weather and Environment	0	2	4	3	0	9	0.296863146
UNKNOWN	0	4	41	10	1	56	1.847148465
Total	1	25	89	34	6	155	5.112643072

Customer Minutes Lost (Non-Rechargeable)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	518,707	118,660	14,846	0	652,213	21.513111456
Third Party	0	0	345	420	0	765	0.025233367
GE Influenced Reasons	0	0	9,496	630	0	10,126	0.334004024
Weather and Environment	0	0	6,455	2,565	0	9,020	0.297522842
UNKNOWN	0	284,800	114,772	9,214	138	408,924	13.488273906
Total	0	803,507	249,728	27,675	138	1,081,048	35.658145595
					Availability:		99.99323%

Incident Count (All)	33kV	11kV	415V	240V	0V	Total	Average Interruptions/1000 Customers
Other	0	18	35	17	5	75	2.473859551
Third Party	0	0	17	5	0	22	0.725665468
GE Influenced Reasons	1	1	7	4	0	13	0.428802322
Weather and Environment	0	2	4	3	0	9	0.296863146
UNKNOWN	0	4	52	11	1	68	2.242965993

Total	1	25	115	40	6	187	6.168156480

Customer Minutes Lost (All)	33kV	11kV	415V	240V	0V	Total	Average minutes lost per customer
Other	0	518,707	118,660	14,851	0	652,218	21.513276380
Third Party	0	0	17,109	4,795	0	21,904	0.722498928
GE Influenced Reasons	0	0	9,496	630	0	10,126	0.334004024
Weather and Environment	0	0	6,455	2,565	0	9,020	0.297522842
UNKNOWN	0	284,800	131,556	9,229	138	425,723	14.042385460
Total	0	803,507	283,276	32,070	138	1,118,991	36.909687634
					Availability:		99.99300%

APPENDIX B

Total Combined CML including all Generation Plant / Cable link Outages & Distribution Network Incidents	
Year	**Total CML (Customer Minutes Lost)**
2020	22.46
2019	(21.51 + 26.08) = 47.59
2018	(31.68 + 30.08) = 61.76
2017	18.30
2016	(56.35 + 36.91) = 93.26

Generation Plant / Cable link Outages	
Year	**Total CML (Customer Minutes Lost)**
2020	0
2019	21.51
2018	31.68
2017	0
2016	56.35

Appendix C

Guidelines on the use of battery back-up to protect lifeline services delivered using fibre optic technology

Statement

Publication date: 19 December 2011

Contents

Section 1

Executive summary

1.1 Superfast broadband is now available to 58% of UK premises[1] with deployment set to continue over the coming years. Increasing numbers of UK consumers are signing up to superfast broadband packages (i.e. those that offer >24Mbit/s) in response to concerted efforts to raise consumer awareness. This allows them to take advantage of the media-rich content that is being offered, such as video streaming and gaming.

1.2 Superfast broadband can be delivered to customers in a variety of ways, but the focus of this statement is on 'fibre to the premises' (FTTP) networks, where optical fibre is deployed all the way from the local exchange to the customer's property. Although this is expected to result in the highest speed broadband capability to customers, optical fibre does have one intrinsic limitation with respect to traditional telephony.

1.3 A conventional telephone[2] 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 cut at the premises. However, optical fibres are unable to support this arrangement as they do not conduct electricity.

1.4 The consequence of this limitation in fibre optic networks is that, if there is a power failure at the property, and absent any other measures being taken, the telephone will stop working. Hence calls, including calls to the emergency services, are not possible.

1.5 In practice, a back-up supply of power to ensure that calls can be made over optical fibre networks during a power cut is normally supplied via a battery installed at the customer's premises. The question that arises from solutions of this type is the length of time over which the battery back-up remains operational. It is on this question that we have recently consulted.

1.6 Given the expected growth in fibre optic networks over the next few years and in light of recent survey evidence that suggests that communications providers are adopting a mix of power back-up solutions in their current deployments, we believe that this represents an appropriate time to address this issue.

1.7 Our consultation therefore proposed the following principles, applying to both new-build and 'overlay' FTTP deployments:

- A battery back-up should always be provided to support publicly available telephone services (PATS) provided over FTTP.
- The minimum duration of the back-up facility should be 1 hour.

[1] Infrastructure Report, Ofcom, 1st November 2011, http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2011/infrastructure-report.pdf

[2] For the purposes of this Statement a conventional telephone is one in which the customer premises equipment (usually the handset) can be connected directly into the network termination point (NTP) on a copper-based line and function without any intermediate equipment.

- Communications providers should take appropriate steps to ensure that the needs of vulnerable consumers requiring additional protection, who depend on 999/112 to a greater extent that the majority of the population, are addressed.

1.8 Overall, the responses we received can be divided into three broad categories: those that generally considered our proposals reasonable; those that argued for a higher minimum battery duration; and, those that argued that battery back-up should not be expected or if so, only on an optional basis.

1.9 The safety of human life represents an extremely important citizen interest and therefore is central to our consultation and subsequent guidelines. Having taken responses to our consultation into consideration, we remain of the view that the principles proposed above, and on which we consulted, are most likely to result in back-up facilities that customers will maintain over time and hence provide more effective protection. We are also of the view that it is practicable for operators to comply with these principles.

1.10 Therefore, for the reasons set out in this document, we consider that the guidance set out in the consultation document is appropriate and proportionate.

1.11 We recognise that we are at an early stage of FTTP deployment in the UK. We will keep this guidance under review, and issue revised guidance if that appears appropriate, taking account of market and technology developments.

Section 2

Introduction

2.1 Increasing numbers of people in the UK are signing up to superfast broadband packages (i.e. those that offer >24Mbit/s) in response to concerted efforts to raise consumer awareness of these services and the increasing number of locations from which such services are being made available. Superfast broadband allows customers to take advantage of the media-rich content that is increasingly being offered, such as video streaming and gaming.

2.2 Superfast broadband can be delivered to customers in a variety of ways, including DOCSIS 3.0 (as in Virgin Media's cable network), VDSL (as in BT's up to 40Mbit/s 'Infinity' products) and Fibre to the Premises (FTTP). The focus of this document is on FTTP deployments, in which the copper access network is completely replaced by fibre.

2.3 Although FTTP deployments have so far been restricted to trials and pilots in the case of larger communications providers, and small-scale deployments from local or regional communications providers, BT has announced its intention to deploy FTTP to cover around 4 million households in the next 2-3 years[3] and Virgin Media has also announced[4] FTTP deployments in the future. We also expect additional FTTP deployments as a result of the BDUK[5] initiative over a similar timeframe.

2.4 Although FTTP provision leads to a superior broadband experience to the customer, the way in which FTTP systems support traditional telephony differs materially from conventional copper lines.

2.5 When a service is provided using a conventional copper exchange line, this provides power to the telephone, as well as carrying calls. Customers using conventional telephone services based on copper wires should therefore retain the ability to make a telephone call using a corded telephone in the event of a power cut

2.6 By way of contrast, in an FTTP deployment, the customer's telephone is connected to an optical network terminal (ONT). The ONT cannot be powered via the FTTP network, and is therefore powered from the mains. If there is a power cut at the property, and there is no alternative power supply, the telephone ceases to function. Hence calls, including calls to the emergency services, are not possible.

2.7 In practice, alternative power during a power cut is normally supplied via a battery back-up facility installed at the customer's premises. It is the performance of this back-up facility that is the subject of this document.

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[3] BT announced FTTP will comprise a quarter of the 66% coverage of superfast broadband deployment plans: http://www.bbc.co.uk/news/10111724

[4] "Virgin Media lays new digital foundations with Persimmon Homes", Press release, November 2010, http://mediacentre.virginmedia.com/Stories/Virgin-Media-lays-new-digital-foundations-with-Persimmon-Homes-1cd.aspx

[5] Summary Broadband Delivery Framework: http://www.culture.gov.uk/publications/8512.aspx

2.8 In 2008, Ofcom consulted and subsequently published a statement on our expectations for FTTP technology in new-build developments, in which we supported a battery duration of 4 hours[6].

2.9 Since that guidance was issued, a number of developments have taken place, which lead us to believe that our guidance on battery back-up provision should be reviewed, in particular:

- Feedback received from early optical fibre deployments indicates that battery back-up facilities supporting at least 4 hours' protection may be expensive to procure, difficult to install and hard to maintain. These issues could not only constrain the rollout of FTTP technology, but also limit the effectiveness of the facilities.

- We commissioned a survey[7] of existing schemes, and this concluded that our guidance on battery back-up needed to be reviewed given the wide variety of solutions being offered in practice.

- Changes have been made to the General Conditions of Entitlement, in particular General Condition 3 (GC3), as a result of the implementation of the revised EU Electronic Communications Framework in the UK. The changes increased the obligations on communications providers to maintain the availability of their networks, and are therefore relevant to the issue of battery back-up.

- Large infrastructure providers, in particular BT[8] and Virgin Media, intend to deploy FTTP technology to significant numbers of homes, and we expect additional regional FTTP deployments as a result of the government's BDUK initiative.

2.10 In light of these developments, we considered that it was necessary to review our guidance with respect to battery back-up with a view to ensure that our guidance remained appropriate and proportionate going forward.

2.11 We therefore consulted on this matter on the 28 June 2011[9]. We received 16 responses, from infrastructure providers, equipment vendors, professional bodies and individual members of the public. The arguments made and points raised during this process are set out in this document along with our response.

Views from consultation respondents

2.12 Overall, around a third of respondents agreed with the general focus of the consultation in terms of the need to mandate a back-up power facility for FTTP deployments to support calls to the emergency services, and the proposed duration over which such back-up would be available. Respondents who disagreed with our proposal did so for a variety of reasons. For example, a number of respondents

[6] Statement on Next Generation New Build - Delivering super-fast broadband in new build housing developments, Ofcom, September 2008, http://stakeholders.ofcom.org.uk/binaries/consultations/newbuild/statement/new_build_statement.pdf

[7] "UK local fibre access deployment study", Analysys Mason, January 2011. http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/local-fibre-access.pdf

[8] BT has recently announced the first exchanges at which it will offer superfast broadband exclusively using FTTP technology. http://www.openreach-communications.co.uk/superfast/where-and-when/

[9] "Battery back-up for superfast broadband services which use fibre optic technology" http://stakeholders.ofcom.org.uk/consultations/superfast-broadband/summary

wanted longer power provision durations, whereas others argued for no battery provision to be required, or if so only on an optional basis.

2.13 There was, however, a widespread consensus that this was a suitable time to review the guidance for battery back-up.

2.14 In the remainder of this document, we review the responses received in regards to the scope, risk assessment and proposed principles that were set out in the consultation and address the arguments and concerns raised.

Section 3

Regulatory approach

3.1 In this Section, we summarise our duties and obligations with particular regard to the matter of ensuring uninterrupted access to PATS. Five consultation responses concerned the legal and regulatory framework within which our guidelines would apply, and these are addressed in this Section.

Basis for our guidelines

3.2 When the EU communications regime was implemented in the UK on 25 July 2003, licences granted under the Telecommunications Act 1984 were replaced by the General Authorisation regime. Under this regime, operators do not require a license in order to provide services to members of the public, but they do have to comply with the General Conditions of Entitlement. These Conditions are imposed by Ofcom under Part 2 of the Communications Act 2003 (the Act) and they apply to the providers specified in them.

3.3 The requirements in GC 3 are particularly relevant to the issue of battery back-up, and were initially imposed in July 2003 to implement the Community obligations in Article 23 of the Universal Service Directive (2002/22/EC).

3.4 That Article has been replaced by a new Article 23 by virtue of Article 1(14) of the so-called Citizens' Rights Directive (2009/136/EC). On 23 May 2011, Ofcom published its statement entitled 'Changes to the General Conditions and Universal Service Conditions – Implementing the revised EU framework'[10]. That statement includes our decisions on changes made to GC3, which now reads (in the relevant part):

> 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.

3.5 That obligation applies to a "Communications Provider" as defined in GC3.3, namely *"a person who provides Publicly Available Telephone Services and/or provides a Public Communications Network over which a Publicly Available Telephone Service is provided"*.

3.6 The expression "provide" (and cognate expressions) is to be construed in accordance with section 32(4) of the Act. It will therefore depend on the factual circumstances in each case as to who is to be regarded as "providing" the services or network for the purposes of GC3. It is the responsibility of communications providers to ensure that they apply and comply with these obligations (where they apply to them); the failure of which may lead to Ofcom's intervention. However, as explained in the consultation, we note that the apparatus installed in the customers' premises into which customers connect their in-home equipment in the present context (i.e. the ONT) constitutes an integral part of an electronic communications network, but the customer premises equipment (CPE), such as the telephone, does not.

[10] http://stakeholders.ofcom.org.uk/binaries/consultations/gc-usc/statement/Statement.pdf

3.7 For reasons discussed in our consultation, we consider that it is important to propose guidelines on the specific issues covered by them to set out our general approach in investigating compliance of the GC3 obligations. The basis for any guidelines we may decide to adopt is therefore something that appear to us incidental or conducive to the carrying out of our functions under the Act, in particular for the purposes of taking any enforcement action going forwards.

General duties

3.8 Under the Act, our principal duty is to (a) to further the interests of citizens in relation to communications matters and (b) to further the interests of consumers in relevant markets, where appropriate by promoting competition. We consider that safety of life matters represent an important citizen interest and therefore are central to our considerations.

3.9 In performing our duties, we are also required to have regard to a range of other considerations, which appear to us to be relevant in the circumstances. In the context of continuity of telephony services, we consider that a number of such considerations are relevant, for example:

- the circumstances of citizens who appear to us as needing special protection;
- the desirability of encouraging the availability and use of high speed data transfer services; and
- the desirability of encouraging investment and innovation in the telecommunications market.

3.10 In performing our principal duty, we must also have regard to principles appearing to Ofcom to represent the best regulatory practice. We also place emphasis on the following of Ofcom's own general regulatory principles[11] as particularly relevant to the guidelines we have adopted in this Statement:

- ensuring that our interventions are evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome;
- seeking the least intrusive regulatory mechanisms to achieve our policy objectives;
- consulting widely with all relevant stakeholders and assessing the impact of regulatory action before imposing regulation upon a market.

3.11 We believe that the guidelines we have adopted will help achieve these objectives by providing stakeholders with clarity and certainty on how in general we intend to approach compliance with GC3 in relation to the specific issues covered by the guidelines. Our general and non-binding approach is contained in the principles set out in Section 6, which comprise our guidelines.

3.12 However, we wish to make it clear that we may depart from the guidelines set out in Section 6 in individual cases. They are simply intended to set out the general approach we would normally expect to take in investigating compliance with the GC3 obligations, but they will not have binding legal effect and each case will be considered on its own merits. If we decide to depart from them, we will set out our

[11] http://www.ofcom.org.uk/about/sdrp/

reasons for doing so and they may be subject to further review and revision from time to time.

Views from consultation respondents

3.13 A number of concerns were raised in response to our consultation regarding the legal and regulatory framework in which our guidelines would apply. Hyperoptic Limited (Hyperoptic), Scottish and Southern Energy (SSE) and Virgin Media sought clarification as to whom the terms of GC3 would apply. Hyperoptic also made reference to our existing VoIP guidelines, highlighting what they considered to be inconsistencies between our proposed guidelines and the VoIP guidelines. Finally, Virgin Media and Chaltel argued that a wider range of General Conditions, beyond GC3 should apply to our consideration of the availability of telephony services.

Responsibility for ensuring compliance to GC3

3.14 Hyperoptic contended that our proposed guidelines appeared to place obligations directly on providers of public communications networks (PCNs). In its response, it was argued that GC3 applies only to providers of PATS and to impose the guidelines onto providers of PCNs would require a change to the wording of GC3, which itself would require separate consultation.

3.15 Virgin Media also expressed concerns that the consultation would impose battery back-up obligations on those offering broadband-only services, for which the specific requirement regarding access to emergency services in GC3 does not apply.

3.16 SSE also sought clarification as to whom the obligation to provide a battery back-up would apply. Their view was that for technical reasons the infrastructure provider would be better able to assess the customer's individual circumstances and provide the necessary equipment that would support power to the network termination equipment. Service providers, they argued, would be more numerous than PCN providers and hence greater efficiencies would be achieved as a result of PCN-delivered back-up facilities.

3.17 Fujitsu pointed out that in the future a number of infrastructure provision scenarios may arise, for example 'wires-only' installations whereby the infrastructure provider lays the optical fibre to the customer's premises, but leaves the equipment provision to a downstream business (e.g. a broadband provider or ISP). In such circumstances, they argued, it is unclear as to whom the obligations of GC3 would apply. Fujitsu argued that the guidelines should apply only to PATS providers.

3.18 We disagree with the arguments by Hyperoptic and Fujitsu. As we explain above, GC3 already applies to PATS providers as well as providers of PCNs (over which a PATS is provided). Thus, there is no need to change the wording as Hyperoptic argues, nor is it appropriate to limit the application of the guidelines as Fujitsu argues in these circumstances.

3.19 As regards Virgin Media's argument about broadband-only services, we clarify that our guidelines would not apply to broadband-only services where they do not constitute PATS.

3.20 As to the requests for clarification by SSE and Fujitsu as to whom the GC3 obligations (including battery back-up) apply, the answer to this issue requires an analysis of the facts in each case.

3.21 Depending on the individual factual circumstances, an infrastructure provider may well be the person who is to be legally regarded as the provider of the service in question. We drew attention to this matter in the consultation at paragraph 3.4 where we stated that *"The expression "provide" (and cognate expressions) is to be construed in accordance with section 32(4) of the Communications Act 2003. It will therefore depend on the factual circumstances in each case as to who is to be regarded as "providing" the services or network for the purposes of GC3. It is the responsibility of communications providers to ensure that they apply and comply with these obligations (where they apply to them); the failure of which may lead to Ofcom's intervention."*

3.22 Therefore, our guidelines cannot (and do not seek to) extend the persons (e.g. description of communications providers) to whom the obligations contained in GC3 apply. Instead, the guidelines provide guidance to communications providers, falling within the definition of a communications provider for the purposes of GC3, who provide superfast broadband using fibre optic technology on how we intend to generally approach compliance with, in particular, GC3.1(c).

Additional obligations beyond GC3

3.23 Virgin Media and Chaltel argued that a number of General Conditions and their annexes apply when considering the availability of PATS in addition to GC3, for example GC10 (customer information), GC15 (Users with disabilities) and GC5 (Emergency planning).

3.24 Communications providers are expected to meet the obligations of all General Conditions where applicable. The purpose of our guidelines is specifically to help communications providers considering or planning the deployment of FTTP meet their obligations under the terms of GC3. Other obligations under other General Conditions remain in force and would need to be met (where applicable) independently of, and in addition to, those contained in GC3.

Broadband-only services and consistency with VoIP guidelines

3.25 Hyperoptic cited the guidelines produced by Ofcom with respect to the provision of voice over IP (VoIP) services. These guidelines, Hyperoptic argued, *"concluded that VoIP service providers should negotiate SLAs with relevant PCNs concerning quality of service but that battery back-up for CPE should be a matter for each individual VoIP service provider in its discretion"*. Hyperoptic believed that VoIP providers that also provide the underlying fibre network would therefore be required to take full account of the guidelines outlined in our consultation, whereas third party VoIP providers, who have no commercial relationship with the network provider, could avoid such obligations as it would be impractical for them to ascertain the identity of the network provider and negotiate appropriate SLAs.

3.26 Hyperoptic and Virgin Media also argued that if the CPE had no back-up power capability, the provision of power back-up at the ONT would be redundant and potentially misleading to a customer as they may erroneously feel that they have a degree of protection in the event of a power failure. This scenario may occur either because the customer has a DECT phone, or if a broadband-only service was provided over the fibre infrastructure (in which no standard telephone is connected).

3.27 However, Ericsson claimed that with data services becoming ever more important and potentially supporting life-saving applications, the requirement to provide power

back-up facilities should be applied also to data (e.g. broadband-only) services over FTTP.

3.28 As set out in the consultation, our guidelines deal with what we expect to be a typical FTTP scenario whereby the ONT forms part of the electronic communications network itself. This means that regulatory obligations concerning an electronic communications network would include elements up to and including the ONT, but exclude consumer elements such as DECT phones and VoIP CPE (e.g. computers). Furthermore, these guidelines apply to a particular network architecture that we expect to be widely adopted; solutions that are materially different in terms of the technology used or the services offered to the customer would be considered on a case-by-case basis.

3.29 Our guidelines regarding the regulation of VoIP services are equally applicable to communications providers providing service over copper or fibre infrastructure, irrespective of commercial relationship between the communications provider and the network infrastructure provider.

3.30 We support the view that data services are becoming increasingly important and that some of these services could offer significant benefits to consumers with regards to health or safety matters. However, our primary concern in these guidelines is to provide guidance on how communications providers providing PATS over FTTP can meet their obligations under GC3 and therefore we do not consider it appropriate to extend the scope of these guidelines to include data services at this time.

Section 4

Scope

4.1 Our consultation sought to address a relatively new technology that we see being deployed in increasing volumes in the UK, which raises questions about the underlying assumptions related to telephone and broadband services. We are not expressing a preference for any given technology, merely outlining how we expect the existing GC3 obligations to apply in the particular scenario set out in the consultation.

4.2 Specifically, the consultation considered a scenario whereby a communications provider deploys optical fibre from a point of presence (e.g. an exchange) to a customer's premises. In this scenario, fibre is brought to the premises and is terminated by an ONT device installed at, usually inside, the customer's property.

4.3 The equipment used for the ONT is powered from the customer's mains supply, which allows the effective functioning of both the customer-facing ports as well as the optical transceiver that maintains communication with the communications provider's systems. This technology is commonplace for FTTP deployments around the world, as it has been standardised, and components and systems are manufactured in large volumes, hence lowering prices.

4.4 Due to the power requirements of the ONT, the normal method of maintaining power if there is mains power outage is the provision of a battery back-up. In our consultation, we indicated that in our review of battery back-up there were four options to be considered:

- retaining our support for 4 hour battery back-up provision that we provide in our existing new-build statement and associated guidance;
- increasing the minimum battery back-up duration;
- reducing the minimum battery back-up duration;
- removing the requirement to provide battery back-up for FTTP.

4.5 We excluded alternative access technologies and non-access (e.g. backhaul and core) infrastructure, seeking to address only the FTTP scenario described above.

4.6 However, we did state that the scope of our consultation addressed both new-build infrastructure deployments (where no existing telecoms infrastructure would exist) as well as 'overlay' installations where a property is likely to already be passed by and/or have access to an existing telephone line.

Views from consultation respondents

4.7 Respondents were divided as to whether the scope of the consultation was appropriate. While around half believed that the scope was appropriate, others raised a number of issues. Some highlighted the fact that that the performance of the exchange equipment plays an important role in the overall availability of a service and therefore should be included in the analysis. Others argued that the scope of the consultation should be widened to incorporate other access methodologies in order to provide a consistent set of guidelines across access technologies. Some

respondents were concerned that the broadening of the scope of our consultation to include 'overlay' deployments represented a significant extension to the existing guidelines, which raised legal, economic and practical issues. In particular, arguments were raised that customers choosing to purchase fibre-optic broadband services can also choose to retain the existing telephone line where one already exists.

Extension of scope to include 'overlay' deployments

4.8 While BT and IFNL specifically agreed that the obligations for FTTP deployment should be the same for overlay installations as for new-build developments (so as to provide consistency with respect to products and customer expectations), Virgin Media and Hyperoptic expressed concern over the extension of obligations for deployments to existing properties.

4.9 Hyperoptic argued that the consumer makes a positive choice to adopt new infrastructure and therefore can make informed choices as to whether to take an offered broadband service. Virgin Media also argued that the consultation did not adequately explain why an obligation to provide battery back-up should be expected where an FTTP network is installed and the existing copper line remains. Virgin Media was concerned that the overall costs of FTTP broadband provision would increase as a result of the requirement to provide a battery back-up in all cases even where voice may continue to be provided over copper.

4.10 As set out in the consultation at paragraph 4.10, the consultation concerned the provision of fibre to households or business premises that rely on fibre irrespective of whether premises have legacy copper lines available. In such circumstances, the providers of both the FTTP network and the conventional network may fall within the definition of a communications provider for the purposes of GC3 and thereby be obliged to comply with GC3. The scope of the guidelines has been extended to reflect relevant market developments and changes in the scope and application of GC3 itself. As set out above, our adopted guidelines cannot (and do not seek to) extend the persons (e.g. description of communications providers) to whom the obligations contained in GC3 apply.

4.11 We discuss the costs associated with battery back-up for of FTTP deployments in Section 5. With regard to the argument that customers could choose to continue to take voice services over the existing copper infrastructure, we believe that customers receiving fibre optic broadband would expect that the underlying infrastructure is also capable of supporting telephony services (as is the case for copper lines) and will seek to minimise their telecoms spend by taking advantage of the single fibre line.

4.12 Evidence suggests that consumers seek to minimise their telecommunications spend where possible. Currently around 15% of households (typically lower income) have no fixed telephony service, relying instead on mobile communications for their telephony.[12] Furthermore, around 53% of households take bundled telecommunications services primarily as a way to reduce overall telecommunications spend.

4.13 We therefore consider that it is highly unlikely that customers will maintain (and pay for) two fixed connections to the property; one for broadband and one for telephony.

[12] The Communications Market Report (CMR), Ofcom, 4th August 2011. http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr11/uk/

We are not aware of any general uptake of this from current broadband deployment. Customers are unlikely to see the option of keeping the existing copper line when taking fibre-optic broadband as a realistic choice and will seek solutions to obtain voice by other means. As a result, the single fibre connection will in many cases, just as it would be for new-build, ultimately support both voice and data services to the customer, and hence we consider it appropriate to extend our guidelines to include 'overlay' networks.

Inclusion of backhaul and exchange-based network elements

4.14 The British Security Industry Association (BSIA) and Chaltel were concerned that the scope of the consultation was too narrow, focussing only on the availability of the facilities provided in customers' premises. They argued that similar, or more stringent, requirements should be imposed on any roadside cabinet equipment and exchange-based systems.

4.15 While generally supporting the consultation scope, IFNL also highlighted the fact that service availability depends on exchange-based equipment.

4.16 Our consultation acknowledged that other network elements contributed to the overall service reliability in addition to the equipment that may reside in the customer's premises. However, as discussed above, our guidance is aimed to deal with a specific limitation of FTTP.

Consistency across access technologies

4.17 Ericsson argued that other NGA technologies (such as fibre delivered to the distribution point) may also require customer-provided power for continued operation, and therefore similar power back-up requirements should be considered for such cases. Similarly, Hyperoptic contended that a hybrid access network architecture consisting of fibre from an exchange to an intermediate point with Ethernet or other metallic line from there to the customer's premises could fall within the scope of our consultation, as power to support the customer terminal equipment would also need to be supplied from the customer's property.

4.18 As set out above, our consultation focused on the provision of superfast broadband through the provision of FTTP, whereby the FTTP ONT, for which battery back-up is essential, forms part of the electronic communications network itself. Given the imminent and large scale deployment of this specific FTTP approach, we consider that it is appropriate to provide guidance in this particular respect at this time. We have not looked at other approaches or technologies and do not consider that the assessment made and conclusions drawn would necessarily apply in other scenarios. Therefore, such scenarios are outside the scope of our consultation and our guidelines.

4.19 We would assess deployments of alternative technology configurations on a case-by-case basis. However, we would remind all communications providers to whom GC3 applies that, in the absence of specific guidelines, they would need to satisfy themselves that they are compliant with the technology-neutral obligations of GC3.

Section 5

Specific impact issues

5.1 In our consultation, we presented specific results of our risk assessment into back-up facilities to support telephony services over optical fibre installations. In this Section, we summarise the main points, along with the key arguments made by respondents. This Statement should be read together with our consultation document for our full reasoning and assessment.

5.2 Our consultation set out the principles and duties that we believe are relevant (summarised in Section 3), particularly regarding the interests of citizens, and the criteria against which the options have been assessed. All of these criteria affect the citizen/consumer either directly or indirectly. From the consumer perspective, we believe that these criteria can be summarised in the following terms:

- the level of protection afforded by the solution with respect to the risk that such protection would be called upon (in particular the likelihood that the back-up facility would be called upon in an emergency);
- the costs associated with the provision of the solution, and the possible risk to infrastructure investment and competition that may result. High deployment costs incurred by communications providers could result in limited availability of fibre access services offered to consumers, and such costs may be passed on to customers;
- the costs and practicalities associated with the maintenance (i.e. replacement) of batteries (irrespective of whether the communications provider or the consumer takes responsibility for the battery maintenance), and the risk and consequences if such maintenance does not occur;
- the potential environmental issues of battery disposal/recycling;
- the issues that could arise in accommodating the solution by consumers and the potential implications for FTTP adoption.

5.3 To achieve these duties and objectives, we specifically sought to:

- allow for the protection of consumers if there is a power cut to enable emergency calls where proportionate;
- minimise, where possible, the burden on consumers in accepting and maintaining the protection solution;
- promote efficient levels of investment in fibre access deployment and encourage competition in these markets.

5.4 Our assessment consisted of reviewing the power outage statistics reported by Ofgem which included their frequency and duration. We then considered the frequency of emergency calls made from fixed line phones to establish an approximate likelihood that an emergency call would be required during a power cut to a premises.

5.5 In summary, we found that:

- The probability that an emergency call would be made at the same time as a domestic power failure can be extremely small (of the order of many millions to one).

- Each year millions of urgent calls are made to the emergency services. The number made from fibre access lines, hence relying on battery back-up in the event of a power cut, will depend on a number of other factors including the rollout of FTTP as well as DECT and mobile phone usage and availability.

- The protection offered by a battery back-up of 1 hour is such that it should remain operational for around 74% of the time during power outages. This rises to 94% for a 4-hour battery lifetime.

- There would be an anticipated correlation between power outages and emergency calls. We expected that this would lead to more calls being made during power cuts, many being made fairly soon after the outage, thus increasing the effective protection of shorter battery back-ups.

5.6 We therefore judged that the provision of battery back-up in fibre access deployments provided a necessary benefit to consumers, although the additional level of protection offered by successively longer back-up durations falls significantly after the first hour.

5.7 We further considered that a minimum battery back-up provision of 1 hour constituted a proportionate measure for communication providers to adopt in their FTTP deployments, offering protection to customers in a manner that is sustainable over time, for the majority of cases but longer back-up may need to be provided in some cases.

Views of respondents

5.8 Mr Bartlett, BSIA, BT, C&WW, Ericsson, SSE, Mr Shersby and an unnamed respondent generally supported our proposed guidelines that expected a battery back-up to be provided in FTTP installations. However, BSIA and Mr Shersby argued for longer batteries than were proposed in our consultation. IFNL, KCOM and Mr Thomson argued that the battery should be optional for customers to take if they so choose while two more contended that a battery was not necessary. A number of respondents challenged aspects of the assessment or the underlying basis of the analysis itself.

Arguments for longer battery durations

5.9 BSIA argued for longer battery back-up durations, stating "*The power outages in the UK vary by geographical location and any proposed battery back-up needs to take this into account. The European standards for remotely monitored security systems require a minimum of 8 hours battery back up. But the BSIA realise the difficulty of supplying this sort of back-up.*"

5.10 In addition, we received responses from members of the public who felt strongly about the issue of battery back-up and were worried about the consequences of batteries with a more limited capacity.

5.11 The unnamed respondent and Ericsson wanted the requirement to provide a back-up facility and its duration to be regularly reviewed to ensure that it remained appropriate particularly in the light of VoIP and mobile phone take-up.

5.12 The primary focus of our guidance is to provide general guidance on how communications providers deploying FTTP can meet their obligations under GC3(1)(c), which requires communications providers to take all necessary measures to maintain, to the greatest extent possible, uninterrupted access to Emergency Organisations. While we accept that a number of additional benefits can arise from the availability of telephone services (such as health and security monitoring systems), it is with this primary focus that our considerations of proportionality need to apply.

5.13 We appreciate the strength of feeling on the issue of battery back-up expressed by some respondents. We reiterate from our consultation that we consider that safety of life matters represent an important citizen interest and therefore are central to our consultation and subsequent guidelines. In conducting our analysis and reaching our conclusions, we fully considered the advantages and disadvantages associated with the options set out in paragraph 4.4 above. As set out in paragraph 5.7 above, we concluded that a minimum battery back-up provision of 1 hour constitutes a proportionate measure for communication providers to adopt in their FTTP deployments, offering protection to customers in a manner that is sustainable over time, for the majority of cases. We do not consider that the responses contain new information or arguments that would lead us to revisit the analysis and resulting conclusions set out in the consultation.

5.14 Our consultation also acknowledged that in some cases consumers may need greater protection. We have a particular concern about vulnerable consumers who depend on 999/112 to a greater extent that the majority of the population, but there may also be a case for providing enhanced protection to households that have a history of long-duration power outages. We consider that communications providers should take appropriate steps to address such needs, taking account of the specific local circumstances.

Optional Battery

5.15 IFNL, KCOM and Mr Thomson argued that a battery back-up should be an option for customers to take if they feel it is necessary. IFNL contended that well informed customers should be able to decide on the importance they place on their telephony service. KCOM added that customers are already familiar with the limitations of DECT phones hence customers should be able to understand the capabilities limitations of FTTP technology. Both KCOM and IFNL highlighted cost savings and environmental benefits that could arise were batteries to be discretionary.

5.16 We reiterate that GC3 sets a high level of protection for communications providers to achieve. As we set out in our consultation, we believe that making the availability of a battery optional would not comply with the obligations set out in GC3. These require communications providers to take '*all necessary measures to maintain, to the greatest extent possible ... uninterrupted access to the emergency services*'.

5.17 Furthermore, we believe that even well-informed customers may not make an objective assessment of their risks[13] and hence may place themselves at unnecessary risk. We therefore consider the requirement to provide battery back-up to be appropriate and proportionate.

[13] By way of an example, see "How unrealistic optimism is maintained in the face of reality", T. Sharot, C.W. Korn & R.J. Dolan, Nature Neuroscience (2011) doi:10.1038/nn.2949, 9 October 2011. http://www.nature.com/neuro/journal/vaop/ncurrent/full/nn.2949.html

DECT and mobile phone usage

5.18 In the assessment of risk in our consultation, we considered a variety of factors, some of which were quantifiable and others that were not. Those that were considered in a qualitative manner included the anticipated deployment of FTTP, the take-up and usage of mobile phone services and the propensity of customers to have only DECT phones in the property.

5.19 Both Hyperoptic and Virgin media were concerned that the consequences of high mobile phone usage and widespread use of DECT phones had not been sufficiently addressed in our analysis. Specifically, they argued that users of DECT phones would derive no benefit from the existence of a battery installed with the ONT as the DECT phone itself would fail in the event of a power cut. The higher the proportion of customers that rely on DECT phones, the less benefit the ONT battery would provide. Virgin provided DECT phone take-up figures from 2004 and pointed out that such usage would have grown significantly since then. Virgin also highlighted the fact that mobile handset take-up is high and that more emergency calls are now made using mobile phones than from fixed lines.

5.20 As set out in the consultation (and above), our guidelines deal with what we expect to be a typical FTTP scenario whereby the ONT forms part of the electronic communications network itself. This means that regulatory obligations concerning an electronic communications network would include elements up to and including the ONT. Those regulatory obligations do not apply to consumer devices, such as DECT phones.

5.21 We recognise, however, that the ability to make a call will also depend on the continued operation of consumer devices. We were not able to quantify in our consultation the implications of DECT phone and mobile phone availability, but this does not mean that we ignored their implications. Our consultation, and the associated impact assessment, considered both DECT and mobile technologies and indicated the areas of uncertainty that is associated with them. For example, in the case of DECT, we do not know how many homes are totally reliant on this technology, and for mobile phones we cannot determine the correlation of power failure to coincident mobile basestation failure.

5.22 We reiterate that GC3 sets a high level of protection for communications providers to achieve. Our assessment has been made by reference to the terms of GC3. In this context, we would stress that GC3 requires communications providers to take all necessary measures to maintain, to the greatest extent possible, uninterrupted access to Emergency Organisations as part of any PATS offered. However, it does not ultimately guarantee access as the regulatory obligations of GC3 apply to the elements up to and including the ONT but do not extend to the CPE, such as the telephone. From the evidence presented in consultation responses, we consider that a 1 hour battery back-up is readily achievable and therefore we judge it to be a proportionate expectation for communications providers to provide to meet the obligations of GC3.

Intra-household power failures

5.23 Chaltel also challenged our assessment of the probability that a power failure would occur in the household. It argued that a large number of power failures in a property occur as a result of electrical failures in the property, for example blown fuses and trip-switches. If left unnoticed, particularly at night, a battery (of any reasonable duration) would run down and hence an emergency call would not be possible.

5.24 We agree that power failures can occur in the households as a result of circuit overloads or other events that cause fuses to blow or circuit breakers to activate. However, we also consider that in the majority of such situations the householder is able to rectify the situation relatively quickly and easily. We believe that risks to the safety of life are more acute when the restoration of power is not in the gift of the householder, and hence our focus on 'external' power failures attended to by the power distribution organisations.

Costs associated with battery back-up

5.25 Hyperoptic and Virgin raised concerns over the costs that would be associated with the provision of back-up power facilities. Virgin asserted that mandating battery back-up for all FTTP deployments, particularly for overlay scenarios, would prevent a justifiable business case from being adopted. Moreover, Hyperoptic claimed that a battery back-up facility would represent up to 50% of their overall equipment costs.

5.26 Our consultation did acknowledge and took due regard of the costs associated with battery back-up facilities citing independent analysis into the costs associated with the FTTP architectures that are the focus of this guidance.

5.27 The response from Hyperoptic concerned a hybrid architecture which is materially different to that of the primary focus of this guidance, and would therefore need to be considered separately.

5.28 The response from Virgin contained no evidence to support their assertion that battery back-up would prevent a business case to be made, and we reiterate that from the evidence presented in other consultation responses, we consider that a 1 hour battery back-up is readily achievable. We therefore judge it to be a proportionate expectation for communications providers to provide to meet the obligations of GC3.

5.29 We received no specific evidence from the other respondents to counter the overall cost assumptions that were presented in the consultation. In examining any specific case we would consider any relevant additional evidence that was presented.

Power over fibre solutions

5.30 Chaltel challenged the underlying basis on which this guidance is made and the consequent conclusions. In summary, Chaltel argued that current telephone technology allows almost continuous operation irrespective of the power availability in the customer's property and this is standard by which other solutions should be judged. It is not a valid assumption, Chaltel claimed, that a battery back-up was the only solution to the question of telephone availability during domestic power outages.

5.31 Chaltel proposed a mechanism that would allow basic telephony services to be supported using optical power provided by the exchange-based equipment. In this way, telephone availability over FTTP could, it was argued, be similar to current copper-based technology. Chatel contended that the requirements of GC3, and the EU Framework directives on which they are based, can only be met through the adoption of such an approach.

5.32 We consider that the proposed solution from Chaltel is not sufficiently mature for us to consider in our impact assessment. In particular, we are not aware of any commercially available systems in the market and therefore we are unable to determine the solution's capital costs, installation implications, maintenance

requirements and broadband capabilities. However, if Chaltel or other stakeholders obtain evidence of such matters, we would welcome them drawing it to our attention in the future.

5.33 As set out above, our guidelines provide guidance on how providers of superfast broadband over fibre optic technology may meet their obligations under GC3. If it is possible for communications providers to use alternative means to comply, including the proposed solution described by Chaltel, then we will consider the merits of such solutions on a case by case basis.

Alarms and notification

5.34 BT suggested that a call to the emergency services should be 'flagged' to inform the call handler that the caller is on an FTTP line.

5.35 While such a mechanism may be beneficial in that it could alert the call handler to the fact that the caller's line may cease to function as a result of the finite battery duration, we acknowledge that technical and process issues may also arise in the correct handling of this information. Given that we have not been able to consider these issues in detail, we do not consider that it would be appropriate for us to set out specific expectations in our guidelines.

5.36 The unnamed respondent argued that when there was an issue with the battery at the customer premises, in addition to customer notification, an alarm should be raised to the relevant communications provider so as to aid maintenance and support.

5.37 We do not intend to provide detailed guidance on how communications providers should manage the provision and maintenance of the battery backup solutions adopted. Alarm generation and monitoring may be one such method, as may a proactive maintenance regime. We would expect communications providers to develop procedures and practices that are appropriate to the solution adopted.

Enhanced protection for vulnerable customers

5.38 In our consultation, we stated that it was likely that there would be a small number of individual consumers for whom additional protection beyond 1 hour may be necessary in order to provide a commensurate level of protection.

5.39 There were a number of reasons why this may be the case, for example:

- vulnerable customers who depend on 999/112 services to a far higher extent than the majority of the population and for whom additional protection would be particularly important;
- households that have a history of long-duration power outages.

5.40 We therefore proposed that communications providers should take steps to address the needs of such individuals. We considered that due to the different circumstances that customers may face and the solutions that may be available to communications providers of different scales and with different resources, a specific solution could not be specified.

Views of respondents

5.41 While most respondents conceded that vulnerable individuals would exist and would benefit from additional protection, responses were mixed as to how best to achieve this, or whether it was practicable to identify and subsequently serve such customers.

5.42 BSIA agreed in principle with the proposal for enhanced protection facilities, but they argued for a clear, unambiguous statement of intent of how communications providers will provide this additional protection. On the other hand, BT did not believe that it was appropriate to indicate what technology approach should be taken.

Clarification of responsibilities

5.43 S&SE and Virgin questioned on whom the obligation to identify and subsequently address the needs of vulnerable customers applies.

5.44 As set out in Section 3 above, the obligation to comply with GC3 applies to those communications providers that fall within the definition of a Communications Provider for the purposes of GC3.

The identification of vulnerable customers

5.45 C&WW, Hyperoptic and IFNL argued that the identification of vulnerable customers would be difficult to achieve, although Virgin Media and the unnamed respondent pointed out that communications providers normally have a 'priority fault repair service', which would be one mechanism by which vulnerable customers could be identified (and S&SE also noted that power companies keep priority services registers of vulnerable customers). IFNL pointed out that customer churn would further complicate customer identification as the network infrastructure provider may not be aware of the changing circumstances of individuals once fibre optic installation is complete.

5.46 We consider that, where a communications provider assesses whether customers require additional protection, the process of identifying potentially vulnerable customers should not be unnecessarily onerous on a communications provider.

5.47 Firstly, Ofgem annually publishes power outage statistics for each of the individual power distribution companies and the geographic area that they serve. This information should provide a high level indication whether a customer might experience significantly longer than average power outages.

5.48 Secondly, we do not consider asking additional questions of customers about their circumstances would constitute an undue impediment to the provision of optical fibre services. Customers that have previously needed emergency assistance, have been significantly affected by long-duration power cuts, or are currently listed as a vulnerable individual on, for example, power distribution company databases[14] are likely to reveal this if asked by the communications provider.

5.49 We emphasise that we do attach particular importance to the needs of vulnerable consumers. We do not propose to specify in detail how those needs should be met, given that this is likely to depend on individual circumstances, but we do expect communications providers to address these needs in a responsible manner.

[14] Should communications providers need to verify this information with the relevant organisation(s), they may need to seek the customer's consent.

Costs associated with additional protection

5.50 Hyperoptic and IFNL argued that offering additional facilities would be expensive to provide (for example, due to the costs associated with increased inventory).

5.51 Our consultation recognised that there are a number of different approaches that communications providers may decide to adopt in order to address the needs of vulnerable customers. However, we do consider it important that communications providers should respond appropriately and responsibly to the needs of vulnerable customers, making available suitable solutions (for example, the provision of a larger battery) to such customers.

5.52 The costs associated with the provision of such facilities would depend on the number of customers for whom enhanced protection was required, the amount of protection provided and the specifics of the solution developed. How the costs of such facilities are recovered would also be a matter for communications providers to establish as part of their product/service specification.

Documenting compliance

5.53 We encourage communications providers to carefully document the steps they take in ensuring compliance with GC3 obligations, including our guidelines. Such documentation is likely to assist with any investigation we may carry out, particularly with regard to vulnerable customers.

Section 6

FTTP Battery Back-up Guidelines

6.1 This Section describes the key principles that we believe provide communications providers (to whom GC3 applies) in assessing their compliance with obligations under GC3 with respect to the continuity of availability of telephony services over FTTP.

6.2 These principles derive from our consideration of the matters discussed in consultation document and the previous Sections of this statement and of the responses and arguments put forward by respondents.

6.3 These principles (which together comprise our new guidelines) supersede our position regarding battery back-up for FTTP as set out in previous statement[15] and guidance[16] in their relevant parts and those documents should be read accordingly.

Principle 1 – A battery must always be provided

6.4 We consider that the provision of a battery back-up capability for fibre access installations represents a minimum necessary measure for communications providers to deploy, allowing consumers to access the emergency services from fixed line communication services.

6.5 By battery back-up, we are referring to one or more self-contained units capable of providing electrical power over an extended period of time to enable uninterrupted access to emergency organisations, where the service constitutes PATS.

6.6 This principle applies to communications providers deploying FTTP infrastructure to new-build as well as existing properties that may, at the time of installation, already be served by a copper line.

6.7 We consider that making battery back-up an optional capability for consumers to elect to have provided would not meet the obligations under GC3.

6.8 If the consumer takes responsibility for the replacement of batteries, then the communications provider should provide appropriate guidance as to how this is achieved. In such circumstances, we would normally expect replacement batteries to be easily obtainable.

6.9 The battery back-up unit should have a facility making the customer aware that the battery is low or has failed, so that a replacement can be obtained promptly. If the communications provider retains responsibility for battery maintenance, Ofcom would expect that procedures and practices are developed that are appropriate to the solution adopted.

[15] Statement on Next Generation New Build - Delivering super-fast broadband in new build housing developments, Ofcom, September 2008, http://stakeholders.ofcom.org.uk/binaries/consultations/newbuild/statement/new_build_statement.pdf

[16] New Build Investment Guidance on Telecoms Regulation, Ofcom, May 2009 http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/NewBuildGuidance.pdf

Principle 2 – The minimum battery duration should be 1 hour

6.10 We consider that 1 hour battery back-up capability represents an appropriate minimum level of protection to provide to customers taking FTTP services for the majority of cases. In other words, if a communications provider were to provide battery back-up capability of less than 1 hour in any particular case, we would expect to find the obligations under GC3 have not been complied with.

6.11 It is, however, the responsibility of communications providers (to whom GC3 applies) to ensure that they in all cases meet the obligations under GC3. This may mean that in specific cases that enhanced protection with battery back-up capability of more than 1 hour should be provided to the customers in question.

6.12 In this context, we remind communications providers of other regulatory obligations that may also apply and be relevant to battery back-up. In particular:

- General Condition 9: In offering to provide, or providing, a connection to a PCN and/or PECS, Communications Providers (as defined for GC9) shall specify (among other things) at least the services provided, including in particular whether or not access to Emergency Services and Caller Location Information is being provided, and any limitations on the provision of access to Emergency Services. We consider that information about battery back-up capability is relevant to that obligation.

- General Condition 10: Communications Providers (as defined for GC10) shall ensure the publication of clear and up to date information on prices/tariffs as well as standard terms and conditions, in respect of access to and use of PATS, including a description of the PATS offered and any types of maintenance service offered.

- Annex 3 to General Condition 14: Service Providers (as defined for GC14) shall provide certain minimum consumer information to Domestic and Small Business Customers, including clear and readily accessible information, during the Sales Process, in the Terms and Conditions of Use and in any User Guide; that, although access to Emergency Calls is provided, the Service may cease to function if there is a power cut or failure.

6.13 Therefore, in addition to providing the minimum battery back-up provision discussed above, we also would expect that the sufficient information is available so that prospective customers can make an informed decision as to whether to take the fibre optic broadband service, and if so, allow customers to derive and maintain the maximum benefit from the battery back-up. Customer information could include:

- The key differences between fibre access technology and the existing copper-based telephony provision, particularly with respect to the ability to make calls in the event of a power outage at the premises.

- The levels of back-up that the offered solution provides and what this means for the customer in terms of fixed-line access to the emergency services in the event of a power failure.

- What equipment the battery supports (usually only the ONT), hence the implications if, for example, DECT phones are used in the household.

- The capacity/characteristics of the battery to support the minimum level of back-up (for example the associated Ah rating) and how new batteries can be obtained.

- The importance of maintaining power to the ONT whenever possible to prevent unnecessary battery usage/drain and to maximise the availability of the telecommunications network (for example, not to switch the power off at night).

6.14 It is anticipated that there will be some individual consumers for whom additional protection beyond 1 hour may be necessary in order to provide a commensurate level of protection, for example households that have a history of long-duration power outages and vulnerable customers who depend on 999/112 services to a far higher extent than the majority of the population and for whom additional protection would be particularly important. Therefore, we consider that communications providers should take appropriate steps to, where appropriate, identify and address the needs of customers that would benefit from additional protection.

6.15 We recognise however, that there are a number of different approaches that communications providers may decide to adopt in order to address the needs of such customers.

6.16 One approach may be the development of an enhanced protection facility that is offered to those individuals that need additional protection.

6.17 Other options may include the deployment of a common, enhanced, protection facility to all customers in order to minimise, for example, development and inventory management costs, while still addressing the needs of individual vulnerable customers.

6.18 We would consider the approaches adopted by communications providers on a case by case basis to determine whether they address the needs of their customers.

6.19 Whatever approach is taken, we encourage communications providers to carefully document the steps they take in ensuring compliance with GC3 obligations, including our guidelines. Such documentation is likely to assist with any investigation we may carry out, particularly with regard to vulnerable customers.

6.20 Noting the pace of technological developments, we are likely to revisit this guidance as and when required to reflect any relevant developments, such as FTTP ONT power consumption, inherent battery technology, electricity distribution network availability, alternative communications methods along with FTTP take-up and usage patterns.

Appendix D

Ofcom
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Protecting access to emergency organisations when there is a power cut at the customer's premises

Guidance on General Condition A3.2(b)

Publication Date: 10 October 2018

About this document

A critically important function of the telephone network is to allow people to contact the emergency services. For this reason, there is a regulatory obligation on communications providers (providers) in General Condition A3 to take all necessary measures to ensure uninterrupted access to emergency organisations for their customers.

Following a public consultation, this document confirms Ofcom's final guidance on how providers can meet their obligations as customers move from traditional landline services to phone services over a broadband connection (known as 'Voice over Internet Protocol' (VoIP)). The underlying requirements have not changed and the guidance is not intended to be the definitive guide on how providers should comply with the obligations. Instead, the guidance sets out Ofcom's expectations on the measures they should have in place to ensure customers making calls over broadband are able to make emergency calls in the event of a power cut at their premises. It takes the form of four Principles for providers to follow.

In light of the specific circumstances of each case, Ofcom will take account of providers' regard to these four Principles when assessing whether they are meeting their obligations.

Contents

1. Executive summary

1.1 Historically, most landline call services have been delivered via copper wire connections over the public switched telephone network (PSTN). Traditional corded telephones on these lines can still be used to make calls when there is a power cut at the premises because the lines are powered from the local telephone exchange.

1.2 However, the UK's traditional telephone network will undergo substantial change in the coming years. Providers are increasingly moving away from services that rely on copper wire, to fibre broadband technology. Alongside this, the PSTN is approaching the end of its life as the availability of spare parts and engineering knowledge to maintain and repair it is decreasing. Consequently, providers with substantial PSTN infrastructure are planning to retire this network. This will take a number of years, but companies have started to prepare for the changes.

1.3 As a result of these developments, consumers can today take up Voice over Internet Protocol (VoIP) call services, which use a broadband connection to make calls. Over the next few years these broadband-based call services will become more common and will eventually replace traditional landline call services.

1.4 In the absence of other measures, calls made over broadband using VoIP-based technology will not function in a power cut, as the broadband equipment at the premises requires mains power to work. As a result, calls will only be possible if additional protection measures are put in place.

1.5 This raises the question as to how providers continue to meet the requirements in General Condition (GC) A3.2(b) to "take all necessary measures" to ensure "uninterrupted access to Emergency Organisations[1] as part of any Publicly Available Telephone Services offered" when customers are making calls over broadband.

1.6 In May 2018, we consulted on guidance on GCA3.2(b), which set out how providers could meet the obligation to ensure uninterrupted access to emergency organisations during a power outage for those customers using VoIP technology. The proposed guidance set out four Principles that we considered, if followed, are likely to mean that a provider is meeting that obligation.

Consultation responses and final guidance

1.7 In general, respondents welcomed the greater regulatory certainty that the guidance provides, and broadly agreed with our proposals. Some respondents sought clarity on particular aspects of the guidance, and others thought elements needed to be amended to ensure they were not unduly onerous on providers. We have summarised the responses received and addressed the concerns raised within this document.

[1] Defined as the police, fire, ambulance and coastguard services.

1.8 We have reviewed all the points raised and consider that the Principles represent appropriate and proportionate measures that providers should take in meeting their obligations. We have taken into account:

a) the significant developments in the market for voice calls, including the fact most consumers now own and use a mobile phone and most consumers with a landline use a cordless phone;

b) the need to protect those customers who are reliant on their landline such as those without access to a mobile or reliable indoor mobile coverage, or who are housebound or have a greater need to call emergency organisations due to their circumstances; and

c) the costs and practicalities associated with undertaking the measures set out in the Principles.

1.9 This statement confirms the Principles we set out in our consultation. In summary:

1. Providers should have at least one solution available that enables access to emergency organisations for a minimum of one hour in the event of a power outage in the premises;
2. The solution should be suitable for customers' needs and should be offered free of charge to those who are at risk as they are dependent on their landline;
3. Providers should i) take steps to identify at risk customers and ii) engage in effective communications to ensure all customers understand the risk and eligibility criteria and can request the protection solution; and
4. Providers should have a process to ensure that customers who move to a new house or whose circumstances change in some other way are aware of the risk and protection solution available.

1.10 The final guidance is set out in Annex 1.

1.11 The obligations in GCA3.2(b) are extensive, and the guidance is not intended to be the definitive guide on how providers can comply with this Condition. Instead, the guidance sets out Ofcom's expectations in relation to what providers should do to maintain access to emergency organisations in the event of a power cut at the customer's home or premises.

1.12 As this guidance relates to a General Condition that is already in place, it applies immediately.

2. Basis for our guidance

2.1 In this section, we summarise Ofcom's functions and duties, as well as providers' regulatory obligations to take measures to ensure uninterrupted access to emergency organisations for their customers. We then set out the background to why we have published this guidance along with a summary of the structure of this document.

Regulatory obligations and duties

General duties

2.2 Under the Communications Act 2003 (the Act), our principal duty in carrying out our functions is to (a) further the interests of citizens in relation to communications matters and (b) further the interests of consumers in relevant markets, where appropriate by promoting competition. We consider that the ability to access emergency organisations represents a critical citizen interest given the safety of life implications and this is therefore central to our considerations.

2.3 In performing our duties, we are also required to have regard to a range of other considerations, which appear to us to be relevant in the circumstances. In the context of uninterrupted access to emergency organisations, we consider that several such considerations are relevant, for example:

- the circumstances of citizens who appear to us as needing special protection; and
- the desirability of encouraging investment and innovation in the telecommunications market.

2.4 In performing our principal duty, we must also have regard to principles appearing to Ofcom to represent the best regulatory practice. We place emphasis on Ofcom's regulatory principles including:

- ensuring that our interventions are evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome; and
- seeking the least intrusive regulatory mechanisms to achieve our policy objectives.

2.5 We believe that the guidance we are proposing will help achieve our objectives by providing stakeholders with clarity and certainty on how in general we intend to approach compliance with GCA3.2(b) in relation to the specific issues covered by the guidance. The purpose of this guidance is to set out proportionate, technologically neutral expectations that meet our principal duties and ensure that telecoms infrastructure remains fit for purpose in the future.

2.6 We wish to make it clear that we may depart from the guidance in individual cases. It is intended to set out the general approach we would normally expect to take in investigating compliance with GCA3.2(b) in relation to the specific issues covered by this guidance, but it will not have binding legal effect and each case will be considered on its own merits. If we

decide to depart from the guidance, we will set out our reasons for doing so, and it may be subject to further review and revision from time to time.

The General Conditions of Entitlement

2.7 Under the General Authorisation regime, providers must comply with certain regulatory conditions known as the General Conditions of Entitlement. These Conditions are imposed by Ofcom under Part 2 of the Act and they apply to the providers specified in them.

2.8 The General Conditions of Entitlement impose specific obligations on providers in relation to the availability of services and access to emergency organisations. These obligations are extensive because of the critical nature of telephone availability and access to emergency organisations.

2.9 The most relevant obligation for these purposes can be found in GCA3.2(b). GCA3.2 sets out that:

"Regulated Providers must take all necessary measures to ensure:

a) the fullest possible availability of the Public Electronic Communications Network and Publicly Available Telephone Services provided by them in the event of catastrophic network breakdown or in cases of force majeure; and

b) uninterrupted access to Emergency Organisations as part of any Publicly Available Telephone Services offered".[2]

2.10 'Emergency Organisation' is defined in the General Conditions of Entitlement:

"'Emergency Organisation' means in respect of any locality:

a) the relevant public police, fire, ambulance and coastguard services for that locality; and

b) any other organisation, as directed from time to time by Ofcom as providing a vital service relating to the safety of life in emergencies"[3]

Ofcom has not directed any other organisations as providing a vital service relating to the safety of life in emergencies.

2.11 GCA3.2 implements the second (underlined) part of Article 23 of the Universal Service Directive[4] which stipulates that *"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".*

[2] See the revised General Conditions of Entitlement, page 4.
https://www.ofcom.org.uk/__data/assets/pdf_file/0021/112692/Consolidated-General-Conditions.pdf.
[3] See the revised General Conditions of Entitlement, pages 67-68.
[4] Directive 2002/22/EC as amended by Directive 2009/136/EC.

2.12 Directive 2009/136/EC, which amended the Universal Service Directive, includes a number of recitals relevant to new voice services provided over IP, including recital 35 which states that "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."

Background

2.13 In December 2011, Ofcom published revised guidelines on how providers supplying voice services over Fibre to the Premises (FTTP) networks could meet the requirements of the General Conditions (the 2011 Guidance).[5] The 2011 Guidance consisted of three principles which applied to both new-build and 'overlay' FTTP deployments:

1. A battery back-up should always be provided to support publicly available telephone services (PATS) provided over FTTP.
2. The minimum duration of the back-up facility should be 1 hour.
3. Providers should take appropriate steps to ensure that the needs of consumers requiring additional protection, and who depend on 999/112 to a greater extent than the majority of the population, are addressed.

2.14 In the years since this guidance, mobile ownership has increased rapidly[6], mobile coverage has improved[7] and mobile networks are becoming the platform of choice for voice services for many consumers.[8]

2.15 In addition, the types of landline phones that consumers are choosing has changed over time. Our research suggests that 68% of customers that have a landline in their home have a cordless phone only[9], and that 50% of customers that live in a home with only a landline phone use a cordless phone rather than a traditional corded phone.[10] Cordless phones are very unlikely to work in the event of a power cut as the unit that plugs into the phone socket also needs mains power to work and these do not tend to have a battery.

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[5] Ofcom, 2011. *Guidelines on the use of battery back-up to protect lifeline services delivered using fibre optic technology.* https://www.ofcom.org.uk/__data/assets/pdf_file/0027/76527/battery_backup_statement.pdf.

[6] In 2017, 94% of adults personally owned/used a mobile phone. See Ofcom's *Communications Market Report 2017*, page 6. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0017/105074/cmr-2017-uk.pdf.
Around 73% of total call volumes were made from a mobile in 2016. See: *Ofcom Telecommunications Market Data Update* Q4 2017. Figure was calculated using fixed summary of call volume data (fixed section Table 3) and mobile call and message volumes by call type data (mobile section Table 2). Available at: https://www.ofcom.org.uk/research-and-data/telecoms-research/data-updates/telecommunications-market-data-updateq4-2017.

[7] See paragraph 3.127 of this document.

[8] See paragraph 3.12 of this document.

[9] *Ofcom Phone Use in the Home Survey*, page 9. https://www.ofcom.org.uk/__data/assets/pdf_file/0016/114217/phone-use-home-survey.pdf.

[10] Ibid, page 88.

2.16 It is clear therefore that the way voice services are used by consumers has changed and is likely to continue to do so as providers increasingly move away from services that rely on copper wire to broadband technology and given providers with substantial PSTN infrastructure have indicated their intentions to retire these networks by 2025.[11] However, a significant number of people remain dependent on their landline such as those consumers who live in a home with no mobile signal on any network. In addition, our research suggests that, in relation to voice services, approximately 2 million adults live in a home with a landline and no mobile phone.[12]

2.17 Ofcom announced the withdrawal of the 2011 Guidance as part of our Strategic Review of Digital Communications.[13] That document stated that Ofcom would "...assess what operators are doing on a case-by-case basis provided the technical solution delivers a level of protection equivalent to that provided by traditional means".[14]

2.18 Since then, providers have sought clarity from Ofcom regarding our expectations in terms of the measures that should be in place to meet the GC requirements. To ensure that those dependent on their landline are protected, we consider that it is now appropriate to provide guidance to all providers on this matter.

2.19 We published a consultation on proposed guidance on protecting access to emergency organisations (the Consultation)[15] on 24 May 2018 and this document sets out our final conclusions.

The structure of this document

2.20 In section 3 we address the Principles in turn, setting out the responses received to the Consultation and our analysis of the issues raised. Where relevant we have clarified our guidance to ensure our expectations are clear.

2.21 In Annex 1 we have set out the final guidance.

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[11] Across the world telecoms companies are transitioning to digital or fibre technology and providers with substantial PSTN infrastructure have signalled their intentions to retire these networks in the next few years. In the UK, most recently, Openreach set out the need to withdraw certain products that rely on the BT PSTN in recognition that these products will no longer work when the PSTN closes. Following a consultation, Openreach published a statement responding to the comments received on 1 October 2018.

[12] *Ofcom Technology Tracker H1 2018*, 4% of adults live in fixed only homes (in relation to voice services). Figure was calculated using the Office for National Statistics (ONS) mid-year population estimates for 2016.

[13] Ofcom, 2016. *Making communications work for everyone: Initial conclusions from the Strategic Review of Digital Communications*. https://www.ofcom.org.uk/__data/assets/pdf_file/0016/50416/dcr-statement.pdf.

[14] This position was reiterated in Ofcom's 2017 *Connected Nations Report* which stated that "Emergency services access should be provided in accordance with the General Conditions" and "Technical solutions for ensuring reliable operation of new voice services, for example during localised or widespread power outages, should provide levels of protections equivalent to that provided by traditional means. We will assess the suitability of such solutions on a case-by-case basis, taking into account the technical limitations and customer usage of both the traditional and new services". See Ofcom, 2017. *Connected Nations Report 2017: Data Analysis*, page 72.
https://www.ofcom.org.uk/__data/assets/pdf_file/0021/108516/connected-nations-security-resilience-2017.pdf.

[15] Ofcom, 2018. *Proposed guidance on protecting access to emergency organisations when there is a power cut at the customer's premises: Proposals for guidance on General Condition A3.2(b).*
https://www.ofcom.org.uk/__data/assets/pdf_file/0018/114219/consultation-access-emergency-power-cut.pdf.

3. Consultation proposals and responses

3.1 In this section, we have addressed the application of the Principles and each of the proposed Principles set out in the Consultation, in turn. We have summarised the proposals in the Consultation before setting out the issues raised by stakeholders. We have responded to those points before setting out our conclusions, including any changes that we have made to the guidance as a result of the feedback received.

3.2 We received 28 responses, 27 of which have been published (in whole or in part) on our website and one which was confidential.[16]

3.3 Issues that are not covered by GCA3.2(b), such as the impact of the increased take up of VoIP services on over-the-top (OTT) services and network resilience more generally, are not within the scope of this guidance. Therefore, we have not addressed them in any detail within this analysis.

3.4 In the Consultation, to help set out our expectations in relation to each Principle, we discussed each component part of the Principles in turn. We have adopted the same approach here.

Principles based approach

Summary of responses

3.5 The Communications Consumer Panel (CCP), the Internet Telephony Services Providers' Association (ITSPA), two members of the public, TalkTalk, Verizon, Virgin Media, Vodafone, Vonage and [✂] commented on Ofcom's principle-based approach.

3.6 Some respondents disagreed with our proposals and believed that Ofcom should instead require providers to engage in effective communications with customers, so they understood the risks and could choose to invest in a protection solution if required. Verizon, Vonage and ITSPA noted that Ofcom was the only telecommunications national regulatory authority to require providers to adopt a hardware solution to allow access to emergency organisations. Verizon thought that Ofcom should consider the approaches adopted by other countries that had completed the transition to IP. It noted that the Federal Communications Commission in America required providers to offer a solution to their customers but they were able to charge customers who chose to take it up. Similarly, a member of the public did not think providers should be compelled to provide protection solutions.

3.7 A member of the public, Verizon and [✂] noted that while the guidance focused on the customer's premise, power outages could affect larger areas including network equipment

[16] Available at: https://www.ofcom.org.uk/consultations-and-statements/category-2/access-emergency-organisations-power-cut.

at the cabinet or exchange. Verizon therefore argued that guaranteeing an hour's access at the customer side was not reliable.

3.8 [✂] said it did not appear that Ofcom had performed a cost-benefit analysis as part of the Consultation. It argued that one should be carried out prior to confirming the final guidance to demonstrate that it was proportionate. Similarly, TalkTalk said the guidance should take a proportionate approach balancing the need to encourage investment and innovation with the need to protect those consumers at risk.

3.9 Vodafone thought that the guidance should make clear that the Principles did not apply to providers of a PATS service that already benefited from network-based resilience, such as those continuing to use PSTN or emulated PSTN.

3.10 Verizon believed that the Principles should be re-ordered so providers had to identify at risk customers before developing an appropriate solution. It noted that a provider may not have any at risk customers within its base, or a very small number.

3.11 TalkTalk thought Ofcom should conduct a further review following the implementation of the guidance to ensure consistency between the regulation of the services offered by OTT voice providers and traditional providers. The CCP also suggested that Ofcom committed to review the guidance when necessary to ensure it adequately protected consumers in vulnerable circumstances.

Ofcom's response

3.12 As discussed in paragraphs 2.9 - 2.12 above, the GC implements Article 23 of the Universal Service Directive which requires Members States to ensure that undertakings providing PATS take all necessary measures to ensure uninterrupted access to emergency services. We consider that our guidance, which requires the targeted provision of protection solutions, is a proportionate response that adequately takes into account a range of factors particular to the UK. These include:

- the level of protection currently afforded to voice customers using the PSTN (which remains powered by the local exchange during a power outage);
- consumers' increasing reliance on mobile networks for their voice calls, including calls to the emergency services (around 70% of calls to emergency organisations are now made over mobile networks[17]);
- our research indicating that a significant minority (approximately 2 million adults) of voice customers only have a fixed voice service[18]; and
- 68% of those customers that only have a landline voice service in their home only have a cordless phone[19] which will not allow them to make calls during a power cut.

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[17] Ofcom, 2017. *Connected Nations Report 2017*, paragraphs 1.21 and 4.9. https://www.ofcom.org.uk/__data/assets/pdf_file/0024/108843/summary-report-connected-nations-2017.pdf.

[18] *Ofcom Technology Tracker H1 2018*, 4% of adults live in fixed only homes. Figure was calculated using the ONS mid-year population estimates for 2016.

[19] *Ofcom Phone Use in the Home Survey*, page 9.

3.13 The focus of this guidance is on Ofcom's expectations in relation to the provision of measures to maintain access to emergency organisations in the event of a power outage at the customer's home or premise. Providers should continue to ensure they are taking all other necessary measures to maintain uninterrupted access to emergency organisations. This includes ensuring that they are doing everything technically possible and within their reasonable control to ensure that their network and/or services are robust and resilient so that customers have access to these vital lifeline services. Given the different network architectures, technologies, scale and resources, setting out specific guidance on general network resilience is considered impractical and is not within the scope of this guidance.[20]

3.14 With respect to a cost-benefit analysis, in drafting our proposals and confirming this final guidance, we have considered the impact of our guidance on providers in terms of the costs to provide protection solutions, the importance of encouraging investment and innovation in the telecommunications market, along with potential safety of life implications if consumers are not afforded adequate protection during power outages at their premise. These issues are addressed throughout our analysis.

3.15 We consider that it is clear that the Principles do not apply to providers of PATS, or of a Public Electronic Communications Network (PECN) over which a PATS service is provided, that already benefit from network-based resilience (such as traditional copper-based voice services that are powered by the local exchange during a power outage). However, for the avoidance of doubt, we will state this within the final guidance.

3.16 While providers may not currently have at risk customers within their customer base, we would expect them to have processes in place to enable them to identify at risk customers during the sign-up process or those that may become at risk due to a change in their circumstances. As a customer may be identified as at risk at any time we would expect providers to have appropriate solutions available that they can deploy at short notice.

3.17 We intend to engage with providers regularly to see what measures they have put in place to meet the GC. We will also continue to monitor any complaints we receive about customers' migration experiences, including their interaction with their providers and the solutions they are offered, as well as addressing any significant concerns through formal enforcement action.

Application of the Principles

3.18 In the Consultation we explained that the obligations in GCA3.2(b) apply to all providers of a PATS and all providers of a PECN over which a PATS is provided. This would include any 'reseller' of a PATS service, as well as any provider of an OTT service that meets the PATS definition.

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[20] Providers also have obligations with regard to network security and resilience under sections 105A to D of the Act. Ofcom publishes guidance on these obligations which is periodically reviewed and updated. This year we intend to gather information about general fixed and mobile network resilience to mains power outages and publish an overview of arrangements as part of our *Connected Nations Report* series.

3.19 We acknowledged that for those providers who offer only the network element or only the VoIP service to the customer, there may be situations where it may not be possible and/or proportionate to take all the measures set out in the Principles to meet their obligations in GCA3.2(b).

3.20 We set out that Ofcom would consider compliance with GCA3.2(b) on a case-by-case basis by, amongst other things, considering whether it would have been technically feasible and/or within the provider's reasonable control to follow all the measures set out in the Principles.

3.21 We said that the assessment of what is technically feasible would include an element of proportionality. What is under a provider's reasonable control is likely to vary depending on the type of relationship they have with the customer and/or any other regulated provider.

3.22 We also noted that if a customer is taking the network element and VoIP service from separate providers, then there may be an opportunity for providers to work together to ensure that their customer is protected as necessary.

Summary of responses

3.23 We received responses in relation to the applicability of the Principles from 9 Group, BUUK, the Federation of Communication Services (FCS), Gigaclear, Hyperoptic, ITSPA, Magrathea, Openreach, Post Office, TalkTalk, Verizon, Voipfone, Vonage, Virgin Media and [✂]. The responses can be broadly placed into three categories, considered further below.

Responsibility for compliance when different providers supply the network and voice service

3.24 Most Consultation respondents did not disagree that GCA3.2(b) applies to both PATS and PECN providers, however a number queried which party was responsible for identifying at risk customers, supplying a protection solution and paying for it, when the PATS and PECN are provided by different providers. Notably, some respondents considered that a particular provider should have primary responsibility for identifying and protecting customers from the risk of their phone not working in a power cut, and there were conflicting views on which this should be.

3.25 BUUK, Hyperoptic, Openreach and Gigaclear argued that the PATS provider should be primarily responsible given that they understood the voice service they provided and had an established relationship with the customer. TalkTalk argued that PATS providers should have primary responsibility, but that network and wholesale providers should share some of that responsibility.

3.26 Voipfone, Magrathea, Vonage, FCS and Post Office argued that it should be the primary responsibility of the PECN provider as it would be disproportionate to expect the PATS provider to maintain broadband access in the event of a power cut. FCS suggested that the VoIP provider would be best placed to identify those at risk but should then provide that information to the network provider to offer a solution.

3.27 Magrathea, Vonage, Gigaclear and ITSPA argued that a lack of clarity on where responsibility lay created a risk that customers would not receive adequate protection, and others thought our suggestion that voice services and network providers should work together was not practical since there was generally no established relationship between them. ITSPA and Voipfone suggested that the industry should explore alternative remedies to protect at risk users, including the maintenance of a powered line. [✂] also suggested that industry collaborated with NICC to ensure a standardised interface for cases where the broadband and voice service were supplied by different providers.

Applicability of the 'information only' obligations in GCA3.3

3.28 Some respondents argued that the requirements in GCA3.3 should apply in the situation where the VoIP provider is separate to the network provider rather than the requirements set out in GCA3.2(b).

3.29 FCS and Voipfone felt that any additional requirements imposed by the proposed guidance set out in the Consultation would be contradictory to GCA3.3 which requires relevant providers only to provide information. 9 Group felt that the obligations were ambiguous in this area owing to the differences between GCA3.2(b) and GCA3.3 and sought clarification from Ofcom on when GCA3.3 is applicable. Virgin Media had also understood that there was a discrepancy between the obligations that applied to providers that offered a traditional voice service in comparison to an OTT VoIP service.

Applicability to business customers

3.30 9 Group felt that the expectations on providers to ensure compliance with GCA3.2(b) in relation to business customers needed further clarity. It queried how the guidance would apply in the case of an employee working from home. It believed such provision was unreasonable and was instead a duty of care issue for the employer. ITSPA requested clarification on how the guidelines would apply to business customers.

3.31 TalkTalk noted that whilst GCA3.2(b) applies to business as well as residential customers, it anticipated a very small number of businesses would likely require a protection solution, highlighting the difference between sole traders and larger businesses that by nature were more likely to have greater communications resilience. Verizon argued that enterprise customers had different demands and expectations from residential and small business customers, and providers serving such customers should be exempted from these requirements.

Ofcom's response

Responsibility for compliance when different providers supply the network and voice service

3.32 The varying responses from providers about who should have primary responsibility, and the differing information that parties hold, highlight that there are many different scenarios that may apply depending on the relationship the customer has with each provider, as well as the relationship (if any) that the providers have with one another.

3.33 It will not always be the case that one provider will hold more information than the other; this is dependent on what information customers share with each provider during the sign-up process or during the normal course of business. In addition, it is not always the case that the network provider will not know who the voice provider is/will be. It is therefore not possible to generalise about which provider might have more information and therefore be best placed to identify and protect the customer.

3.34 We acknowledge and appreciate that this adds an element of complexity to the practical steps that providers need to take to ensure their customers are protected; however, we do not consider that the answer is that 'primary' responsibility for protection should be placed on either the network provider or the VoIP service provider. We consider that both providers are responsible for their own network or voice service and have a role to play in ensuring that their customers are protected from the risk of their phone not working in a power cut – whether this is because they are supplying the voice service itself, or the underlying network that the voice service is reliant on.

3.35 While we appreciate that, for example, a network provider may not know everything about a voice service being supplied by another provider, it will be aware that any VoIP service connected to its network will not work in the event of a power cut. It should therefore be able to communicate this to its customers and take appropriate and proportionate steps to ensure they are protected if they are reliant on their landline (whether that be by, for example, working with the VoIP service provider to ensure a solution is in place, or by protecting its own network connection). Even in situations where the customer has not yet taken a VoIP service, if they are identified as potentially in need of protection, there are still steps that the network provider could take to ensure the customer will be protected (whether this be by, for example, informing the customer that they should contact the network provider again once they have chosen a VoIP service or by protecting the network connection).

3.36 Similarly, while we appreciate that a VoIP service provider will not necessarily be able to power the network connection if it does not have any knowledge about the nature of that connection, it should still have a number of appropriate and proportionate options available to ensure that its customer has the protection that they require (whether that be by, for example, working with the network provider to ensure a solution is in place, or by providing a solution capable of working with any network e.g. an uninterruptible power supply (UPS) or mobile handset).

3.37 The exact method chosen needs to be a decision made by the particular provider bearing in mind its own circumstances and what is possible and proportionate based on this. A provider may for example find it only has a handful of at risk customers and therefore may choose to provide a protection solution rather than work with the other provider e.g. by providing a UPS or a mobile handset. There are many options, but the most important thing is to ensure that customers who require protection receive this, so they are not left vulnerable in the event of a power cut.

3.38 We continue to consider that both parties should take responsibility for ensuring that their customers are protected and should build appropriate processes and communications

around this that work for their own business and customers. Therefore, each should be mindful of the other when they are designing their processes and communications. We welcome the suggestion made by some respondents that industry could benefit from discussing their plans and trying to adopt a more collaborative and consistent approach where appropriate, and therefore we intend to help facilitate those discussions.

Applicability of the 'information only' obligations in GCA3.3

3.39 GCA3.3 sets out that:

"Regulated Providers must inform their Domestic and Small Business Customers in plain English and in an easily accessible manner that access to Emergency Organisations using VoIP Outbound Call Services may cease if there is a power cut or power failure, or a failure of the internet connection on which the service relies. This information must be provided during the sales process, within the terms and conditions of use, and in any user guide issued by the Regulated Provider".

3.40 GCA3.3 applies to any provider of a 'VoIP Outbound Call Service'.[21] A VoIP Outbound Call Service is defined as:

"'VoIP Outbound Call Service' means a service that allows End-Users to make (but not receive) a voice call to a number included in the National Telephone Numbering Plan using an internet connection where the service is provided independently of the provision of the internet connection, excluding any Click to Call Service" [emphasis added].

3.41 By contrast:

"'Publicly Available Telephone Service' means a service made available to the public for originating and receiving, directly or indirectly, national or national and international calls through a number or numbers in a national or international telephone numbering plan".

3.42 A key difference is that a VoIP Outbound Call Service would not allow customers to *receive* a voice call from a number included in the National Telephone Numbering Plan. If a VoIP provider is providing a VoIP Outbound Call Service, then it will not be providing a service that meets the definition of a PATS service. In this case, the VoIP provider would not be subject to the obligations in GCA3.2(b), and therefore the Principles would not apply, but it would be caught by the obligations in GCA3.3. On the other hand, if a VoIP provider is providing a PATS service then it will be caught by the stricter obligations in GCA3.2(b) and should be taking account of the Principles.

Applicability to business customers

3.43 As set out in the Consultation, GCA3.2(b) applies in relation to any PATS services offered and therefore providers should take account of the Principles when considering both domestic and business customers.

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[21] See GCA3.1(b).

3.44 We note that the proportion of business customers who would be reliant on their business phone line as their sole method of contacting the emergency services in the event of a power cut is likely to be extremely small. Many businesses, particularly larger enterprises, will opt to purchase their own resilience solutions to meet their specific needs and deal with power outage and security risks more generally. We therefore consider it is appropriate and proportionate to expect providers to take account of the Principles when considering their business customers.

3.45 In addition, we note that there may be situations where it would not be possible and proportionate to comply with all of the Principles in relation to business customers. For example, it may not be proportionate for a provider to offer a backup protection solution capable of powering all the phone lines in a large office or large enterprise. However, if a provider identifies that one of their business customers is reliant on this phone line e.g. a sole trader working from home or a small office with no mobile signal, then it is likely to be proportionate to take steps to ensure that this customer has the protection that they require, bearing in mind the Principles.

Conclusion

3.46 We do not intend to make any changes regarding how the guidance applies to both PATS and PECN providers, and residential and business providers. Therefore, we continue to consider that both PATS and PECN providers need to be mindful of the guidance and consider how it applies to them given the unique circumstances of their businesses. Where relevant, we expect providers to work together to ensure that their customers are adequately protected. Similarly, we expect providers to take account of the Principles when considering the protection required by their business customers.

Principle 1: Providers should have at least one solution that enables access to emergency organisations for a minimum of one hour in the event of a power outage in the premises

3.47 In the Consultation, we set out that providers should have at least one solution which would allow customers to access emergency organisations in the event of a power outage at their premises. We noted that in the UK, emergency organisations are defined as the public police, fire, ambulance and coastguard services, and so providers were only obliged to provide access to those services.

3.48 We explained that the obligations in GCA3 were technology neutral and so we did not prescribe what type of solution providers should develop.

3.49 We considered that one hour's protection represented an appropriate minimum level of protection to provide customers taking VoIP services in most cases. We recognised, however, that some individual customers might require protection beyond one hour, for example, because they lived in households with a history of long-duration power outages, and that providers should take steps to ensure those customers were protected.

3.50 We also set out an expectation that providers would have procedures and processes in place, appropriate to the solution adopted, to ensure it continued to work on an ongoing basis.

Providers should have at least one solution

Summary of responses

3.51 We received comments on the development of a protection solution from the Broadband Stakeholder Group (BSG), BT, FCS, Gigaclear, the Joint Radio Company (JRC), KCOM, a member of the public, Shropshire Council, Verizon, Virgin Media and Vonage.

3.52 A number of respondents, including BT, BSG, Gigaclear and KCOM, welcomed the fact that Ofcom had taken a technologically neutral approach to allow providers to develop a solution that best suited the particular characteristics of their service or network and customer base.

3.53 KCOM asked us to confirm whether the requirement "...to have at least one solution" meant that at least one type of solution must be deployed to all customers.

3.54 FCS said mandating the use of batteries in a domestic setting presented a number of risks such as premature battery failure and mechanical damage. It noted that the guidance did not include mandatory safety requirements. There was a large amount of poorly engineered and dangerously cheap battery back-up units on market, some of which could interfere with telecoms equipment.

3.55 Some respondents queried whether solutions which relied on a mobile network were viable given mobile coverage in the UK is not comprehensive. Virgin Media queried whether Ofcom would consider the provision of a mobile phone to a customer identified as at risk to be a suitable protection solution in some circumstances. It noted that such an approach would be cheaper and potentially provide more functionality than some alternatives. Vonage said if it was required to provide a solution, its default could be to provide a SIM free mobile phone. If the customer lived in a mobile not-spot, then an alternative solution would be developed. In contrast, one member of the public thought that a mobile device would not be an effective solution as devices lose their charge or can be misplaced.

3.56 JRC and a member of the public raised concerns about the resilience of mobile networks. JRC questioned our assumption that mobile phone networks would provide a reliable service during a power outage. It noted that there would often be mobile coverage in 'blacked out' areas from mobile base stations that had a backed-up power supply, but it was not clear for what amount of time they would continue to function during an outage affecting a wide area.

3.57 As noted in paragraph 3.29, Virgin Media had understood that different obligations applied to providers of OTT VoIP services, believing that the GCs simply required them to make clear to their customers that they would not be able to make voice calls in a power cut. In light of that, it queried whether Ofcom considered it reasonable for a provider to supply a

customer with a voice service without back-up if it was marketed as an explicit proposition, with appropriate informed consent. Given Virgin Media's protection solution relies on the mobile network to function, this would allow it to provide fixed voice services in mobile not-spots.

Ofcom's response

3.58 In requiring providers to develop "...at least one solution", we expect them to develop a protection solution which can be provided to customers identified as at risk and allows them to contact emergency organisations for a minimum of one hour. Providers may develop more than one solution if they are aware that different customers within their base have varying requirements or they may wish to provide enhanced protection to all, and therefore simply develop one solution. For example, providers must ensure equivalent access[22] to emergency organisations for customers who use textphones/text relay. These customers cannot dial 999 or 112 directly but use access codes, typically 18000. Providers may need to provide tailored solutions for these customers, taking into account whether they own a mobile, and whether that mobile can access text relay via the Next Generation Text app[23] at their home or premises, or if the customer has registered for emergency SMS (available on all mobile phones, not just smartphones[24]).

3.59 Given our guidance is not prescriptive and is technologically neutral, we do not intend to provide further guidance on the specifications that solutions offered by providers need to meet. We would expect any solutions provided to adhere to the relevant EU safety standards, however, and to function with any equipment they are intended to support.

3.60 In relation to mobile coverage, Ofcom's latest 'Connected Nations' report estimates that there is indoor mobile coverage by at least one mobile network operator for 99% of premises in the UK.[25] This is the most relevant measure to understand coverage when needing to make an emergency call, as emergency call roaming means that calls to the emergency services on 999 or 112 will automatically roam onto an available network if there is no coverage from the caller's own mobile service provider. While this figure is lower for rural areas and mobile signal can depend on the unique circumstances of a particular customer (such as the thickness of their walls and local signal obstructions), mobile coverage has continued to improve in recent years and we expect there will continue to be improvements in coverage in the years ahead.

3.61 Providers can choose to develop a solution that best meets the needs of their customers and the particular characteristics of the network or service they offer. While we acknowledge that a mobile solution will not be suitable for all customers, we consider that the provision of a mobile handset that allows a customer to make calls to the emergency

[22] Article 26(4) of the Universal Service Directive (as amended) requires Member States to ensure that access for disabled end-users to emergency services is equivalent to that enjoyed by other end-users.
[23] https://www.ngts.org.uk/.
[24] https://www.ngts.org.uk/how-to-use-ngt/contact-999-using-ngt.html.
[25] Figure calculated from coverage data collected as part of *Connected Nations*, see: https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-update-spring-2018.

services may be an appropriate solution in some cases. We would expect providers to only offer a mobile solution if they were sure that there was adequate coverage from at least one mobile network at the premise, and it was suitable for the customer's specific circumstances. We would also expect the provider to clearly communicate that the customer needs to keep their mobile charged and any limitations, such as the fact it could only be used to call emergency services if that was the case.

3.62 In relation to Vonage's suggestion of providing a SIM free mobile phone to those customers that have mobile coverage, we note that not all SIM free phones are able to make emergency calls.

3.63 With regard to JRC's concerns about mobile network resilience, we note that unlike fixed networks, the ability to make an emergency call over a mobile network depends on more factors than simply the ability to connect with the local exchange. For example, mobile coverage from one mast site often overlaps with coverage from an adjacent site. In addition, as mentioned above, emergency calls on 999 and 112 can roam between networks which provides additional coverage across much of the UK. Emergency calls also take priority over ordinary mobile calls which means that, even with limited capacity, an emergency call is more likely to be successful. Determining whether a particular mobile network or area is resilient to power loss requires a detailed understanding of multiple factors, and this lies outside of the scope of this guidance. As noted in the Consultation, however, we have an ongoing programme of work to monitor mobile network failures and use this to inform future policy on network resilience in general.

3.64 As noted in paragraphs 3.39 – 3.42 above, this guidance applies to all providers of PATS and of PECN over which a PATS is provided, which will include a number of OTT VoIP providers. The 'information only' obligations set out in GCA3.3 only apply to VoIP Outbound Call Service providers. With regard to Virgin Media's query about whether a provider can offer a voice service that has no back-up, we would expect a provider to be able to offer a protection solution to all at risk customers.

A minimum of one hour

Summary of responses

3.65 BT, the CCP, FCS, Gigaclear, JRC, KCOM, London Fire Brigade (LFB), members of the public, Post Office, TalkTalk, TEC Services Association (TSA), Virgin Media and [✂] commented on the requirement for providers to develop solutions that provide a minimum of one hour's protection.

3.66 A number of respondents believed that a minimum of one hour's protection was sufficient given the average length of a power cut is significantly less than one hour. Many thought that one hour was ample time to allow an individual to contact the emergency services when required.

3.67 Others were concerned that an hour was not enough. LFB noted that while an overview of UK power outages in 2015 found that the national average duration of a power cut was 50

mins[26], the average for Greater London was 2.6 hours.[27] Therefore, they believed the minimum of an hour would be ineffective in London and other places that experienced power outages in excess of the average. Others, including three members of the public and the CCP, argued that the minimum should be extended, suggesting a range of times from two to 48 hours. The CCP noted that a power cut could happen at any time, including in the middle of the night, and therefore those customers considered to be most at risk should be provided with a solution providing a minimum of eight hours' protection. JRC also noted that there were a number of circumstances, including inoperative machinery, a cold environment and fires originating from candles, where an emergency could occur long after the initial outage.

3.68 TSA noted that standards for UK and EU telecare alarms stipulated 24-hour battery back-up requirements to cover extended power-outages resulting, for example, from storm damage.

3.69 A number of providers, including BT, Gigaclear, TalkTalk and Virgin Media, disagreed with the expectation that providers should take appropriate steps to identify and address the needs of customers who would benefit from longer protection because, for example, they live in households that have a history of long-duration power outages. BT stated that it was "...disproportionate for Ofcom to expect [providers] to provide protection for customers experiencing power cuts of significant duration" and noted that these cases were the responsibility of the energy companies. Similarly, JRC argued that it was "...incumbent on the electricity network provider to remedy the situation". The Post Office suggested that Ofcom should discuss the costs being borne by providers due to energy industry failures with Ofgem. Several respondents noted that the definition of these customers was too vague and providers' obligations towards them unclear. Instead, they felt one standard should apply to all customers. TalkTalk thought that the requirement on providers to inform their customers about the duration of the protection offered by a solution was sufficient for the customer to assess whether their needs were met or not.

3.70 KCOM and FCS asked Ofcom to clarify the amount of 'talk time' required of a solution that enabled access to the emergency organisations. KCOM suggested this should be limited to 20 minutes in any given one-hour power outage. LFB noted that emergency calls needed to be of sufficient length for the agent to provide fire survival guidance if required and to allow a full appraisal of the situation. It also said providers needed to be aware that sometimes emergency calls disconnect and so additional time might be required to re-establish the call.

3.71 KCOM also noted that UK power networks could experience sequential power outages (whether local or potentially national) and therefore it is possible that a battery solution, such as a UPS, would be unable to recharge in sufficient time to provide sustained

[26] Eaton Corporation Plc, 2015. *Power Outage Annual Report, Blackout Tracker, United Kingdom Annual Report 2015*. See: http://powerquality.eaton.com/blackouttracker/default.asp.
[27] Ibid.

protection. It therefore argued that Ofcom should require one hour's minimum protection in relation to a single outage in a specified period, such as 24 hours.

3.72 [✂] queried whether the minimum of an hour applied when the solution was new or in perpetuity, when it was at full load, and at what temperature. It thought the guidance should be amended to make clear the minimum applied under normal household conditions.

Ofcom's response

3.73 In developing these Principles, we have considered the potential significant threat to life if providers do not offer any protection to customers, and what we would consider to be a proportionate and reasonable approach, taking into account the way consumers use voice services and their increasing reliance on mobile networks in recent years. We do not consider that providers need to offer protection to all customers and instead our guidance permits providers to take a targeted approach and only supply a solution to those customers that are identified to be at risk due to their reliance on a landline.

3.74 For those judged to be at risk, we consider that providers should offer a solution ensuring a minimum of one hour's access to the emergency organisations in a power cut.

3.75 In requiring providers to offer a minimum of one hour's protection, we have considered the costs and benefits of enhanced protection[28] and data on the average length of power outages.[29] For example, we note that as the protection offered by a particular solution increases, typically, the physical size of the solution that needs to be installed at the customer's premises will also increase, which may lead to customers turning down the solution even though they may well require the functionality it offers.[30]

3.76 We note LFB's concern that an hour is insufficient given that the average power outage in London in 2015 was 2.6 hours. That figure is drawn from a report based on reported power outages from sources such as news reports and personal accounts and as a result it is not clear to us that it represents a statistically robust figure in terms of the development of our guidance. In contrast, Ofgem data collected from relevant DNO suggests that the average length of time customers in London were without power per interruption in 2016-17 was less than 20 minutes.[31] Furthermore, our guidance makes clear that the onus is on providers to consider the individual circumstances of their customers and to ensure they provide solutions that are appropriate for their needs. Therefore, if a provider is alerted to the fact that a particular customer requires greater protection, for example because they

[28] See the 2011 Guidance.
[29] See Annex 1 of the Consultation. Readers should note that Ofgem subsequently advised us that the data relates to both domestic and non-domestic customers.
[30] In its Consultation response, Virgin Media made this observation based on trials of its IP voice service: https://www.ofcom.org.uk/__data/assets/pdf_file/0015/117213/Virgin.pdf.
[31] Ofgem, 2017. *RIIO-ED1 Annual Report 2016/17*, page 26. See data for 'LPN' in Table A2.1. https://www.ofgem.gov.uk/system/files/docs/2017/12/riio-ed1_annual_report_2016-17.pdf. (We note that the report does not make clear how the geographic region covered by UK Power Networks' London Network Area is defined).

live in an area that is subject to regular power outages longer than an hour, the provider needs to ensure it responds appropriately.

3.77 We acknowledge that some customers may experience one-off, unforeseen power cuts that are longer than an hour, and we accept that providers cannot be expected to predict where these will occur or provide solutions that protect customers in all exceptional circumstances.

3.78 We do not consider that this requirement undermines the responsibility that energy distributors have to resolve power outages as quickly as possible and to support those customers that may be at increased risk during an outage. Instead, it ensures that customers with no alternative means of contacting the emergency services can continue to do so for a minimum of an hour while their distributor works to restore their power supply.

3.79 We will continue to liaise with Ofgem and the energy industry, particularly Distribution Network Operators, to ensure they understand the impact of the upcoming changes to how phone services are delivered and can take steps to continue to communicate with their customers effectively during power outages, particularly those that are listed on their Priority Services Registers.

3.80 In meeting their customers' needs and developing solutions, providers will need to determine whether they wish to provide enhanced protection that will support emergency calls for more than an hour to all, and therefore simply develop one solution and provide it to every customer considered to be at risk, or whether to develop multiple solutions that offer differing levels of protection depending on the needs of particular customers.

3.81 With regard to talk time, we consider that providers should ensure that the protection solutions they deploy give customers sufficient talk time to have a meaningful conversation with the emergency organisations. This means that any solution offered will need to allow a call of sufficient length to allow the caller to describe the situation they are in and what help is required. Similarly, call agents need to be able to convey any life-saving information where relevant. We would expect providers to be able to justify the amount of talk time their solution offers and why they consider it to be adequate for users' needs.

3.82 We understand that some protection solutions that providers are developing require a power source to remain charged and that once they are depleted they will require time to recharge and function at full capacity. We recognise that providers may not be reasonably able to provide a protection solution that is able to provide continuous protection if a customer experiences a number of consecutive power outages and there is not sufficient time for it to recharge.

3.83 We consider that the one hour's protection should be achieved under typical conditions and, as discussed in paragraphs 3.89 – 3.91 below, providers need to have appropriate maintenance measures in place to ensure the solution continues to function effectively. We would also expect providers to make clear any limitations of the solution they are offering, for example, if the solution powers the router and permits its usual functionality, customers will need to be aware that if they use their broadband connection for other

applications, such as browsing the web or streaming content during a power outage, then they will reduce the amount of time it will support emergency calls.

Enables access

Summary of responses

3.84 BT, FCS, Gigaclear, KCOM and LFB made comments relating to the maintenance of any protection solution offered.

3.85 Some providers queried which party would be responsible for different aspects of any maintenance programme to ensure that a protection solution continued to work effectively. KCOM said a strict reading of the first principle implied that the maintenance of a battery solution, such as a UPS, would require an annual engineer visit. While it acknowledged that in some cases, for example where a customer was considered vulnerable, an annual maintenance visit would be appropriate, it was very difficult to gain access to customers' homes and there were significant operational costs involved in an engineer led replacement programme. It also noted that to replace batteries in a device would often be a very straightforward exercise. Therefore, it sought clarity as to whether customers could be given a share of the responsibility to ensure their solution continued to function by, for example, installing new rechargeable batteries in a UPS. Gigaclear envisaged a similar approach and believed it would be appropriate to inform the end customer how to check that their device was still working correctly or had sufficient charge and direct them to contact their provider for a replacement battery when required.

3.86 The FCS sought clarity regarding the extent of a provider's responsibilities, particularly as the battery aged. They queried whether a provider was responsible for the capacity testing, upkeep and compliance of any battery solution.

3.87 BT considered that for business customers, the responsibility for any upkeep of the protection solution should lie with the customer rather than the provider. It noted that business customers had different needs and expectations from domestic customers, and providers could not be expected to maintain a solution offered to business customers over the long term.

3.88 LFB said there was a need for a robust programme for installation, testing, maintenance and replacement of protection solutions, particularly for customers with physical and mental vulnerability that might inhibit them carrying out such activities.

Ofcom's response

3.89 As set out in our Consultation, we expect providers to have procedures and practices in place, appropriate to the solution adopted, to ensure that it will continue to work on an ongoing basis. In designing their approach, we would expect providers to consider the complexity of any maintenance required and the capabilities of their customers. We consider that for many solutions it may be appropriate for customers to take some responsibility for their maintenance by, for example, alerting their provider when the

battery needs replacing or installing a replacement. However, we would expect providers to supply customers with clear guidance around the steps they need to take and ensure that any indicators can be easily identified. Providers should also consider the needs of customers with disabilities, such as sight or hearing difficulties, and ensure that any expectations regarding the role they can take to monitor their solution are reasonable. If a solution, or the particular circumstances of a customer, leads a provider to take full responsibility for the maintenance of a solution, then we would expect the provider to do everything within their reasonable control to ensure that it is properly maintained.

3.90 We are committed to ensuring that the process of customers migrating from a voice service over the PSTN to voice over broadband will not result in harm or poor outcomes for consumers and businesses. We aim to ensure that migration does not cause undue disruption to customers. Within our recent Connected Nations reports[32] we set out the principles that would apply during migration to achieve this aim and these include a number of expectations around additional support that should be offered to those customers that might require help to understand and install new equipment. If the installation process for a protection solution is complex or may be difficult for a certain subset of customers, such as those with mobility issues, to carry out, we would expect providers to support that process.

3.91 As discussed in paragraphs 3.43 to 3.45, GCA3.2(b) applies in relation to any PATS service offered regardless of whether it is to a domestic or business customer. We note, however, that business customers, particularly larger enterprises, will have very different needs to domestic customers and, in many cases, are unlikely to be considered at risk. Smaller business customers, particularly those in rural areas, may be identified as at risk, however, and therefore may choose to rely on the solutions offered by their provider. As above, we would expect the provider to consider the particular circumstances of a business before determining where the responsibility for maintenance should lie.

Emergency organisations

Summary of responses

3.92 BUUK, the CCP, Shropshire Council, TSA and [✂] commented on the requirement for providers to ensure uninterrupted access to emergency organisations.

3.93 A number of respondents argued that the definition of 'Emergency Organisation' needed to be expanded. Some believed any solution should permit calls to '105', the national power cut and electricity network safety service, which allows customers to alert their energy distributor when their power fails. Others thought that calls to additional 'non-emergency' numbers should be permitted to alleviate the pressure on emergency services. For example, the CCP thought that customers on providers' Priority Services Registers (Priority Fault Repair in telecommunications) should also be able to call a friend or family

[32] *Connected Nations Report 2017: Data Analysis*; Ofcom, 2016. *Connected Nations Report 2016.* https://www.ofcom.org.uk/__data/assets/pdf_file/0039/95898/CN16-07.pdf.

member, allowing them to seek advice or reassure loved ones that they are safe. Shropshire Council and the TSA believe that Alarm Receiving Centres (ARCs, which receive calls from telecare devices) should also be included. TSA noted that UK ARCs receive in excess of 50 million calls per annum and typically resolve 95-97% of those calls without emergency call-outs. They anticipated that most, if not all, of those calls would fall directly on emergency services call centres if alarm services were inaccessible.

3.94 [✂] noted that under a strict interpretation of the GC, providers would only need to ensure that customers were able to contact the emergency services, however, Ofcom should make clear what it considered to be a good outcome for customers even if it could not compel providers to ensure the availability of additional numbers.

Ofcom's response

3.95 GCA3.2(b) stipulates that providers should ensure that customers have uninterrupted access to 'Emergency Organisations'. 'Emergency Organisation' is defined in the revised General Conditions as the relevant public police, fire, ambulance and coastguard services for the locality – the bodies that customers can contact using the emergency call numbers 999 and 112. As discussed in paragraph 3.58, providers also need to ensure equivalent access[33] to emergency organisations for those customers that use textphones/text relay. As no additional organisations are currently classified as 'Emergency Organisations', including ARCs and the national power cut and electricity network safety service, Ofcom cannot compel providers to ensure their customers have access to those organisations during a power outage. While we note that Ofcom can direct that other organisations 'providing a vital service relating to the safety of life in emergencies' are 'Emergency Organisations', this would have wider consequences and require separate consideration.

3.96 We note that some protection solutions, notably battery back-up units which simply power the router and ensure a voice service can be conveyed over a broadband connection, allow customers to call any number. Therefore, providers may wish to develop solutions which offer this enhanced connectivity.

3.97 We welcome the fact that some solutions will enable customers to call any number but note that providers will need to make clear that if their solution supports non-emergency calls, those calls will use up its talk time, reducing the power available for an emergency call if subsequently required.

3.98 Similarly, the customer should be made aware of any limitation on the numbers they can call if any applies.

[33] Article 26(4) of the Universal Service Directive (as amended) requires Member States to ensure that access for disabled end-users to emergency services is equivalent to that enjoyed by other end-users.

Principle 1 conclusion

3.99 We do not intend to make any changes to Principle 1 in light of the responses received from stakeholders, however, we have clarified aspects of the guidance. We consider that providers need to develop at least one protection solution to ensure that customers can access the emergency services during a power outage for a minimum of one hour. They must ensure equivalent access[34] to emergency organisations for those customers that use textphones/text relay. The protection solution(s) deployed should give customers sufficient talk time to allow them to describe the situation they are in and what help is required. We expect providers to be mindful of the individual circumstances of their customers and provide additional protection for those customers that may require it, for example, because they are regularly subject to power cuts that are longer than one hour and have no alternative means of contacting the emergency services. Similarly, providers should have procedures and practices in place to support the installation of the solution at a customer's premise where required, and to ensure it continues to work on an ongoing basis.

Principle 2: The solution should be suitable for customers' needs and should be offered free of charge to those who are at risk as they are dependent on their landline

3.100 The Consultation stated that providers should offer and implement solutions that are appropriate for the individual needs of their customers. We set out our expectation that providers would give due consideration to a customer's situation; for example, if a provider's solution relied on mobile signal to work, then they should ensure the customer lives in a premise with mobile coverage.

3.101 We also set out the expectation that providers should explain the pertinent features of their solution and draw particular attention to any inherent limitations or to any responsibility the customer needed to take for the protection solution to work effectively. We stated that the provider should satisfy themselves that the customer understood any responsibilities and was able to fulfil them without undue difficulty. For example, if a provider's solution powers a customer's router, they will require a corded phone to ensure access to emergency organisations. Therefore, if a customer had a cordless phone, we would expect the provider to clearly explain that the solution requires a corded phone and to satisfy themselves that the customer can access one.

3.102 We considered that providers should provide solutions free of charge to customers that were at risk due to their dependence on their landline.

3.103 We acknowledged that some customers that are offered a solution may choose to decline it if they feel they have alternative protection and noted that they should be free to make

[34] Article 26(4) of the Universal Service Directive (as amended) requires Member States to ensure that access for disabled end-users to emergency services is equivalent to that enjoyed by other end-users.

that choice. We emphasised, however, that providers should ensure that the fact a customer's phone will not work in the event of a power outage would need to be clearly communicated to the customer, and that the process and outcome reached should be carefully documented.

3.104 We considered that the following customers were likely to be dependent on their landline and therefore we expected that providers would offer them a free solution:

- those with disability and/or accessibility requirements that mean they have a greater propensity to contact emergency organisations; and/or
- those who do not have an alternative means of calling emergency organisations, for example, customers that do not own a mobile or have poor/no mobile coverage at their premise.

3.105 The Consultation also included a non-exhaustive list of potential indicators that might help providers to identify customers with a disability or accessibility requirement that means they are reliant on their landline, such as those registered for Priority Fault Repair, those who received bills and contracts in alternative formats such as large print and Braille, and those who were telecare or textphone users.

Suitable for customers' needs

Summary of responses

3.106 KCOM and TalkTalk commented on our suggestions around ensuring any solution offered was suitable for customers' needs.

3.107 KCOM agreed it was appropriate to communicate that there may be issues with a cordless phone in the event of power failure. It noted that the same issues arose whether a customer's line was powered or not.

3.108 KCOM also said it was unclear whether Ofcom considered it was proportionate to expect a provider to offer a corded telephone free of charge where the solution was deployed but the customer only had a cordless phone.

3.109 TalkTalk understood Ofcom's position to mean that a provider was not required to offer a corded phone if it was needed for the protection solution to work, but that the customer should be made aware that they would need to purchase a corded phone in order to benefit from the protection.

Ofcom's response

3.110 We maintain that providers should explain to their customers the pertinent features of any solution provided. This includes drawing the customer's attention to any inherent limitations of the solution, or to the responsibilities the customer has to ensure the protection is maximised. The provider should satisfy itself that the customer understands their responsibilities and is able to fulfil them without undue difficulty.

3.111 For example, if the provider's solution requires a corded phone to work we would expect that requirement to be made clear to the customer, and for the provider to satisfy themselves that the customer can access one. We note that some customers may not be aware that their cordless phone will not work in the event of a power cut.[35] It is imperative that the situation does not arise where a customer is provided with a solution and believes they are protected only to find that their cordless phone does not work when they attempt to make a call to the emergency services in a power outage.

3.112 As discussed above, when ensuring a solution is suitable for a customer's needs, we would expect providers to consider the customer's ability to utilise a particular solution. For example, providers will need to be mindful of whether older customers who have never owned or used a mobile phone before would be comfortable to rely on one as their protection solution. Similarly, providers will need to ensure that any solution provided to a textphone/text relay user ensures equivalent access to emergency organisations.

Offered free of charge

Summary of responses

3.113 The majority of respondents agreed that those customers identified as at risk should be provided with a solution free of charge.

3.114 Sky and Virgin Media commented on our expectation that providers should offer the solution free of charge to those customers who are at risk due to their dependence on their landline.

3.115 Virgin Media noted that a provider could not force a customer assessed to be at risk to accept a solution if they did not want it. It was important that this was an informed choice and the provider was confident that the customer fully understood the risks of not accepting a solution. It argued that this should be explicit in the guidance. Similarly, Sky said the guidance needed to make clear that if a customer refused a solution, the provider was entitled to rely on affirmation from the customer.

Ofcom's response

3.116 We understand that some customers who are offered a solution free of charge may decline it, for example, because they have alternative protection. We agree that customers should be free to make this choice and cannot be forced to accept a solution they do not want. We maintain that providers will need to satisfy themselves that the customer in question understands that the phone will not work in a power outage and that unless they buy/have an alternative source of protection, they will not be able to contact the emergency services. The process and the customer's decision should be carefully documented.

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[35] Ofcom research suggests that 22% of all consumers who own a cordless phone may not be aware that this will not work in the event of a power cut and this percentage increases for those consumers living in homes with a landline but no mobile phone. See *Ofcom Phone Use in the Home Survey*, response to question 8.

Customers dependent on their landline

Summary of responses

3.117 BT, BSG, Gigaclear, Post Office, TalkTalk, TSA, Virgin Media, and [✂] commented on Ofcom's suggestions of factors to consider when assessing if a consumer was dependent on their landline.

3.118 A number of respondents welcomed the fact that we did not require a solution to be offered to all customers, but believed that our definition of at risk customers was too broad and should be narrowed, particularly given the costs involved in supplying at risk customers with a protection solution. As discussed in the 'Impact on competition' section below, some felt that unless the eligibility criteria, and therefore the costs, were limited, our guidance could result in competition issues.

3.119 TalkTalk, Post Office and BT argued that the absence of a mobile phone alone should not determine whether a customer was eligible for a protection solution. They noted that those customers may have chosen to not purchase a mobile but had the option to do so and therefore could effectively purchase adequate protection themselves. TalkTalk noted that any protection solution offered was likely to be less effective at addressing the risk that a customer could not contact the emergency services in the event of a power outage than a basic low-cost mobile. A mobile would provide longer battery life and enable the customer to call any number.

3.120 Gigaclear believed that the absence of mobile coverage in isolation did not mean that a customer should be eligible for a protection solution. Instead, it argued that the test should be whether the customer had both a disability or accessibility requirement that meant they were reliant on their landline **and** had no viable alternative means of contacting the emergency services. It was concerned that if the absence of mobile coverage alone was considered sufficient to merit a free protection solution, this would result in a high number of eligible customers and would limit the business case for providing VoIP services in rural areas. Such an approach would also increase the costs of rolling out broadband in rural areas, directly contradicting the Government's current policy.

3.121 TSA noted that many at risk customers would be those using social alarms or technology-enabled care services and so providers would be able to easily identify those who were eligible for a protection solution. In contrast, BT and TalkTalk thought that telecare users should not be automatically eligible for a protection solution. Given the diverse nature of what was classified as a telecare device, both thought telecare use was not a good proxy for having a disability or access requirement that meant a consumer was reliant on their landline. They referred to the 2013 Ofcom statement on 'Access to electronic communications services for disabled consumers[36]' (ECS Statement) which included an assessment of whether all care alarm users should be eligible for Priority Fault Repair and

[36] Ofcom, 2013. *Access to electronic communications services for disabled consumers*. https://www.ofcom.org.uk/__data/assets/pdf_file/0024/53727/gc15_statement.pdf.

concluded that they should not. TalkTalk also believed that those telecare users who were most at risk would already be registered for Priority Fault Repair and that register would be a better way to identify those in need of a solution.

3.122 Virgin Media did not think that customers who had been barred from calling high cost call ranges should be considered to be at risk. It said this could simply be an indication that the customer had teenage children or wanted to control their bill; it was not an indicator, in isolation, of vulnerability.

3.123 [✂] thought Ofcom's definition of 'at risk' was too broad and could result in different providers adopting different approaches leading to consumer confusion. It argued that Ofcom should work with the Office of the Public Guardian to determine an approach.

Ofcom's response

3.124 We consider that customers who have a disability or accessibility requirement that means they are more reliant on their landline and those who do not have an alternative method of calling emergency organisations should be eligible for a protection solution.

3.125 While we note the respondents' comments that some customers could easily purchase a mobile and therefore have protection during a power outage, given the prevalence of mobile phone use across all age groups, we consider it reasonable to expect that many customers who do not have a mobile phone would face substantial barriers to getting one, for example, due to a lack of signal at home, lack of confidence in using an unfamiliar technology, or affordability. We are concerned that if the criteria for eligibility are too narrowly defined, there is a risk that some vulnerable customers will not be offered the protection they need. We therefore consider that those individuals that do not have a mobile should be eligible for a free solution. As noted above, we remain technologically neutral as to what that solution should be, however, and if a customer indicates that they are happy to use a mobile phone, we consider it could be appropriate for a provider to provide a mobile to them as opposed to offering an alternative and potentially more costly solution that the provider has available. We would expect providers to give clear instructions regarding the fact customers will need to keep the phone charged.

3.126 We consider that all landline customers that do not have an alternative means of contacting emergency organisations in a power outage at the home should be offered a solution that allows them to do so. Individuals that live in mobile not-spots will have no alternative means of contacting the emergency services during a power outage and therefore we consider that they should be eligible for a free protection solution.

3.127 As mentioned in paragraph 3.60, Ofcom's latest 'Connected Nations' report estimates that there is indoor mobile coverage by at least one mobile network operator for 99% of premises in the UK.[37] While this figure is lower for rural areas and mobile signal can depend

[37] Figure calculated from coverage data collected as part of *Connected Nations*, available at: https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-update-spring-2018.

on the unique circumstances of a particular customer (such as the thickness of their walls and local signal obstructions), mobile coverage has continued to improve in recent years, through a mixture of industry investment, coverage obligations, and public funding. We expect there will continue to be improvements in coverage in the years ahead. We also note that while the lack of mobile coverage means a customer may be eligible for a protection solution, this does not necessarily mean that they will want one. Some customers will prefer to purchase an alternative means of powering their router which may, for example, enable them to power other items within the home that they wish to remain active during an outage.

3.128 We recognise the challenges to fibre investment in rural areas. However, given the importance of universal access to emergency services, we consider that our guidance regarding which customers should be eligible for a free protection solution is appropriate.

3.129 Within our Consultation, we included a number of suggestions regarding factors that could indicate that a customer might have a disability or accessibility requirement that meant they were more reliant on their landline and therefore may be eligible for a solution. Those remain suggestions of the type of indicators that may suggest that a customer has a disability or accessibility requirement, however, and not an exhaustive or prescriptive list of criteria that providers must adopt and which, if met, should automatically result in a customer being offered a solution. It remains the responsibility of providers to decide, reflecting on the range of data they hold or could obtain about their customers, which criteria they consider to be relevant when assessing a customer's needs and the particular approach they wish to take when communicating with different customers.

3.130 This means that while we consider the fact a customer uses a telecare device is useful information that may indicate that they are likely to be more dependent on their landline, it does not mean they are. Therefore, a provider may wish to discuss the specifics of a customer's disability with them prior to offering a solution or not, but the fact they are a telecare user may be a useful starting point to help determine the provider's approach when engaging with that customer.

3.131 In that respect, we consider that the inclusion of telecare as an indicator of disability or an accessibility requirement differs from the issue considered in the ECS Statement, where the assessment related to whether the use of a telecare device meant that a customer was automatically eligible for the Priority Fault Repair register.

3.132 Similarly, we consider that the fact a customer has network controlled calling or a bar on calls to high cost numbers may be one indicator of a disability or accessibility requirement that, when considered alongside others, could suggest that a customer is eligible for a protection solution.

Impact on competition

Summary of responses

3.133 BT, FCS, Hyperoptic, LFB, Post Office and TSA argued that our proposed guidance could have an impact on the level of competition within the voice market.

3.134 The Post Office, FCS and BT argued that if providers had to bear the costs of providing a protection solution, this could create a barrier to entry for smaller standalone voice providers who would find it difficult to absorb the costs due to small margins in comparison to larger providers and could impact on competition.

3.135 The Post Office also argued that the guidance penalised providers with a higher proportion of vulnerable customers. It had a large number of older and vulnerable customers and believed that our proposed guidance would result in a significant proportion of its customers qualifying for a free solution. It believed it should not be forced to incur higher costs due to the demographics of its customer base and that Ofcom needed to consider the proportion of vulnerable customers each provider had within their bases.

3.136 FCS and another respondent (confidentially) provided cost estimates. FCS thought that the likely cost of a UPS per connection was £75, with a managed install cost of circa £100 and ongoing maintenance costs of circa £35 every two to five years. In situations where the customer had a standalone landline for approximately £12 per month, smaller providers would not be able to recover their costs.

3.137 BT thought the volume of customers eligible for a protection solution under Ofcom's definition would impose additional costs on providers serving landline-only customers and could discourage them from supplying such customers so reducing competitive choice in that market. BT was also concerned that unless the volume of customers eligible for a solution was decreased, the overall costs of migrating customers to new VoIP services could disincentivise the rapid roll out of these services.

3.138 The Post Office and FCS suggested that funding of back-up solutions should be managed at the network level and therefore spread across industry. Post Office noted that until recently Openreach had provided battery back-up units as standard on all its FTTP lines.

3.139 Post Office, FCS, LFB and the TSA thought that if all providers developed their own solution and customers required different equipment if they switched suppliers this could disincentivise switching. Post Office noted that this risk would be mitigated if the protection solution was supplied at the network level and adopted across industry.

3.140 Hyperoptic also thought that new entrants could be disadvantaged by our proposals given that providers that already had a relationship with their voice customers would have a rich dataset to use to identify those at risk. In contrast, new entrants would have to engage in more nuanced and time-consuming communications with a new customer to assess their needs. It thought that sharing information related to a vulnerable 'flag' attached to a particular customer's record could be considered as part of an improved switching process.

Ofcom's response

3.141 We recognise there may be some variation between providers in the proportion of 'at risk' customers. However, given the essential safety of life nature of the requirement, we do not consider it is appropriate that the scope of eligibility for protection be reduced or our expectations of providers should vary depending on the make-up of their customer base.

3.142 We also consider that the extent of likely take-up and costs of the solution have been overstated in some responses.

3.143 On take-up, while we are not able to determine the proportion of customers that are likely to take up a solution due to a disability or accessibility requirement, we understand that the proportion of customers that are registered for Priority Fault Repair, which providers have identified as one indicator of the number who may be dependent on their landline, is likely to be under 4%.[38]

3.144 In respect of providers concerned that they have a higher proportion of older customers who may be more likely to be dependent on the landline because they do not have a mobile phone, we recognise that mobile phone ownership is lower amongst older customers. However, there has been a marked increase in take-up by older customers over the last five years: 66% of over 75s and 79% of over 65s owned a mobile in 2018 compared with 52% and 67% respectively in 2013.[39] This trend is likely to continue in the coming years and when considered alongside the likely improvements in mobile coverage, the volume of customers that are eligible for a solution because they only have a landline and no alternative means to call the emergency services is likely to fall between now and the time period over which the PSTN is switched off.

3.145 Finally, we consider that some customers that are eligible for a solution may decide they do not require one. For example, as noted in paragraph 3.127 above, some customers may prefer to purchase an alternative means of powering their router which may be better suited to their needs.

3.146 On costs, respondents have also suggested a range for the amount they anticipate that a protection solution will cost per unit depending on the nature of the solution, the functionality offered and whether it needs to be installed by the provider. While we appreciate that costs will vary depending on those factors, as noted in paragraph 3.38, we agree with the suggestion made by some respondents that industry could benefit from

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[38] Those eligible for Priority Fault Repair are households that include someone who is registered as Chronically Sick & Disabled and/or housebound due to a chronic long-term illness or disability. The ECS Statement included figures for the number of BT Retail and Virgin Media fixed voice customers that were registered for Priority Fault Repair in 2013. Those figures combined with 2013 subscriber data suggest that approximately 0.84% of BT's and 0.09% of Virgin Media's fixed landline customers in 2013 were registered. Even if take up has improved four-fold in the intervening years, the volume of BT's customer base on the register would still be less than 4% and Virgin Media's less than 0.5%.

[39] *Ofcom Technology Tracker.* https://www.ofcom.org.uk/__data/assets/pdf_file/0021/113169/Technology-Tracker-H1-2018-data-tables.pdf.

discussing their plans and trying to adopt a more collaborative and consistent approach where appropriate, and therefore we intend to help facilitate those discussions.

3.147 On providers' ability to recover the costs of providing a solution from consumers who take only a landline service (as opposed to a dual play customer who has a landline and broadband connection), Ofcom research indicates that there has been a steady increase in the number of customers taking up dual play (i.e. landline and broadband services) between 2013 and 2018, particularly amongst over 65s and over 75s.[40] These customers can be expected to be paying more for those services which should allow providers to recoup more of the cost of supplying customers with a protection solution where required.

3.148 More generally, on the point that our guidance may impact upon the level of competition within the voice only market, we note that Ofcom's 'Review of the market for standalone landline telephone services[41]' identified a lack of competition in provision of services for voice-only customers. In our concluding statement, published in October 2017, we noted that while we were introducing measures to promote competition, including accepting BT's voluntary line rental price cut, there were challenges to their being successful.

3.149 On switching, although providers are developing their own solutions, we do not consider the need for a consumer to install additional new equipment when they change providers will disincentivise them from switching. We note that the installation process, if carried out by the consumer themselves, will be straightforward, akin to installing a new router. As noted in paragraph 3.90, if the installation were particularly complex, or difficult for some customers, such as older individuals or those with poor mobility, we would expect the provider to offer support. Further, given there is no additional cost to customers if they are considered to be at risk, we consider our guidance does not present any financial barrier to switching providers. A more collaborative approach, as discussed in paragraph 3.146, could include using common technologies which would also address concerns about switching costs.

3.150 We acknowledge that different providers hold varying amounts of data regarding their customers and that new customers will present the greatest challenge in terms of making an assessment as to whether they are at risk or not. When identifying at risk customers we consider providers need to use the method that is most appropriate for their business model, sales process and the information they hold about their customers, and note that they may rely on customers self-identifying as at risk, once informed of the nature of the risk. In addition, if a customer has already been identified as at risk by their existing supplier, it is likely that they will just need to communicate this to a new supplier, who will not need to incur a cost for re-evaluating them.

[40] Take-up of dual play services has increased across all consumers from 36% in 2013 to 43% in 2018. For over 65s this has increased from 28% to 39%, and for over 75s from 20% to 36%, over the same period (*Ofcom Technology Tracker*).
[41] Ofcom, 2017. *Review of the market for standalone landline telephone services: Statement.* https://www.ofcom.org.uk/__data/assets/pdf_file/0015/107322/standalone-landline-statement.pdf.

Principle 2 conclusion

3.151 We do not intend to make any revisions to Principle 2 and continue to consider that customers that are dependent on their landline because they have no alternative means of contacting the emergency services or have a greater propensity to call the emergency services, should be offered a free protection solution. This includes customers that do not own a mobile phone, potentially out of choice, as well as those that do not have reliable indoor mobile coverage. While we have carefully considered respondents' concerns that the guidance could result in competition issues, we believe that providers may have overestimated the number of their customers that will require a protection solution and the likely costs involved. We also consider that our eligibility criteria are proportionate given the potential risk to safety of life if customers are not adequately protected.

Principle 3: Providers should i) take steps to identify at risk customers and ii) engage in effective communications to ensure all customers understand the risk and eligibility criteria and can request the protection solution

3.152 The Consultation proposed that providers should take steps to identify customers who may be reliant on their landline by utilising information that is already available to them about their customers and gathering further information as appropriate. For example, we suggested that a provider could use Ofcom's mobile checker to support their assessment of whether a customer is likely to be at risk due to poor mobile signal.

3.153 We thought providers are in the best position to think through the practicalities and assess the most effective way to gather any further information about their customers that they need to identify those that are at risk. While not providing detailed guidance on the questions that providers should ask their customers, or the method of asking those questions, we suggested that where a provider is engaged in one-to-one communication with the customer as part of the sales process, the provider could ask the customer relevant questions where necessary.

3.154 In addition, we set out our expectation that providers should engage in effective communications to ensure that all of their customers:

- understand the risk of the phone not working in a power cut;
- understand the eligibility criteria for receiving the solution free of charge; and
- can request the solution even if they have not been identified as at risk.

3.155 We said we considered it appropriate for providers to make the solution available to customers who were not identified as at risk but still requested the solution, but that whether to charge for the solution in those circumstances was at the discretion of providers.

Take steps to identify at risk customers

Summary of responses

3.156 In relation to how at risk customers could be identified, we received comments from BSG, BT, the CCP, KCOM, Gigaclear, Hyperoptic, ITSPA, Magrathea, Post Office, Sky, Vonage, Verizon and [✂].

3.157 Some respondents queried how providers could be expected to identify customers that were subject to longer power outages and therefore might require additional protection.[42] BT noted that power outages had a number of sources and were random in nature, so simply asking customers if they have a history of long-duration outages was unlikely to be accurate. KCOM suggested it was the individual customer's duty to provide evidence to their provider that they were subject to such outages. BSG argued providers should be free to rely on customers self-identifying as at risk.

3.158 A number of respondents had queries or concerns relating to how they could assess whether a customer had mobile coverage or not, to inform both decisions regarding whether they were eligible for a protection solution and whether they could be offered a solution that relied on the mobile network.

3.159 Gigaclear said that, if required, it would be very difficult to assess whether every voice customer had mobile coverage and such an assessment could result in an increase in call waiting times and the costs of provision. It would be wholly dependent on Ofcom's mobile coverage checker and so its usability needed to be improved. Similarly, Hyperoptic welcomed clarity on how accurate and up-to-date the information used by Ofcom's mobile coverage checker was. It also thought Ofcom should allow providers access to the aggregate underlying data utilised by the checker.

3.160 BT did not consider that the Ofcom mobile coverage checker would help providers assess whether a customer was genuinely at risk. It noted that the data utilised by the checker did not take individual circumstances into account. Therefore, the checker could return false positives and false negatives, and could not be relied upon to give an accurate result that providers could use to establish a customer's eligibility for a solution.

3.161 Sky said if Ofcom was minded to require providers to proactively check mobile coverage against a coverage checker tool, it should make clear that there only needed to be a single point of reference and that this could be either the Ofcom coverage checker or the provider's own (where they had one). It noted, however, that mobile checkers were not currently integrated within its sales process and could not be easily incorporated without material cost and resource implications, as well as a material adverse impact on the speed and flow of the sales journey. Given the Ofcom estimate that 94% of UK adults personally own or use a mobile phone, Sky considered it was reasonable and proportionate to expect customers to have an understanding of the mobile phone coverage in their home and to be

[42] See also 'A minimum of one hour' section, commences page 17.

able to advise a provider of the suitability of a protection measure that relied on a mobile phone when prompted.

3.162 Sky believed that our suggestion that providers "should ensure that on an ongoing basis they are keeping up to date with any information that becomes available which may help identify at risk customers and they are updating their processes" was too broad and did not make providers' obligations clear. Sky did not consider it was proportionate or practical for providers to be constantly monitoring external data sources for possible material updates regarding their customers, especially when their customer base was large. Therefore, Sky thought the guidance needed to be amended to be more specific. Sky considered that the obligation on providers to identify newly at risk customers should be limited to circumstances where customers, or third parties acting on their behalf, provide relevant information to their provider either proactively or when prompted. Similarly, KCOM thought providers should make an assessment based on information provided through the sales process and customer support.

3.163 [✂] highlighted the difficulty of judging vulnerability, particularly given that such an assessment was very subjective. It also argued that call operators would not be incentivised to conduct a robust assessment and offer a high volume of solutions.

3.164 Vonage thought an assessment of whether a customer was dependent on their landline or not could result in a significant administrative burden for providers. It was also concerned about the new obligations providers had under the General Data Protection Regulation (GDPR) when collecting and storing data about their customers, such as personal data regarding their health. It suggested that Ofcom should set up a centralised register regarding at risk customers that providers could access on a strict 'need to know' basis in connection with the supply of telephony services to the data subject. Similarly, Magrathea and Verizon noted that they did not deal with end-users directly and the effort to understand their needs/assess whether they needed a solution presented difficulties. ITSPA agreed that the requirement to identify at risk individuals could create a disproportionate demand on resources, both in terms of establishing who needed a solution and then maintaining that information.

3.165 BSG argued Ofcom should not be overly prescriptive and should allow providers to innovate, giving an example of a provider allowing customers to self-determine whether they would be considered vulnerable or at risk.

3.166 The Post Office thought that Ofcom and Ofgem should work together to determine the areas which experience longer power cuts and overlay with mobile coverage maps to identify customers that are most at risk and share this information with providers.

3.167 The CCP emphasised the importance of a provider's Priority Fault Repair register as a means of identifying at risk customers and believed it should be promoted to all customers. The CCP also suggested that Ofcom, Ofgem and providers should work collaboratively with those who had statutory responsibility for the care of at risk and vulnerable adults to share best practice and, where possible and relevant, information regarding those customers.

3.168 BT understood the guidance to mean that any assessment of eligibility needed to happen pre-sale. BT felt that this would add unnecessary time to the sales process and could lead to the customers disengaging from the process. It argued that providers would need to carry out at least part of the assessment after the point of sale.

Ofcom's response

3.169 Providers are free to choose the most effective way to identify those customers that experience regular prolonged power outages, however, we consider it could be appropriate for them to rely on customers self-identifying as at risk in response to a provider's enquiries. We do not consider that it would be appropriate for providers to put onerous requirements on customers to evidence a particular need to access a solution for fear of genuinely at risk customers being dissuaded from requesting protection or failing to provide the correct evidence.

3.170 The information that is available from Ofcom's mobile coverage maps and online apps cannot definitively assert whether or not a customer would be able to make an emergency call from within, or in proximity to, a building. However, it may help providers to gauge the potential extent to which customers could be vulnerable due to lack of mobile coverage. This can help forward planning in determining the volumes and costs of providing solutions either on a regional or national basis. We are exploring how to make more and better mobile coverage information available.

3.171 When assessing the individual needs of a customer, the provider will need to consider specific information that the customer may provide (for example, indicating that mobile calls are possible from the premises) or that is acquired through the provider's own steps (for example, by testing for coverage when installing the service).

3.172 We consider that providers need to develop robust processes to ensure that front line staff have the sales scripts and information they require to determine whether or not a customer is eligible for a free protection solution and to offer it accordingly. Providers should ensure they have a clear set of criteria in place that all staff understand and apply in an objective way. Similarly, providers should have a process in place for cases where a customer disagrees with the assessment that has been conducted and believes they meet the eligibility criteria and should be offered a free solution.

3.173 We maintain that providers are in the best position to think through the practicalities and decide upon the most effective way for them to work with and identify customers that are at risk, bearing in mind the specifics of their own business. We would encourage providers to discuss their approaches to identifying at risk customers and to share best practice. If they wish to develop relationships with other third parties such as Ofgem to obtain relevant data, they are free to explore this. While we have been liaising with Ofgem on aspects of this work, including the potential impact on the energy sector, it is not for Ofcom to determine which of a provider's customers require a solution. As mentioned above, if a provider wishes to rely on a sales process that allows the customer to self-identify as at risk, they may do so. They must ensure, however, that the customer fully

understands the risk of their phone not working in a power outage and the eligibility criteria for receiving the solution free of charge, and why they may be at risk or not.

3.174 We do not envisage that providers will need to collect and retain substantially more personal data regarding their customers, particularly given a number of providers will already hold such confidential data, for example, whether a customer is registered for Priority Fault Repair or uses text relay. In addition, we note that the new General Condition on 'Measures to meet the needs of vulnerable consumers and end-users with disabilities'[43] (GCC5) includes a requirement that providers establish, publish and comply with policies and procedures to ensure that the needs of vulnerable consumers are adequately considered and met. We stipulate that those policies and procedures must include "how information about the needs of Consumers who the Regulated Provider has been informed or should otherwise reasonably be aware may be vulnerable will be recorded...". Therefore, we consider that providers should already be considering how to record and retain sensitive information regarding their customers in a GDPR compliant way.

3.175 In response to Vonage's suggestion of an Ofcom centralised database, we note that Ofcom does not have a relationship with providers' customers and therefore does not hold that data. In relation to data-sharing more generally, the UK Regulators Network is publishing a report on a data-sharing pilot in October and providers may wish to ensure they are aware of any relevant developments.

3.176 As stated in our Consultation, we consider that the fact a customer is registered for Priority Fault Repair may indicate that they are reliant on their landline and therefore may be eligible for a protection solution.

3.177 Our guidance on GCA3.2(b) sets out our expectations of the measures providers should take to ensure compliance with the GC. In many respects it is not prescriptive but sets out the factors they should consider when formulating their approach. In relation to how best to carry out an eligibility assessment and whether this process should happen pre- or post-sales, we would advise providers to ensure that customers have sufficient information regarding the risks and eligibility criteria for a protection solution to enable them to make an informed decision prior to agreeing to be migrated to, or purchasing, a new VoIP service. If a customer's eligibility assessment is completed post-sale we would expect providers to seek to find a mutually agreed outcome, which might in some circumstances include allowing the consumer to exit their contract.

Engage in effective communications

Summary of responses

3.178 LFB, Shropshire Council, TalkTalk and Virgin Media commented in relation to engaging in effective communications.

[43] See the revised General Conditions of Entitlement, page 43.

3.179 No respondents disagreed with our proposition that providers need to engage in effective communications to enable customers to understand the risk of their phone not working during a power outage and the eligibility criteria applied, so customers could understand why they are, or are not, being offered a solution.

3.180 Virgin Media and TalkTalk did not believe that it was proportionate for customers to request a protection solution if they did not meet the eligibility criteria. TalkTalk noted that those customers would not be dependent on their landline and so would have other ways to access the emergency services.

3.181 LFB emphasised that not all customers would understand the risks and eligibility criteria, so providers should consider how they communicated with those who have a duty of care over others, and care homes, sheltered housing or other specialised housing. Shropshire Council thought that communications from providers intended to increase awareness needed to be made through channels such as local authorities, councils, housing and care providers.

Ofcom's response

3.182 As noted in our Consultation, some customers who are at risk may not wish to declare this to their provider for a variety of reasons. Similarly, some individuals who own a mobile, particularly those who are older and less confident using it, may not be comfortable relying on it as a means to ensure they have continued access to the emergency services during a power outage. We therefore consider that if customers not identified as at risk request a solution, providers should ensure it is available to them. Whether to charge for the solution in those circumstances is at the discretion of providers.

3.183 We agree that providers need to be mindful of how best to clearly explain the risks and eligibility criteria to their customers and those with a duty of care.

Principle 3 conclusion

3.184 Having considered the points raised we do not intend to make any changes to Principle 3. We consider that providers have a responsibility to identify at risk customers and engage in effective communications to ensure all customers understand the risk and eligibility criteria and can request the protection solution. We have clarified, however, that our guidance is not prescriptive regarding the approach that providers should take to meet their obligations and that while we have suggested a number of ways that providers can identify at risk customers, providers need to decide the most effective way for them to do so considering their own processes and the information they collect and hold about their customers.

Principle 4: Providers should have a process to ensure that customers who move to a new house or whose circumstances change in some other way are aware of the risk and protection solution available

3.185 In the Consultation we noted that after customers have migrated to, or taken up a VoIP service, they may become eligible for the solution as, for example, they move to a new house and their indoor mobile coverage changes, or due to health changes. We considered, therefore, that providers should have a process in place to ensure that these customers are aware of the risk and protection solution available to them.

3.186 We noted that we did not intend to be prescriptive about the process, but that we would expect providers to make customers aware of the risk and protection solution(s) available on an ongoing basis by, for example, ensuring that information relating to the risk and protection solution is clearly accessible and on appropriate pages on their website, is set out in appropriate correspondence with their customers and/or is included in scripts/announcements used when customers contact their provider for other matters. We made clear that those examples were indicative and that providers could adopt different approaches that had the same effect.

3.187 The Consultation also stated that providers should act appropriately when given information about changes in customers' circumstances. We noted that a customer may inform the provider through various channels that their circumstances had changed in some way and that providers should also be alert to information being provided to them about their customers by third parties such as charities and local authorities. The Consultation said if a customer was identified as having become reliant on their landline, then they should be offered an appropriate solution.

Make customers aware of the risk and protection solution(s) available on an ongoing basis

Summary of responses

3.188 In relation to the expectation that providers would make customers aware of the risk and protection solution(s) available on an ongoing basis, we received comments from BT, Gigaclear, Sky and Virgin Media.

3.189 Several respondents agreed that making customers aware of the risk of their phone not working in a power outage and the protection solutions available on an ongoing basis was important. Gigaclear and Virgin Media welcomed the fact that Ofcom was not being prescriptive regarding the means by which this should be achieved.

3.190 BT and Virgin Media argued that Ofcom's suggestion that providers include notifications on an ongoing basis in sales scripts and announcements was impractical. While acknowledging that the advice was not prescriptive, Virgin Media noted that the customer may be calling

about their Pay TV package or mobile service and so a mandatory script about their IP phone service would be out of place and potentially confusing. Further, agents had a number of other statements to read in various situations, so to include additional information could overwhelm the customer and lead to disengagement. BT felt that making the information available on providers' websites and in appropriate correspondence, as well as ensuring sales agents acted on information provided by customers, would be sufficient.

3.191 Sky thought it would be proportionate to proactively remind customers no more than once per annum by, for example, including information in appropriate correspondence. It noted that if Ofcom were to insist on more frequent proactive communication, this would place an undue burden on providers and dilute the importance of the messaging. Where a provider engaged in effective communications to ensure all customers understood the risk and eligibility criteria, it should be the responsibility of the customer to inform the provider of any change in their circumstances.

Ofcom's response

3.192 We maintain that if information is made available to customers about the risk and protection solution(s) available on an ongoing basis, then they are more likely to inform their provider if their circumstances have changed. Providers are best placed to decide the most effective way to ensure customers are reminded of that information so they are prompted to consider whether their circumstances have changed and whether they now require a protection solution. As advised previously, including accessible information on their websites, in appropriate correspondence with customers, or in scripts when a customer calls their provider regarding their voice service, are all methods that a provider may wish to adopt to achieve this.

Act appropriately when given information about changes in customers' circumstances

Summary of responses

3.193 In relation to the expectation that providers would act appropriately when given information about customers' circumstances, we received comments from LFB, Shropshire Council, Sky, TalkTalk and Virgin Media.

3.194 There were questions over how proactive providers would need to be in keeping up with changes in their customers' circumstances. Sky said it was not in regular contact with, nor did it intend to put in place information sharing agreements with, charities or local authorities. It was concerned about using information without the knowledge or consent of the customer and considered that providers should only be obliged to act on information provided directly to the provider by the customer themselves or an authorised representative on their behalf, such as a guardian. Virgin Media had similar concerns if providers were expected to act on information from third parties. While it accepted that

information from third parties could be relevant to the way a customer's account was managed, there are limits to what can be done without the consent of the customer, particularly following the introduction of the GDPR.

3.195 In contrast, Shropshire Council proposed that providers should develop links with local authorities to identify customers and meet their needs, including optimising the communication that local authorities make about telecare and assistive technology. It also thought that this guidance should include requirements for providers to notify local authorities and housing providers about the process for monitoring changes in customers' circumstances.

3.196 Sky thought that there could be some difficulty in assessing whether a change in circumstances could also lead to a change in a customer's risk profile. For example, if a customer was moving home it might not be possible to determine whether they would have mobile coverage in their new home before they had taken up residence at the premises.

3.197 TalkTalk recommended that the Principle should be amended to clarify that providers only had to act on information regarding changes in the customer's circumstances if those changes affected the customer's dependence on their landline.

3.198 LFB queried how providers were supposed to respond to changes in a customer's circumstances that were temporary in nature, such as physical injuries. It was concerned that given the change was temporary, it might not be picked up by the provider.

Ofcom's response

3.199 Providers should have processes in place that ensure they are alert to any information being provided to them about their customers that may affect whether they are reliant on their landline or not. If providers have, or wish to develop, a relationship with a third party such as a local authority or charity to help identify customers whose circumstances have changed, then they are free to do so. However, if providers are confident that they have other sufficiently reliable processes, then they are under no obligation to do so. In addition, while we consider that it may be sufficient for a provider to rely on customers taking responsibility for informing them of any relevant changes, providers will need to be confident that customers are aware of the need to, and how to, do so.

3.200 We consider that our guidance makes clear that we only expect providers to act on information they receive about a change in a customer's circumstances if that change affects their reliance on their landline. Therefore, we do not intend to revise the Principle.

3.201 Related to that, we would expect providers to consider whether a change in circumstances is of sufficient severity to merit the deployment of a solution. Where a change is likely to be short-lived and the customer can take other steps to ensure they are adequately protected then we would not anticipate that the provider would need to provide a solution, particularly given the likely delay between the customer informing the provider and the solution being provided.

Principle 4 conclusion

3.202 We do not intend to make any changes to Principle 4 and consider that providers should ensure that their customers are aware of the risk(s) and protection solutions available on an ongoing basis. Similarly, providers should act appropriately if they are given information about changes to a customer's circumstances. We have clarified, however, that the means by which providers communicate with customers and ensure they hold up-to-date information is for providers to decide upon; providers should not feel compelled to follow the examples suggested within the guidance if they believe an alternative means will work more effectively for their business and achieve the same end.

Conclusion

3.203 A copy of the final guidance which incorporates the clarifications we have made within this document can be found in Annex 1.

3.204 As this guidance relates to a General Condition that is already in place, it applies immediately.

A1. Final guidance

Scope of the guidance

A1.1 This guidance sets out our expectations of the measures providers should have in place to ensure that customers using voice services over a broadband connection are able to contact emergency organisations in the event of a power cut at their home or premises. The guidance takes the form of four Principles for providers to follow.

A1.2 The obligations in GCA3.2(b) are broad, and the Principles set out in this document are not intended to be definitive guidance on compliance with the Condition. Providers should continue to ensure they are taking all other necessary measures to maintain uninterrupted access to emergency organisations.

A1.3 In many respects this guidance is not prescriptive but sets out the factors providers should consider when formulating their approach. In light of the specific circumstances of each case, we would take account of providers' regard to the guidance when assessing whether they were meeting their obligations and each case would be considered on its merits. However, the guidance does not have binding legal effect and we may depart from it, with reasons, in individual cases. It may be subject to further review and revision from time to time.

A1.4 We would encourage providers to keep records of the process that they undertake in deciding the measures to put in place to meet their obligations under GCA3.2(b), as well as any risk assessments completed in respect of the decision(s). Such documentation is likely to assist in any investigation we carry out, particularly with regard to customers who are reliant on their landline.

A1.5 In 2007 Ofcom published guidelines entitled 'Guidelines on the application of PATS obligations to VoIP service providers' (the 2007 Guidelines[44]) which provided guidance on how Ofcom would look to investigate potential contraventions of the then GC3.[45] As there have been significant VoIP market and technical developments since 2007 (and changes to the General Condition[46]), where there is any overlap, this guidance takes precedence.

Application of the Principles

A1.6 The obligations in GCA3.2(b) apply to all providers of a Publicly Available Telephone Service (PATS) and all providers of a Public Electronic Communications Network (PECN) over which a PATS is provided. This would include any 'reseller' of a PATS service, as well as any

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[44] Ofcom, 2007. *Regulation of VoIP Services: Statement and publication of statutory notifications under section 48(1) of the Communications Act 2003 modifying General Conditions 14 and 18*, Annex 5. https://www.ofcom.org.uk/__data/assets/pdf_file/0023/55571/voipstatement.pdf.

[45] GC3 imposed substantively the same requirement as current GCA3.2.

[46] For example, Article 23 of the Universal Service Directive and the Condition are no longer restricted to provision of publicly available telephone services at fixed locations.

provider of an OTT service that meets the PATS definition.[47] Providers should take account of the Principles when considering both domestic and business customers.

A1.7 The guidance does not apply to providers of PATS, or of a PECN over which a PATS service is provided, that already benefit from network-based resilience (such as traditional copper-based voice services that are powered by the local exchange during a power outage).

A1.8 For those providers who offer only the network element or only the VoIP service to the customer, we acknowledge that there may be situations where it may not be possible and/or proportionate to take all the measures set out in the Principles.

A1.9 Ofcom would consider compliance with GCA3.2(b) on a case-by-case basis by, amongst other things, considering whether it would have been technically feasible and/or within the provider's reasonable control to take the measures set out in the Principles. This would be the same if the provider was offering only the network element or only the VoIP service to the customer.

Providers should have at least one solution that enables access to emergency organisations for a minimum of one hour in the event of a power outage in the premises

A1.10 We consider that providers should have at least one solution which would allow customers to access emergency organisations in the event of a power outage at their premises.

Providers should have at least one solution

A1.11 The obligations in GCA3 are technology neutral and therefore we do not intend to prescribe what type of solution providers should employ for the purposes of providing access to emergency organisations in the event of a power cut at the customer's premises.

A minimum of one hour

A1.12 We consider that a solution would in most cases meet Principle 1 if it offered the customer the ability to access emergency organisations on the emergency call numbers of 112 and 999 for a minimum of one hour following a power cut. Providers must also ensure equivalent access[48] to emergency organisations for those customers that use textphones/text relay. These customers cannot dial 999 or 112 directly but use access codes, typically 18000.

A1.13 However, some individual customers may require protection beyond one hour, for example if they live in households that have a history of long-duration power outages. We consider therefore that providers should take appropriate steps to identify and address the needs of customers who would benefit from additional protection.

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[47] See 'Application of the Principles' section of the guidance (pages 9 to 14) for further detail.

[48] Article 26(4) of the Universal Service Directive (as amended) requires Member States to ensure that access for disabled end-users to emergency services is equivalent to that enjoyed by other end-users.

A1.14 Providers should ensure that the protection solutions they deploy give customers sufficient talk time to allow the caller to describe the situation they are in and what help is required. Similarly, call agents need to be able to convey any life-saving information where relevant.

A1.15 In all cases, the duration of the protection being offered by the solution, including the amount of talk time, should be made clear to the customer.

Enables access

A1.16 For the solution to enable access to emergency organisations on an ongoing basis, it will need to be properly installed and maintained.

A1.17 We do not intend to provide detailed guidance on how providers should manage the provision and maintenance of their solutions. We would expect providers to have procedures and practices in place appropriate to the solution adopted that will ensure that the installation of the solution is supported effectively and it continues to work on an ongoing basis.

A1.18 Whatever the approach taken, some action may be required on the part of the customer to ensure the solution continues to function. For example, even where the provider takes full responsibility for maintenance, the customer may have to allow the provider access to the property, to replace or service the equipment. In this respect, we would expect providers to do everything within their reasonable control to ensure that the solution is properly maintained.

Emergency organisations

A1.19 At a minimum, the solution should allow the customer to contact emergency organisations using the emergency call numbers 999 and 112. Providers must also ensure equivalent access[49] to emergency organisations for those customers that use textphones/text relay.

A1.20 The customer should be made aware of the numbers that they are able to dial in the event of a power cut.

The solution should be suitable for customers' needs and should be offered free of charge to those who are at risk as they are dependent on their landline

A1.21 We consider that providers should offer and implement solutions that are appropriate for the individual needs of their customers and providers should, as a minimum, offer the solution free to those customers who are at risk as they are dependent on their landline.

[49] Article 26(4) of the Universal Service Directive (as amended) requires Member States to ensure that access for disabled end-users to emergency services is equivalent to that enjoyed by other end-users.

Suitable for customers' needs

A1.22 When considering whether the solution is suitable for the needs of the customer, we would expect providers to be giving due consideration to the customer's situation. For example, if the provider is offering a solution which relies on mobile signal to work, then they should ensure that the customer lives in premises that have mobile coverage. Similarly, providers may need to provide tailored solutions for customers that use textphones/text relay, taking into account whether they own a mobile, and whether that mobile can access text relay via the Next Generation Text app[50] at their home or premises, or if the customer has registered for emergency SMS (available on all mobile phones, not just smartphones[51]).

A1.23 Relevant considerations will depend on the type of solution that the provider is offering, and therefore we do not intend to provide detailed guidance on what would or would not be suitable for every potential situation. However, we would expect the provider to demonstrate that due consideration had been given to the appropriateness of any solution offered given the needs and circumstances of the customer.

A1.24 We would expect providers to explain to customers the pertinent features of the solutions or measures that are provided. This should draw particular attention to any inherent limitations or to responsibilities on customers necessary to ensure that the protection provided is maximised. The provider should satisfy itself that the customer understands any responsibilities and is able to fulfil them without undue difficulty.

A1.25 For example, if the provider's solution powers the broadband router itself, then the customer will require a corded phone connected to the router in order for them to be able to access the emergency organisations. We do not consider that it would be proportionate to expect providers to put further additional measures in place to ensure a cordless phone will work in the event of a power cut. However, we would expect the requirement to have a corded phone to be made clear to the customer, and for the provider to satisfy themselves that the customer can access one.[52]

Offered free of charge

A1.26 Providers should, as a minimum, offer the solution free of charge to those customers who are at risk as they are dependent on their landline.

A1.27 Some customers who are offered the solution may choose to decline it if they feel they have alternative protection, and they should be able to make this choice. In this scenario,

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[50] https://www.ngts.org.uk/.

[51] https://www.ngts.org.uk/how-to-use-ngt/contact-999-using-ngt.html.

[52] Providers should bear in mind that some consumers may not be aware that their cordless phone will not work in the event of a power cut. Our research suggests that 22% of all consumers who own a cordless phone may not be aware that this will not work in the event of a power cut and this percentage increases for those consumers living in homes with a landline but no mobile phone. See *Ofcom Phone Use in the Home Survey*, response to question 8. https://www.ofcom.org.uk/__data/assets/pdf_file/0016/114217/phone-use-home-survey.pdf.

the provider should ensure the fact that the phone will not work in the event of a power cut is clearly highlighted to the customer, and the process and decision should be carefully documented.

A1.28 It should be noted that offering the solution free of charge to those dependent on their landline is a minimum, and providers may choose to provide the solution free of charge to more/all of their customers if they consider that appropriate.

Customers dependent on their landline

A1.29 Some customers remain dependent on their landline because, for example:

- they have disability or accessibility requirements that mean they are more reliant on their landline; and/or
- they do not have an alternative method of calling emergency organisations.

A1.30 These customers would be more 'at risk' as they are reliant on their landline to contact emergency organisations in the event of a power cut. It is these customers who we consider should be offered the solution free of charge.

A1.31 We do not intend to provide a prescriptive list of the customers who would be more at risk. However, we provide some further detail and non-exhaustive examples below.

Customers whose disability and/or accessibility requirements mean they are reliant on their landline

A1.32 Although not all customers who have disability or accessibility requirements will be more reliant on their landline, some will be because:

- this is their primary means of communication; and/or
- they have more of a propensity to contact emergency organisations which increases the risk that they would rely on their landline in a power cut.

A1.33 We consider that this could include some customers who are registered (or indicate a need for) some of the measures set out in General Condition C5[53] such as:

- Priority Fault Repair Service;
- bills and contracts in alternative formats such as large print and Braille;
- third party bill management; and
- free directory enquiries.

A1.34 In addition, there may be other indicators that the customer may have disability or accessibility requirements that make them more reliant on their landline, for example:

- they have a telecare system (or similar);

[53] See the revised General Conditions of Entitlement, pages 43-47. https://www.ofcom.org.uk/__data/assets/pdf_file/0021/112692/Consolidated-General-Conditions.pdf.

- they use a textphone on a fixed line[54];
- they are signed up to network controlled calling and/or 123 or 118 barring (or similar[55]);
- they have been identified as a person within scope of the Chronically Sick and Disabled Persons Act 1970; and/or
- they identify as having a disability or accessibility requirement that would indicate they are more reliant on their landline.

Customers who do not have an alternative method of calling emergency organisations

A1.35 There will be customers who, irrespective of disability or accessibility needs, would be reliant on their landline to contact emergency organisations because they do not have an alternative method of calling emergency organisations, for example:

- they do not own a mobile; or
- they own a mobile but have limited or no mobile signal in their homes (on any network).

Providers should i) take steps to identify at risk customers and ii) engage in effective communications to ensure all customers understand the risk and eligibility criteria and can request the protection solution

A1.36 We consider that providers should take steps to identify their customers who may be reliant on their landline. In addition, providers should engage in effective communications to ensure that all of their customers:

- understand the risk of the phone not working in a power cut;
- understand the eligibility criteria for receiving the solution free of charge; and
- can request the solution even if they have not been identified as at risk.

Take steps to identify at risk customers

A1.37 We would expect providers to take all necessary steps to identify those customers who are at risk as they are dependent on their landline. We would expect this to include:

a) utilising information that is already available to them about their customers; and

b) gathering further information as appropriate.

[54] Although the relay service is now available via the NGT app for smartphones and other connected devices, text relay is still available via textphones over fixed lines.

[55] These services support customers who may have short-term memory loss, learning difficulties, dementia or an Obsessive Compulsive Disorder.

Information available

A1.38 A provider may already hold information about its customers and/or the location of the customer's premises that could help to identify which of its customers may be reliant on their landline. In the first instance, we consider providers should use this information to identify at risk customers.

A1.39 In relation to mobile signal, providers may wish to utilise information available on Ofcom's mobile checker[56] to gauge the potential extent to which customers could be vulnerable due to lack of mobile coverage. Providers are likely also to hold or have access to other relevant information in relation to mobile coverage for their customers in distinct locations e.g. areas with no, or poor, mobile coverage from any provider.

A1.40 When assessing the individual needs of a customer, the provider will need to consider specific information that the customer may provide (for example, indicating that mobile calls are possible from the premises) or that is acquired through the provider's own steps (for example, by testing for coverage when installing the service).

A1.41 We appreciate that some providers will hold more information than others, for example depending on how long they have been operating and whether they also have a mobile offering.

A1.42 Providers should ensure that on an ongoing basis they are keeping up to date with any information that becomes available which may help identify at risk customers and they are updating their processes.

Information gathered

A1.43 We think that providers are in the best position to think through the practicalities and assess the most effective way to gather any further information about their customers that they need to identify those who are at risk.

A1.44 We do not intend to provide detailed guidance as to the questions that providers should ask their customers, or the method of asking these questions. This will depend on a variety of factors such as how much information the provider already holds about the customer, the type of customer base (e.g. domestic or business customers) and the type of interaction the provider has with the customer (e.g. phone or internet sale, and whether a home visit is required).

A1.45 We consider for example that, where a provider is engaged in 1-2-1 communication with the customer as part of a sales process, the provider could ask the customer relevant questions where necessary e.g. about whether the customer owns and is comfortable using a mobile phone in their home. Similarly, if equipment needs to be installed at the customer's premise when they migrate to a VoIP service, then this interaction could be utilised to gather information as to whether the customer is reliant on their landline.

[56] Available at: https://checker.ofcom.org.uk/.

Engage in effective communications

A1.46 We consider that providers should engage in effective communications with all their customers to enable customers:

a) to understand the risk of the phone not working in a power cut and the eligibility criteria for a solution so that they are able to make an informed choice as to how to proceed; and

b) who are not reliant on their landline but want the benefit of the additional protection, to understand the purpose of the solution and request this.

Enable customers to understand the risk and eligibility criteria

A1.47 A provider should ensure that its customers (and potential customers) understand the risk of their phone not working in the event of a power cut, and that they understand why they are or are not being offered the solution.

A1.48 We would expect appropriate checks and balances to be in place so that providers can be satisfied that customers understand this.

A1.49 Providers will want to consider the ways in which this can be done to reduce the risk that consumers who would benefit from protection are not offered it. For example, providers may consider:

a) making the eligibility criteria for the solution transparent and readily available to all customers; and

b) sharing the outcome reached as to whether the customer is at risk or not, and the reasons for this, with the customer pre-sale, or ask them to confirm they do not need or want the solution when signing a contract.

A1.50 We would also expect providers to have due regard to Ofcom's guide to publicising services available to disabled people, for example when considering such things as staff training and awareness.[57] Providers should also be mindful that some customers who are at risk may not want to declare this to the provider for a variety of reasons.

Enable customers to request the solution

A1.51 Customers who request the solution, and who are at risk due to their reliance on their landline, should be offered the solution free of charge (as set out in Principle 2).

A1.52 Customers that are not identified as at risk may still request the solution as they want the additional protection this would afford them. We consider it would be appropriate for providers to make the solution available to these customers. Whether to charge for the solution in those circumstances is at the discretion of providers.

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[57] Ofcom, 2016. *A guide to publicising services available to disabled people.* https://www.ofcom.org.uk/__data/assets/pdf_file/0015/81132/guidance.pdf.

Providers should have a process to ensure that customers who move to a new house or whose circumstances change in some other way are aware of the risk and protection solution available

A1.53 After customers have migrated to or taken up a VoIP service, they may become eligible for the solution as, for example, they move to a new house and their indoor mobile coverage changes, or their health changes. We consider therefore that providers should have a process in place to ensure that these customers are aware of the risk and protection solution available to them.

A1.54 We do not intend to be prescriptive about the process a provider should follow to ensure that its customers are aware of the risk and protection solution, but we would expect providers to:

a) make customers aware of the risk and protection solution(s) available on an ongoing basis; and

b) act appropriately when given information about changes in customers' circumstances.

Make customers aware of the risk and protection solution(s) available on an ongoing basis

A1.55 We consider that if information is made available to customers about the risk and protection solution available on an ongoing basis, then they are more likely to inform the provider if their circumstances have changed.

A1.56 There are many ways that providers could make information available to customers and this will likely depend on the way in which they usually communicate with them. For example, providers may want to ensure that information relating to the risk and protection solution:

- is clearly accessible and on appropriate pages on their website;
- is set out in appropriate correspondence with their customers;
- is included in scripts/announcements used when customers contact the provider for other related matters.

A1.57 The above examples are indicative, and providers can take different approaches that have the same effect.

Act appropriately when given information about changes in customers' circumstances

A1.58 A customer (or someone acting on behalf of a customer) may inform the provider through various channels that their circumstances have changed in some way. Providers should also be alert to any information being provided to them about their customers by, for example, third parties such as charities and local authorities if they have an established relationship or wish to develop one.

A1.59 For changes in circumstances that may affect whether the customer is reliant on their landline, providers should take appropriate action to ensure that the customer is aware of the risk of the phone not working in a power cut and that there is a protection solution available.

A1.60 The types of changes in circumstances that providers should be particularly alert to are where they are informed that:

- the customer is moving to a new house; or
- the customer now requires Priority Fault Repair or any of the other measures set out in General Condition C5.

A1.61 Providers should have a process in place for recording this information which will ensure that appropriate action is taken to understand whether these customers may now require a protection solution. If the customer is identified as having become reliant on their landline, then they should be offered the appropriate solution.