



Department
of Energy &
Climate Change

Severe Weather - Christmas 2013

A review of Electricity Distribution Industry
Performance

March 2014

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Contents

Executive summary	5
The Weather Now and in the Future	8
Overview of Christmas Week	8
What is the likelihood of similar periods of severe weather occurring in the future?	10
Christmas Forecasts and Escalation.....	12
Weather Forecasts and Network Operator Escalation Triggers	12
Forecasting Actions.....	12
Communications with Customers.....	13
Telephony Platforms.....	13
Interactive website information	15
Social Media Engagement.....	15
Access to Customer Details	16
Estimated Time for Restoration	17
Customer Awareness of the Network Operators	18
Communications Actions	19
National Power Outage Number	20
A National Single Number	20
National Number Actions.....	21
Resource Availability and Management.....	22
Network Operator deployment.....	22
Overhead Linesmen resource.....	22
Contact Centre Resource	23
Industry Mutual Aid Protocol.....	24
Ancillary Resources	24
Strategic Spares	25
Resourcing Actions	25
Media Engagement.....	26
Local Media Engagement.....	26
National Media Engagement	26
Media Actions.....	28

Welfare Provision	29
Welfare Provision	29
Welfare Actions	29
Goodwill Payments	30
Thresholds for Payment	30
Process	30
Goodwill Payment Actions	31
Vegetation Management	32
Vegetation Management Risks	32
Multi-Agency Engagement	33
Multi-Agency Engagement Actions	33
Action Implementation Plan	34
High-level Implementation Plan	34
Appendix One	38



Engineers removing fallen trees from power lines in difficult conditions

Executive summary

Following the disruptions to power supplies experienced by almost 1 million households between 22 and 28 December 2013, as a result of two severe winter storms, the Secretary of State for Energy and Climate Change, Edward Davey commissioned a review of the Distribution Network Operator response. The response from Network Operators was strong, 95.3% of disrupted customers were restored within 24 hours, though there are lessons to be learnt to improve future responses, and minimise customers inconvenience as much as possible.

The storms over Christmas, taken together, were the third major disruptive event in nine weeks from late October; the St Jude storm in October and the coastal flooding event on the East Coast in early December. As a result of interceding unsettled weather, most Network Operators had been in a state of emergency response for this entire period, using well established procedures and processes that are in place to enable an effective response to disruptions that are likely to be experienced during the winter months.

As a consequence of these plans, 95.3% or about 876,000 of these affected properties had their power supply restored within 24 hours, and 1.7% or about 16,000 customers were off supply for greater than 48 hours. In the context of the conditions and difficulties experienced this is considered to be a strong response by industry, with the tireless efforts of the staff of Network Operators, who worked throughout the Christmas period, to be commended. Finally, recognising the impact on customers during the recovery efforts, Network Operators, often working with agencies such as the British Red Cross, provided a range of welfare services including hot food and drink and hotel accommodation, to minimise the impact of the disruption. Indeed, Network Operators provided approximately 27,000 hot meals to customers who were without power during the Christmas period.

More recently, the subsequent performance and response to the storms and flooding experienced in February confirms this view. Despite this, DECC's Review highlights areas for improvement to ensure that, in future responses, customers experience as little inconvenience as possible.

All six Network Operators, the Energy Networks Association, and the Energy Emergencies Executive Committee have been positive in their engagement with this review, with all parties being open to identifying lessons that can improve the response to similar events occurring in the future. Though this review has established 24 actions for industry and two for DECC, to take forward, there are two clear priority actions identified:

1. Ensure that Network Operators have access to better customer contact details, allowing them to proactively contact those who are disrupted to provide accurate information.
2. The establishment of a single national number for customers to use to contact their Network Operator in the event of a disruption.

The actions to be taken forward to improve the response cover:

- Forecasting and escalation
 - o Network Operators will hold a workshop to share their approach and discuss best practice on weather forecasting and escalation triggers

- Communications with customers
 - o Network Operators to ensure their telephony platform does not force disconnect callers
 - o Network Operators to hold a workshop to consider the development of a “reasonable worst case scenario” for call volumes
 - o Network Operators actively review and stress test their telephony systems to ensure adequate call receiving capacity / transmission to manage extreme events
 - o Electricity Northwest to review its telephony platform capacity and processes to ensure that it is meeting customer expectations in the context of the reasonable worst case scenario for call volumes
 - o UK Power Networks should ensure appropriate capacity upgrades are identified and implemented
 - o Network Operators will hold a workshop to share practices to social media engagement and Network Operators will each develop a social media engagement and resource strategy and stress test this for use during disruptive events to ensure effective utilisation of available tools / systems
 - o Northern Powergrid shall submit a data flow change request to Gemserv on behalf of the other Network Operators to initiate the release of customer contact details for use during disruptive events. Network Operators shall ensure that, in time for winter in October 2014, they have, where available, obtained the telephone contact details of customers from energy suppliers.
 - o Network Operators will review and test their processes and systems to ensure that they are capable of allowing field staff to efficiently and effectively provide timely and accurate updates to network customer contact centres
 - o Network Operators will develop and implement a common framework that clarifies standards expected around the identification and provision of a restoration time to customers and its subsequent proactive update in the manner agreed with the customer
 - o Network Operators should take steps to identify the levels of recognition amongst customers, and address any gaps using appropriate communications strategies, including making sure that, whilst a national power outage number is developed, each Network Operator’s customers are aware of the correct phone number to call in the event of disruption to power supplies
- A single national number for use during power disruptions
 - o Network Operators (led by the Energy Networks Association) will develop a national three digit number for customers to call during a power disruption
 - o ENA to produce implementation plan for single national number, agreed with Network Operators and by DECC
- Resource management
 - o Network Operators will hold a workshop to share their resource and contractor management strategies
 - o Network Operators will review their contracting arrangements and their dependence on them to ensure the rapid availability of adequate resources to deliver resilience particularly over extended holiday periods

- Network Operators will review their contact centre resourcing arrangements to ensure adequate and trained capability is available under the reasonable worst case call scenario
- UK Power Networks will review the resourcing strategy of its contact centre to ensure it has sufficient flexibility to upscale during a disruptive event
- The NEWSAC Mutual Aid protocol should be reviewed and if appropriate, updated to ensure it is adequately proactive, and criteria around strategic prioritization are clear
- Media engagement
 - Energy Networks Association to co-ordinate a campaign to raise awareness of the role of the network operator, complementing individual awareness raising efforts by each Network Operator
 - Energy Networks Association to develop a scalable, proactive national media strategy for use during disruptive events with a national impact
 - Department of Energy and Climate Change to produce a clear scope and requirements for reporting during disruptive events, setting out roles of organisations, and information required
- Welfare provision
 - Network Operators will hold a workshop to share strategy and approach to welfare provision and deployment learning and identify best practice
 - Network Operators will review arrangements with the British Red Cross and / or similar providers ensuring where appropriate contract exist
 - Network Operators should consider establishing framework agreements with local service providers to supplement existing welfare arrangements
- Goodwill payments
 - Network Operators will review their internal processes for notifying eligible customers of goodwill payments, and ensuring these are paid efficiently
- Multi-Agency engagement
 - Department of Energy and Climate Change will pass feedback on engagement challenges into the appropriate body of central Government

DECC will be seeking assurance, via the Energy Emergencies Executive Committee that the actions laid out above are being delivered effectively, and in a timely manner. This review has reinforced the value of this forum, both in terms of facilitating a coordinated response to resilience in the sector, and in enabling the sharing of lessons and experiences to improve the resilience and response to disruptive events.

Ofgem has conducted its own regulatory review of the response to the Christmas storms in relation to the performance standards set down, this is independent of the DECC review. The findings set out below do not presuppose any conclusions reached by Ofgem in their review.

In addition to valuable lessons that have been identified a number of significant strengths have been drawn out in the response by operators. It is clear that at both the corporate level, as well as with the individual members of staff, there is a strong sense of public duty, demonstrated by the many hundreds of staff who cancelled their own holidays, and time with their families to support the response, a number of whom were experiencing disruptions themselves. Without this ethic, restoration would certainly have taken significantly longer and DECC is grateful to those who worked over the Christmas period to support the response of Network Operators.

The Weather Now and in the Future

The weather: December 2013

Across the two storms 23/24 and 26/27 December almost 1 million customers experienced a power disruption greater than 3 minutes; 95.3% or about 876,000 of those properties had their power supply restored within 24 hours, and only 1.7% or about 16,000 customers were off supply for greater than 48 hours. Since Christmas a series of successive storms have hit the country, and Network Operators have responded well to both the damage caused by extreme winds and also to ensure that flooding has had no impact on the electricity infrastructure. Operators have all remarked on the extreme nature of the weather experienced in the months leading up to and during Christmas 2013. All considered the conditions to be *exceptional* in their experience. During Christmas week the extended duration of the successive wave of storms coupled with extremely high ground water particularly in the south of the country gave rise to conditions which both strained the distribution networks and made restoration difficult.

Unusually for such an event, the period over December was forecast to have a national impact, which restricted the ability for operators to make effective use of mutual aid protocols or relocate resource to one geographic location for a concentrated response.

A significant hindrance to a speedy recovery was the blocking of local roads and access points with flood water and fallen trees. Network Operators have described this as some of the most challenging working conditions they have ever faced due to saturated ground conditions and on-going prevalence of high winds. The recent weather events have been unprecedented in their frequency and severity of impact on the energy sector. With this context of the conditions and difficulties experienced the industry response is considered to have been strong, with the tireless efforts of the staff of Network Operators, who worked throughout the Christmas period, to be commended. More recently, the subsequent performance and response to the storms and flooding experienced in February confirms this view.

Overview of Christmas Week

- 1.1. Two successive storm fronts hit the country on the 23/24 December and then again on 26/27 December. The most severe weather, a combination of wind and flooding, was experienced on 23/24 December impacting particularly on Western Power Distribution, Scottish and Southern Energy Power Distribution (in Southern England) and UK Power Networks, with all networks experiencing an impact in the second storm event.
- 1.2. Throughout December, January and February 2013/14, the UK has been affected by an exceptional run of severe winter storms. The Met Office has confirmed that the two month period covering December and January for the South East and central Southern England has been the wettest since 1910. Widespread high winds have also been recorded across the country, and December 2013 has been confirmed as one of the windiest calendar months for the UK since January 1993.¹

¹ http://www.metoffice.gov.uk/media/pdf/1/2/Recent_Storms_Briefing_Final_SLR_20140211.pdf

- 1.3. Undoubtedly restoration efforts were hampered by difficult access conditions, fallen trees, flooded roads and fields. In addition the on-going prevalence of high winds and in some areas lightning activity also played their part as it is unsafe to work at height to undertake repairs whilst such conditions are prevalent.
- 1.4. As part of its regulatory duties Ofgem are conducting a detailed review of specific Distribution Network Operator performance and this report will therefore not comment on these aspects. However, notwithstanding the weather conditions, fault complexity, access difficulties and Network Operator staff efforts, it remains a fact that approximately 40,000 customers of those disconnected on 23 and 24 December remained off supply on Christmas Day, and of these approximately 16,000 customers remained off of power for greater than 48 hours.
- 1.5. Over 9,500 UK Power Networks customers were off supply for greater than 48 hours, with the longest off supply for 6.4 days, for Scottish and Southern Energy Power Distribution (in Southern England) the numbers were over 5,900 off supply for greater than 48 hours, with the longest off for 5.3 days.
- 1.6. In many cases the faults experienced across the whole period were complex with many lines experiencing multiple points of damage some of which did not become apparent until others had been repaired.
- 1.7. Flooded properties were disconnected from power for safety reasons, with restoration only done, once a property was certified as safe, for example the UK Power Networks system in the village of Yalding in Kent had to be isolated for public safety concerns due to flooding.
- 1.8. The table below provides a combined overview, across the period of 23-28 December, for each of the Network Operator licence areas. For each area it shows:
 - **The number of households off supply for a short duration of less than 3 minutes.** This is achieved by sophisticated automation built into equipment in the field and also the rapid remote switching by engineers by telecontrol from Network Operator control centres. Overall it can be seen that about **1.4 million** households were impacted but for very short duration which is a testament to the investment agreed with Ofgem and delivered on the networks to ensure network resilience.
 - **The number of households off supply for greater than 3 minutes.** These are restored through a combination of; remote switching by telecontrol, engineers being directed to reconfigure the local network and by operating switches in the field which cannot be operated remotely by telecommand; and then for the remainder by physical repair of the damaged equipment.
 - **The total number of faults experienced.** To contextualise these numbers it is important to note that typically a Network Operator may experience 60-70 faults on any given day resulting in the order of 6-6,500 households being off supply. It is noted that 54% of the total faults experienced occurred across 4 licence areas.
 - **The percentage households restored with 1 hour, 1 day and 2 days.**

Network Operator	Network Operator Licence Area	Customers interrupted by short interruptions (<3 mins)	Customers off >3 mins	Faults repaired	Customers Restored Within		
					12 Hours	1 Day	2 Days
ENW	ENWL	50,148	46,879	297	93.2%	97.9%	100.0%
NPG	NPGN	28,838	48,937	242	99.6%	100.0%	100.0%
	NPGY	26,721	19,403	245	99.7%	100.0%	100.0%
WPD	WMID	40,772	34,962	380	99.7%	100.0%	100.0%
	EMID	24,719	18,248	296	100.0%	100.0%	100.0%
	SWALES	111,106	23,207	284	100.0%	100.0%	100.0%
	SWEST	140,536	57,695	756	98.2%	100.0%	100.0%
UKPN	LPN	3,926	14,070	212	99.2%	100.0%	100.0%
	SPN	140,656	230,859	1,066	77.4%	89.3%	95.8%
	EPN	168,402	88,002	811	97.7%	99.6%	100.0%
SPEN	SPD	26,651	24,829	411	94.8%	97.9%	99.9%
	SPMW	110,980	48,087	502	87.9%	96.9%	99.8%
SSEPD	SSEH	105,608	35,437	315	98.7%	100.0%	100.0%
	SSES	406,772	228,474	1,091	69.8%	93.2%	97.4%
	GB	1,385,835	919,089	6,908	85.2%	95.3%	98.3%

Table 1: Customer disruptions 23-28 December 2013 by Distribution Network Operator License Area

What is the likelihood of similar periods of severe weather occurring in the future?

- 2.1. The extreme weather conditions have continued beyond September, and well into February at the time of writing this report. Scientists at the Department of Energy and Climate Change, working with the Met Office have considered the implications of future weather patterns, and in particular whether the prolonged and repeated nature of the recent stormy weather is likely to be a more frequent occurrence. This in turn will have an impact on the resilience of the energy network, and may require a changed approach in terms of operational practices and regulatory management.
- 2.2. Severe storms have always affected the UK and will continue to do so even without further climate change. The Government's Climate Change Risk Assessment (CCRA) lists the extremely strong winds associated with storms as a primary cause of damage to power distribution networks, along with lightning strikes, snow and ice, and flooding from intense rainfall. An important question is whether man-made climate change is affecting storm characteristics - how might storm frequency, intensity and position change in coming decades?
- 2.3. The frequency of storms hitting the UK is largely determined by the position of the jet stream, a ribbon of strong wind at high altitude that moves around the Northern Hemisphere, steering weather systems across the Atlantic. Typically during the winter the jet stream steers storms towards the UK bringing unsettled weather, as it has done this winter. In addition, since mid-December, 2013 the jet stream has been stronger than

normal and positioned further south, leading to the prolonged series of damaging Atlantic storms, record numbers of high wind events and the wettest winter since at least 1910.

- 2.4. Whilst we cannot attribute the behaviour of the jet stream and this winter's storms directly to climate change, for certain extreme events we can assess how climate change has altered the likelihood of that event occurring. For example, 20th century global greenhouse gas emissions roughly doubled the risk of an event similar in nature to the UK floods which occurred in autumn 2000 happening now compared with the risk a century ago. The complex and challenging process of assessing the contribution from climate change to the winter storms of 2013/14 has already begun at the Met Office Hadley Centre and elsewhere.
- 2.5. Storm characteristics exhibit large natural variations year-to-year and over decades, so clear signs of change in storm frequency or intensity and thus severe wind events are expected to take a long time to emerge. However, some research has started to show evidence of an increase in the intensity of the strongest Atlantic storms in winter over the last century.
- 2.6. The chance of a similar prolonged period of stormy weather occurring in the future depends on how the behaviour of the jet stream is affected by climate change, which is uncertain. The current national climate change projections² (UKCP09) suggest little change in the *number* of UK winter storms out to the 2080s and no clear signals for either an increase or decrease in long-term average wind speed. Similarly, the Working Group I science report of the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report³ (AR5) emphasised that, "substantial uncertainty and thus low confidence remains in projecting changes in Northern Hemisphere storm tracks, especially for the North Atlantic basin." However, the state of the art in climate modelling has now advanced to the point that the very newest models available will be able to more accurately capture storm behaviour and related rainfall.
- 2.7. More certain is a future increase in heavy rainfall both from storms and other weather events. IPCC AR5 states that as the planet warms we will see an increase in moisture in the atmosphere, leading to an increase of intense rainfall events – an effect already apparent in the observational record. Similarly, the CCRA notes that we currently expect to see a shift towards generally wetter winters with a greater proportion of precipitation falling as heavy events.



Power lines uprooted by extreme wind speeds

² <http://ukclimateprojections.metoffice.gov.uk/>

³ <https://www.ipcc.ch/report/ar5/wg1/>

Christmas Forecasts and Escalation

Accurate Weather Forecasting

Accurate and timely weather forecasting is critical to effective network and emergency response planning and delivery for Network Operators. All Network Operators receive daily forecasts from a number of credible providers, receiving broadly the same information, and have similar escalation triggers.

Weather Forecasts and Network Operator Escalation Triggers

- 1.1. Whilst it is clear that all Network Operators have robust, contracted weather forecasts, each assesses and deploys these differently for severe weather preparations.
- 1.2. Weather forecasting is not a precise science and, whilst Network Operators indicated that these are generally adequate to enable storm preparations in advance, it is noted that several stated that the actual levels of wind speeds experienced significantly varied from the forecast. It is evident that as a consequence of the weather forecasting information received there was a variation at which point escalation commenced within individual Network Operators. Most Network Operators commenced internal escalation between 18 and 20 December. However, this was not universal and it is noted that UK Power Networks held a Strategic Team conference call on 22 December when their understanding of the weather forecast firmed up. Had all escalated between 18-20 December it is probable that such action would have yielded additional resources, primarily contractor and some staff.
- 1.3. Given the onset of the Christmas holiday period, this difference undoubtedly had an impact on resources, particularly the availability of contractor resource, and the triggering of mutual aid calls (although it is recognised that this is unlikely to have yielded significant resource around Christmas Eve due to the national impact of the storm).

Action: Network Operators will hold a workshop to share their approaches and discuss best practice on weather forecasting / escalation triggers

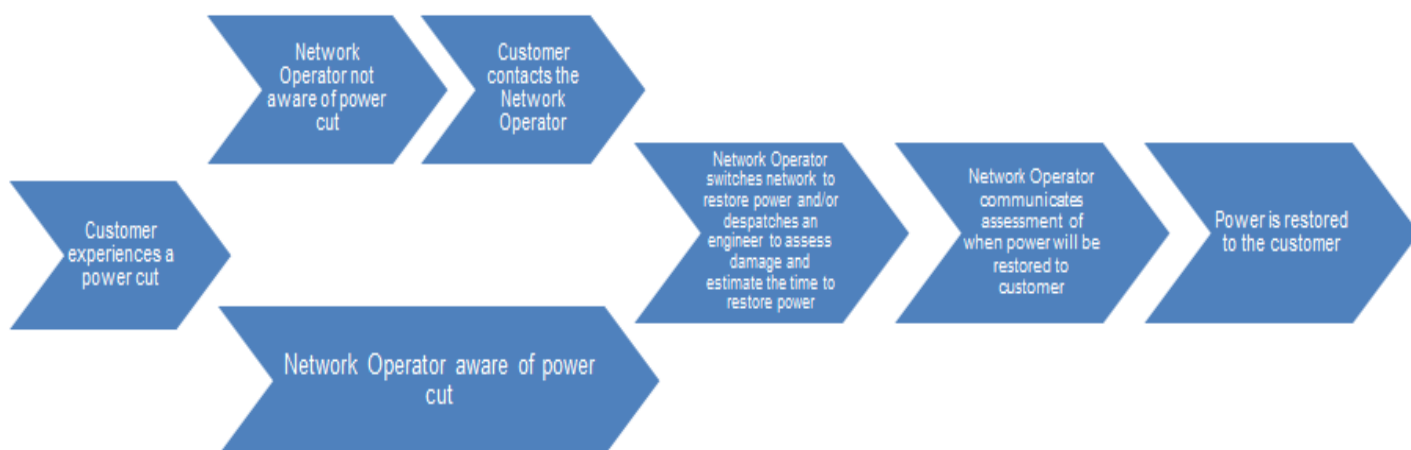
Forecasting Actions

Action Reference	Action
F1	Network Operators will hold a workshop to share their approaches and discuss best practice on weather forecasting and escalation triggers

Communications with Customers

The Importance of Customer Communication

One of the most important aspects of a Network Operator's response to a disruptive incident is communication with its customers who have been affected. Key to this is being able to provide timely accurate information on the Estimated Time for Restoration. There are a number of challenges to overcome in order to ensure that this is done effectively. The disruptions which took place over the Christmas period highlighted a number of important elements that are necessary to ensure that Network Operators provide the information that customers require, at the time they want, using an appropriate range of media, whilst, taking account of the constraints that exist during disruptions caused by severe weather. There is clearly a balance to be struck between providing information to customers quickly and ensuring that information is accurate, and that customers' expectations are managed. Though Network Operators are fully aware of the importance of communication with customers, it is clear that there are improvements that can be made.



The process for restoration and customer contact during a power disruption

Telephony Platforms

- 1.1. The use of automated messages to keep customers informed with accurate, consistent and timely messaging has an important role in any efficient response. Reliable and informative recorded messages are helpful in providing information to customers and can help reduce queuing volumes and satisfy a large number of the calls made to the Network Operator. Nonetheless, it is necessary for Network Operators to allow those that want to speak to an agent to do so, without having to wait an inordinate length of time. Some customers experienced “forced disconnection” during the Christmas storms, that is, they were automatically disconnected from their call, because the Network Operator's telephony capacity was not sufficient.

Action: Network Operators to ensure their telephony platform does not force disconnect callers

- 1.2. Since 2002 Network Operators have invested in telephony platforms and as a consequence the capacity to ensure that customers can speak to a call handler and / or

messaging system has significantly improved. In many cases Network Operators' systems were heavily tested during the Christmas period, with many experiencing volumes of calls significantly higher than expected. The below table illustrates the call handling times between each Network Operator licence area; this clearly demonstrates the varied performance between Network Operators. However, it is important to note the difference in severity of network damage experienced by each operator. It is noted that, particularly where call waiting times were prolonged, it is likely, that the figures include repeat callers who hung up before they got the information they required.

Network Operator	Network Operator Licence Area	Total Calls Taken	Average Time to answer by an agent (s)	Max number of calls in one day	Total Abandoned Calls
ENW	ENWL	10,499	3.0	5,537	77
NPG	NPGN	4,920	19	1475	164
	NPGY	3,063	10	776	70
WPD	WMID	3,471	2.2	1,033	21
	EMID	4,558	1.2	1,256	33
	SWALES	3,638	1.4	1,051	27
	SWEST	12,884	1.5	7,163	84
UKPN	LPN	9,326	247.8	4,724	2,679
	SPN	128,174	259.0	81,234	29,685
	EPN	31,015	257.4	17,958	8,222
SPEN	SPD	12,283	73.5	4,969	906
	SPMW	12,613	68.1	7,096	1,274
SSEPD	SSEH	10,580	37.8	5,298	2,157
	SSES	184,931	435.8	111,373	31,201

Table 2: Customer call volumes and response times 23-28 December by Distribution Network Operator Licence Area

- 1.3. The experience of dealing with the disruption over the Christmas period has shown that there is a need for Network Operators to have telephony systems that have the capacity to deal with a high volume of calls. Not all operators' telephony experienced the same levels of incoming calls, but there are collective lessons to be learnt by all from the experience. It is important that operators have stress tested their telephony platforms to ensure they are able to manage anticipated high call volumes during a reasonable worst case scenario disruptive event.

Action: Network Operators to hold a workshop to consider the development of a “reasonable worst case scenario” for call volumes

Action: Network Operators actively review and stress test their telephony systems to ensure adequate call receiving capacity / transmission to manage extreme events

- 1.4. An essential and related aspect of this is, of course, ensuring that there is sufficient resource available to answer calls, including during times of significantly heightened volumes. This is vital in ensuring the availability of the option of speaking to an agent to those who want to do so, and ensuring that the waiting time to do this is not onerous. This is discussed in more detail below (page 23).
- 1.5. During the review it has been established that Electricity Northwest is the only Network Operator with a telephony system where a customer cannot enter a queue to speak to a call agent after listening to a recorded message. After listening to a recorded message, customers can speak to an agent only if one is available (they are not able to wait for one to become available), leave a message or hang up. This means that some customers may need to redial if they want to speak to a call agent. Whilst there is no evidence from the review that customers are dissatisfied with Electricity Northwest’s telephony platform, it is suggested that there is a reasonable expectation for a customer to be able to speak to an agent if they so choose.

Action: Electricity Northwest to review its telephony platform capacity and processes to ensure that it is meeting customer expectations in the context of the reasonable worst case scenario for call volumes.

- 1.6. During the Christmas storms it is noted that whilst UK Power Network’s telephony system did continue to provide automated messaging, a significant number of customers who chose to wait to speak to a call agent experienced long queuing times due to capacity limitations.

Action: UK Power Networks should ensure appropriate capacity upgrades are identified and implemented. – **This action was completed in advance of publication**

Interactive website information

- 2.1. As an alternative to providing information by telephone, the use of websites by Network Operators can be effective in providing up to date information on power outages, and can help relieve the burden on telephony systems. Websites can, of course, be used to provide general information but it is particularly useful to have an interactive feature which allows customers to find out information about their particular property in response to entering postcode information. While this is a useful facility, the same issues applying to telephony also apply to interactive website functions; they need to be tested to ensure that there is capacity to cope with a high volume of enquiries and still provide meaningful information to customers.

Social Media Engagement

- 3.1. The use of social media platforms is an increasingly important part of a modern communications strategy; managed carefully it can be hugely advantageous; however, it is by no means a risk free tool.
- 3.2. All Network Operators have an online social media presence; however these are in differing stages of maturity. Platforms such as Twitter can be used to provide real time updates to customers about the situation, as well as to respond to specific customer

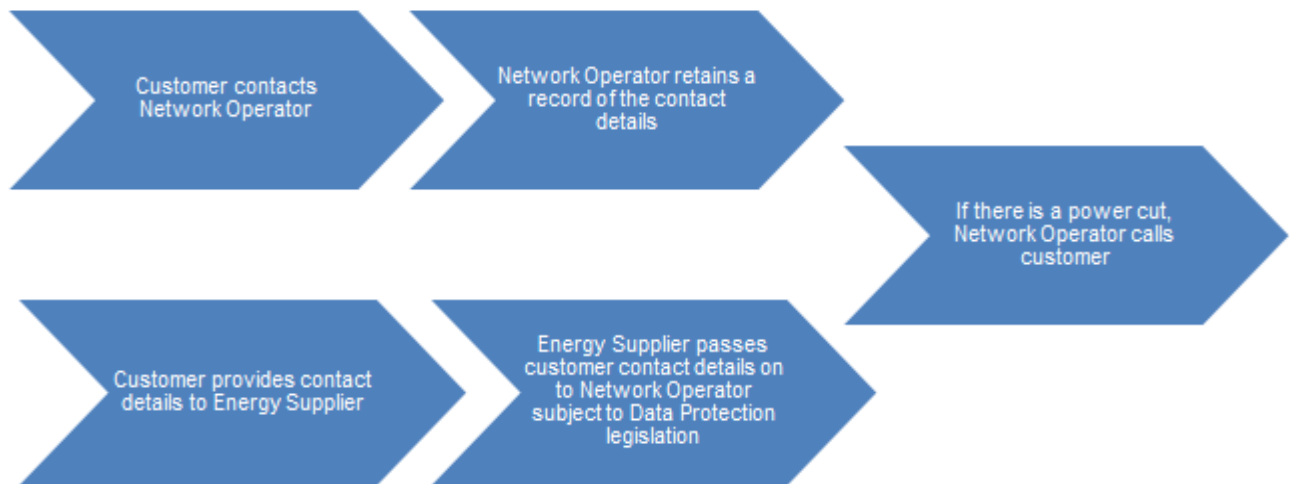
questions or concerns. Reviewing the communications strategies of the operators, and their practice during Christmas it is clear that Network Operators take different approaches to their engagement with social media platforms such as Twitter and Facebook. Some, such as Electricity Northwest, Northern Powergrid, Scottish and Southern Energy Power Distribution and UK Power Networks, use Twitter to respond directly to customers contacting them, providing updates to enquiries or directing customers to specific webpages or contact numbers for further information. Northern Powergrid, Scottish and Southern Energy Power Distribution and UK Power Networks operate a 24/7 capability, whilst Electricity Northwest operates from 7am to 11pm during incidents, with dedicated staff to manage the communication. Northern Powergrid, Scottish Power Energy Networks and Western Power Distribution use Twitter and Facebook as a means of issuing proactive updates to customers. Scottish Power Energy Networks also has arrangements with other stakeholders including two Scottish councils that automatically re-Tweet their updates, ensuring a wider customer basis has access.

- 3.3. All of these approaches have potential benefits to making information more accessible to customers; they offer an alternative means of reaching certain customers, can allow the dissemination of messages to a potentially large numbers of customers and have the potential to relieve the burden on telephony systems by providing real time information on disruptions or by responding directly to customer queries. However, the use of social media can also place resource demands on Network Operators and it is important that plans are in place to meet these demands to ensure that, as an incident develops, there is sufficient capacity to maintain an appropriate level of social media activity, and that the resource is not overwhelmed.
- 3.4. During a disruptive event when a significant volume of customer communications occurs, whether by telephone or other social media, it is important that Network Operators have a social media engagement strategy that prioritises the available resources on the most appropriate channels to allow effective engagement and communication during the event.

Action: Network Operators will hold a workshop to share practices to social media engagement and Network Operators will each develop a social media engagement and resource strategy and stress test this for use during disruptive events to ensure effective utilisation of available tools / systems

Access to Customer Details

- 4.1. The primary relationship is between the customer and their supplier; it is rare that customers will need to speak direct with their Network Operator, or that the Network Operator will need to speak with the customer. The most likely occasion is during a disruptive event. Not only do customers need to know who and how to contact the Network Operator, but in order to facilitate proactive updates, the Network Operator needs to be able to contact the customer directly. Though Network Operators have access to address information for their network, this does not include the name of the customer / bill payer, or most importantly their contact telephone numbers. Following Christmas, and during this review, Network Operators have highlighted a key challenge to being able to proactively engage with customers is the lack of access to accurate telephone contact details. Details are collected as shown below.



Process for Network Operators obtain telephone contact details of customers

- 4.2. All Network Operators capture contact numbers and details when customers phone them, so there is a baseline of contact information for customers; however this by no means provides a complete data set. Additionally some details may become available when a customer changes their supplier.
- 4.3. It is understood that Network Operators should be able to resolve this accessibility issue through a “data flow change request” to Gemserv, an industry body made up of (amongst others) energy suppliers, to ensure that the telephone contact details are included in the data shared between suppliers and Network Operators. Northern Powergrid has agreed to submit a data flow change request to Gemserv on behalf of all Network Operators to initiate the release of customer contact details for use during disruptive events. DECC welcomes this action, and will monitor its progress, providing support or sponsorship, if required, to ensure its delivery. Once the data has been provided by suppliers to the Network Operators in advance of winter in October 2014, each Network Operator will then be responsible for ensuring that they maintain and update their customer contact details on an on-going basis.

Action: Northern Powergrid shall submit a data flow change request to Gemserv on behalf of the other Network Operators to initiate the release of customer contact details for use during disruptive events. Network Operators shall ensure that, in time for winter in October 2014, they have, where available, obtained the telephone contact details of customers from energy suppliers. This will allow Network Operators to pro-actively call customers who they are aware are without power

- 4.4. It is noted that the introduction, in the future, of Smart Meters, should allow for greater granularity of details about customers impacted by a disruption, to be seen by Network Operators, and could also facilitate access to customer contact details for operators, making proactive communication considerably easier.

Estimated Time for Restoration

- 5.1. The basis of an effective approach to communicating with customers is ensuring an accurate supply of information from field staff, to the contact centre staff that is in direct communication with customers. Ensuring that information is communicated accurately and in a timely manner through this chain is essential.
- 5.2. It is acknowledged that the main challenge in providing an accurate Estimated Time for Restoration (ETR) is the identification of the number and nature of network faults quickly.

In addition to the high volume of faults experienced, one of the problems faced during the disruption over the Christmas period was gaining access to the faults because of the severe weather, including flooding of, and felled trees blocking, access roads. Some overhead lines experienced multiple faults at different geographic locations. Furthermore, the complexity of the faults in some cases caused difficulty in providing accurate estimates, with high voltage faults disguising the number of low voltage faults that existed.

- 5.3. There is clearly a balance to be struck between providing information to customers quickly and ensuring that information is accurate, and that customers' expectations are managed effectively. It is essential that Network Operators have robust management systems to allow field staff to provide accurate estimates to customer contact centres, and allow contact centres to access this information easily to provide customer-specific information.

Action: Network Operators will review and test their processes and systems to ensure that they are capable of allowing field staff to efficiently and effectively provide timely and accurate updates to network customer contact centres

Action: Network Operators will develop and implement a common framework that clarifies standards expected around the identification and provision of a restoration time to customers and its subsequent proactive update in the manner agreed with the customer (whether by telephone, text or other means).

Customer Awareness of the Network Operators

- 6.1. As noted above an important aspect of the customer / network operator interface is ensuring that both parties have sufficient information; customers need to know who to contact in the event of disruption to the distribution network – many customers are not aware of who their Network Operator is, and / or how to contact them if they need to do so.
- 6.2. Work is underway to develop a single national number, which would allow customers to be connected directly to their Network Operator, from wherever they are located in the country. More detail can be found below (page 20). However, whilst this solution is implemented it is important that Network Operators take steps to raise awareness amongst customers and help to ensure that customers have appropriate contact details (including phone number, website address, and social media contact details) that they can use in the event of a disruptive event. A number of the Network Operators are already engaged in such work and run annual campaigns using different media in order to raise awareness amongst the communities they serve. Scottish Power Energy Networks, for example, have established an awareness campaign, including bill board and bus posters with key contact details, and Western Power Distribution undertake an annual leafleting campaign. Scottish and Southern Energy Power Distribution have trialled community posters for communicating key details and contact arrangements with those remoter communities without power – posters being displayed in public places such as village halls.

Action: Network Operators should take steps to identify the levels of recognition amongst customers, and address any gaps using appropriate communications strategies, including making sure that, whilst a national power outage number is developed, each Network Operator's customers are aware of the correct phone number to call in the event of disruption to power supplies. These should dovetail into the media engagement recommendations below.

Communications Actions

Action Reference	Action
C1	Network Operators to ensure their telephony platform does not force disconnect callers
C2	Network Operators to hold a workshop to consider the development of a “reasonable worst case scenario” for call volumes
C3	Network Operators actively review and stress test their telephony systems to ensure adequate call receiving capacity / transmission to manage extreme events
C4	Electricity Northwest to review its telephony platform capacity and processes to ensure that it is meeting customer expectations in the context of the reasonable worst case scenario for call volumes
C5	UK Power Networks should identify appropriate capacity upgrades are identified and implemented
C6	Network Operators will hold a workshop to share practices to social media engagement and Network Operators will each develop a social media engagement and resource strategy and stress test this for use during disruptive events to ensure effective utilisation of available tools / systems
C7	Northern Powergrid shall submit a data flow change request to Gemserv on behalf of the other Network Operators to initiate the release of customer contact details for use during disruptive events. Network Operators shall ensure that, in time for winter in October 2014, they have, where available, obtained the telephone contact details of customers from energy suppliers. This will allow Network Operators to pro-actively call customers who they are aware are without power.
C8	Network Operators will review and test their processes and systems to ensure that they are capable of allowing field staff to efficiently and effectively provide timely and accurate updates to network customer contact centres
C9	Network Operators will develop and implement a common framework that clarifies standards expected around the identification and provision of a restoration time to customers and its subsequent proactive update in the manner agreed with the customer
C10	Network Operators should take steps to identify the levels of recognition amongst customers, and address any gaps using appropriate communications strategies, including making sure that, whilst a national power outage number is developed, each Network Operator’s customers are aware of the correct phone number to call in the event of disruption to power supplies.

National Power Outage Number

Single National Number

During the Christmas storms it was evident that there was significant confusion for customers regarding who they should contact regarding a power cut. It has been agreed that the Energy Networks Association (ENA), in co-ordination with the Network Operators, shall, as a matter of priority, develop and implement a single national number for customer to call to be able to speak to their Network Operator in the event of a power disruption. In the meantime, improved access to customer data as referred to above, will greatly increase the ability for Network Operators to proactively contact customers, thereby reducing the need for them to contact their operator. In addition, the increased awareness campaigns to be done will provide short-term improvement in customer knowledge of their Network Operator and contact details.

A National Single Number

- 1.1. During the Christmas storms, it was noted that there was confusion for customers regarding who they should contact regarding a power cut. At present, as a result of regulatory requirements, Network Operators have separate numbers, mostly 0800 numbers, for each of their licence areas. Although these numbers are on bills and in telephone directories, customers who were affected during the Christmas storms often struggled to find the right number.
- 1.2. In order to resolve the issues set out above and provide customers with a memorable phone number to call during a power cut, the ENA had previously carried out work on moving to a three digit national number for customers to call during a power cut.

Action: Network Operators (led by the Energy Networks Association) will develop a single national number for customers to call during a power disruption

- 1.3. Following a meeting with the Secretary of State for Energy and Climate Change in January 2014 attended by the CEOs of all Network Operators, the ENA and the Chair of the Energy Emergencies Executive Committee⁴, it was agreed that the ENA would lead, with the co-operation of the Network Operators, work on developing a three digit number. It was agreed by all present that a national three digit number could be a critical tool in improving communication and information links between customers and Network Operators.
- 1.4. A critical requirement for the national three digit number is for calls from customers to be routed to the correct Network Operator. Customers would, therefore, no longer have to search for the correct phone number on their bill (which may not be easy to find in a power cut) or on the internet (which may not be available during a power cut). Customers would simply have to call a national three digit number and they would be routed to the correct Network Operator.
- 1.5. There are a number of regulatory challenges to the implementation of the three-digit solution. Ofcom, an independent regulator, will need to carry out a public consultation. After this consultation, the Network Operators will then need to conduct commercial

⁴ A forum for industry, government and regulator to work collaboratively on resilience issues

negotiations with telecoms operators to ensure that all calls to the national three digit number are carried by those operators.

- 1.6. It is noted, by way of comparison, that the implementation of the NHS “111” number took five years, and the implementation of the Police “101” number took five years to nationally implement from the first pilot period.
- 1.7. Whilst the national single national number is being developed, Network Operators will take steps to ensure that customers are aware of their individual phone numbers to call in the event of disruption to power supplies (see Action C10 above), as well as having access to improved data from Energy Suppliers, which will allow them to proactively contact disrupted customers. The ENA will be publishing in the spring an implementation plan for a single national number, agreed with ENA, Network Operators and by DECC.

Action: ENA to produce implementation plan for single national number, agreed with Network Operators and by DECC

- 1.8. The success of the single national number will, to a large extent, depend on how well known they are amongst the public. A campaign will, therefore, need to be devised to publicise the national number. This campaign should tie in with the work of the ENA and Network Operators to raise awareness amongst the public (see below, page 26).

National Number Actions

Action Reference	Action
N1	Network Operators (led by the Energy Networks Association) will develop a single national number for customers to call during a power disruption
N2	ENA to produce implementation plan for single national number, agreed with Network Operators and by DECC



Metal sheeting blown on to power lines



Netting caught on electricity pylon

Resource Availability and Management

The Experience at Christmas 2013

The overall response to the storms over Christmas 2013 involved a significant number of Network Operator staff / contractors working around the clock throughout the duration of the disruption. It is clearly evident that the staff of Network Operators displayed during Christmas Week, and continues to display, a high sense of public duty throughout these extreme weather conditions. A large proportion waived their own holidays and Christmas with their families to bolster the available resource pool, many themselves having been impacted by loss of power to their own properties. This high degree of public duty is extremely welcome.

Network Operator deployment

- 1.1. Each of the Network Operators responded in a similar way to the forecast severe weather.
- 1.2. On escalation of the weather forecast senior management and executives staffed Incident Control Centres and provided strategic direction and oversight to the restoration efforts for the duration of the incident. Operational managers deployed their teams of field engineers, tree cutters and overhead linesman to secure access and then safely repair faulted equipment. A number of Network Operators have also noted that “scouts” were also successfully used to locate damage and to speed up the restoration process, particularly as many overhead line routes experienced multiple points of damage. Logistics teams manned depots and managed plant and equipment deliveries to site. Central and corporate staff manned contact centres, managed local media engagement and provided on-going assistance to the restoration efforts. Many were also involved in supporting the welfare effort to local communities.
- 1.3. Whilst the overall response to previous storms has shown that the specific mix of resource arrangements described in the sections below are generally robust, in the event of more short term changeable extreme weather conditions and associated national or widespread disruption, they may pose a constraint in the timely restoration of customers and the re-establishment of a secure overhead line network particularly if experienced over extended bank holidays.

Overhead Linesmen resource

- 2.1. The most common damage experienced in storm events, and in particular during both the St Jude and Christmas storms which results in a loss of power supplies to properties, was to the distribution overhead line network through airborne debris or fallen trees bringing down power lines and / or poles. To repair these assets the availability of skilled overhead linesman resource can become the constraining factor in the speedy repair of faults and hence customer restoration.
- 2.2. In addition to their own internal direct labour, Network Operators supplement the linesman resource from third party contractors (used primarily for construction work but also to provide some additional resources for storm response) and *in extremis* mutual aid (discussed further below) from other operators (either their direct resource or contractors).
- 2.3. It is noted that a significant proportion of this contracted linesman resource is not permanently based in a geographically proximate location to the Network Operator

during weekends or extended holiday periods and is also sourced from a small number of contractor companies. As a consequence there is scope for Network Operators to call upon an overlapping contractor pool. However, the availability of these resources may be limited during weekends or extended holiday periods, as a result of the inevitable lead times for mobilisation of those who may require long travel times.

- 2.4. Scottish Power Energy Networks has noted that, they have been working with contract partners and local colleges over the delivery of joint apprenticeship programmes resourced from local communities; however they also suggested that an industry national industry commitment to these initiatives would address the problem far more quickly. UK Power Networks has signalled that it will consider reducing its use of contractor resource by augmenting its direct labour linesmen, in recognition of the mobilisation challenges that their contractors faced during the Christmas storms.

Action: Network Operators will hold a workshop to share their resource and contractor management strategies

Action: Network Operators will review their contracting arrangements and their dependence on them to ensure the rapid availability of adequate resources to deliver resilience particularly over extended holiday periods

- 2.5. Due to geographical diversity between licence areas (See Appendix 1) some Network Operators are able transfer their resources between licence areas for responding to disruptions albeit this becomes less viable in the event of, or forecast for, a widespread or national disruption. Western Power Distribution has a large number of direct labour linesmen and also covers four contiguous licence areas with the result that it has a higher capacity than other operators to flex its resources and thus enable their rapid redeployment. Also it is noted that on this occasion Scottish and Southern Energy Power Distribution, which flexes its resources between northern Scotland and southern England as required to aid a response, was heavily involved in dealing with a significant⁵ storm in Scotland at the time when forecasts of the Christmas storms were received.

Contact Centre Resource

- 3.1. The availability of sufficient call handling resources are critical during a significant disruptive event, to ensure both proactive call making and also to ensure that long queuing times are not experienced by those customers wishing to wait to speak to a call handling agent. It is noted that despite the national forecast conditions and because of the wide variation in the impact of the storm on different Network Operator regions, not all contact centres were stretched to the same extent as others during the Christmas week, and some callers experienced longer wait times than may have been reasonably expected.

Action: Network Operators will review their contact centre resourcing arrangements to ensure adequate and trained capability is available under the reasonable worst case call scenario (Action C2 above)

- 3.2. During major events UK Power Networks augments its dedicated internal call centre staff with volunteer internal staff call-handlers from across its business. In addition, it is the only Network Operator to use external resources as part of its contact centre resourcing strategy. UK Power Networks' trains and monitors its external provider's staff to the same standards as for internal staff, and stations staff at the external provider during

⁵ Category 1 on the Ofgem scale Non-lightning events – when a distributor experiences at least 13 times the normal amount of faults in 1 day – supplies will be restored within 24 hours

major events. The external partner who has been working with UK Power Networks for over three years is located within two miles of its Customer Service centre.

Action: UK Power Networks will review the resourcing strategy of its contact centre to ensure it has sufficient flexibility to upscale during a disruptive event

- 3.3. Scottish Power Energy Networks has the capacity to double contact centre resources having up-skilled backroom staff. Western Power Distribution has widely deployed home working access to its outage management and call handling systems thereby maximising the flexibility and potential availability of in-house resource to take and manage customer calls. Whilst home working may not be a silver bullet to the augmentation of resources and may not always be appropriate for all incidents, it does however increase the options available and enable a flexible response, and the merits and practicality are worthy of consideration by other Network Operators.
- 3.4. Network Operators need to be prepared for an incident that may lead to a high volume of calls by ensuring that enough back-up resources are appropriately trained, and ensuring that there are flexible arrangements in place to allow staffing levels to be increased rapidly in the event of an incident. As highlighted during Christmas this preparation needs to pay particular attention to providing cover for prolonged public holiday periods and out of hours. Operators must, therefore, have arrangements that are sufficiently flexible to allow adequate numbers and appropriately trained resources to be accessed at short notice.

Industry Mutual Aid Protocol

- 4.1. The industry NEWSAC⁶ mutual aid protocol is supplemental to the response of widespread events and the coordination of resources, both direct labour employees and contracted staff, to effectively restore electricity supplies to customers, regardless of which Network Operator those customers are served by. Whilst it has served the industry very well to date, the number of invocations since late 2011 through to the end of 2013 has far outstripped any other 24 month period since privatisation in 1991.
- 4.2. The mutual aid protocol is mainly a reactive response strategy, usually only meeting once an incident has started, rather than in advance. If there had been a meeting in advance of the Christmas storms, it is likely that effective scenario planning could have been undertaken prior to the weather hitting, presenting an opportunity to engage with potential staff available via mutual aid before the holiday period.

Action: The NEWSAC Mutual Aid protocol should be reviewed and if appropriate, updated to ensure it is adequately proactive, and criteria around strategic prioritization are clear.

- 4.3. All of the Network Operators have raised concerns that as Ofgem increase the incentives around the guaranteed standards for restoration of power to households, these mechanisms potentially disincentivise industry from the sharing of resource through its mutual aid arrangements, until such time as the operator(s) have positively confirmed that the associated performance requirements either have been met or will not be compromised.

Ancillary Resources

- 5.1. Though the provision of linesmen, and contact centre resources was the focus of the review, it is evident that there is a significant amount of additional people resource, that are critical to being able to deliver an effective response to any disruptive event. No

⁶ North, East, West and South Area Consortium

specific findings or areas of concern have been identified in respect of this wider pool of resource, other than to note that this is an area not neglected by Network Operators and that the continued effective management of this resource is vital to continued successful responses. A good example of this is that Scottish and Southern Energy Power Distribution was able to call up catering staff at short notice. This allowed them to provide meals to both their staff and customers.

Strategic Spares

6.1. Resource deployment is not simply about people deployment, but also the location of strategic spares of equipment, for example new cables and poles, to replace those that have been damaged. All six Network Operators have confirmed that there were no restoration delays as a result of a lack of spare parts to enable repairs. Prefilled storm crates or containers have been effectively used to strategically locate spares at key points within the networks to aid the speed to the restoration process.

Learning from Previous Incidents

7.1. During the review, all Network Operators provided evidence to demonstrate learning from previous incidents. UK Power Networks discussed a number of actions which have been taken since their experience in the St Jude storm. Northern Power Grid demonstrated their “Major Incident Management Plan Review” where all stakeholders involved in a Major Incident, whether from contact centre, control centre, field or corporate teams or indeed external to the company, come together annually to share lessons learnt from previous incidents and developments to the management process.

Resourcing Actions

Action Reference	Action
R1	Network Operators will hold a workshop to share their resource and contractor management strategies
R2	Network Operators will review their contracting arrangements and their dependence on them to ensure the rapid availability of adequate resources to deliver resilience particularly over extended holiday periods
R3	Network Operators will review their contact centre resourcing arrangements to ensure adequate and trained capability is available under the reasonable worst case call scenario
R4	UK Power Networks will review the resourcing strategy of its contact centre to ensure it has sufficient flexibility to upscale during a disruptive event
R5	The NEWSAC Mutual Aid protocol should be reviewed and if appropriate, updated to ensure it is adequately proactive, and criteria around strategic prioritization are clear

Media Engagement

The Experience at Christmas 2013

During the Christmas Storms local media engagement by Network Operators was well managed and effective. National media engagement co-ordinated by the Energy Networks Association (ENA) was effective in the first few days of the Christmas week. However, as customers remained off supply into Boxing Day and longer, the industry collectively was heavily criticised. There was a failure to proactively engage with, and convey, to the media the effort which was going into reconnecting supplies, the challenges faced in restoring supplies and the welfare arrangements of the Network Operators.

Local Media Engagement

- 1.1. Local media plays a vital role in communication during a disruptive event; it is in a position to receive detailed and focused information from the Network Operator and facilitate two-way local engagement.
- 1.2. During disruptive events, including the Christmas 2013 storms, Network Operators proactively engage with their local media to provide situation updates, details of severe damage to the network and, when appropriate, where welfare facilities were being deployed.
- 1.3. Network Operators dealt with large volumes of local media queries, in particular asking for updates of figures for the number of properties experiencing power disruption. Regular press releases, factsheets and figures were sent out by all operators and, over the course of the storms in October and December some saw five to six times the normal daily press interest.
- 1.4. During a severe disruptive event, information as to the numbers off supply can fluctuate quickly. It proved difficult for some Network Operators to convey a consistent message as to the numbers off supply to all stakeholders. Those Network Operators who maintained a fixed time and consistent detail of reporting into the media and other stakeholders were able to better manage their media messaging.
- 1.5. Despite the strengths of event specific engagement it was apparent that most customers, whose primary contact is with their energy supplier, are not aware of, and do not understand the service provided by Network Operators.

Action: Energy Networks Association to co-ordinate a campaign to raise awareness of the role of the Network Operator, complementing individual awareness raising efforts by each Network Operator

National Media Engagement

- 2.1. Network Operators also received national media enquiries from across the print, TV and radio media. The majority of these calls were referred to the Energy Networks Association (ENA) to provide a national picture with some regional highlights of the areas which were worst affected.
- 2.2. In a significant and widespread power disruption, the ENA is in a position to provide a focus for the high levels of national media interest, without drawing resource from Network Operators, thereby complementing the local engagement strategies. During the

Christmas storms, the ENA handled a large number of calls from national journalists, collated the national picture of impact and kept the bulletin and rolling news media updated. Many Network Operators commented on the effectiveness of the ENA's response which allowed their press teams to focus on engaging with local media.

- 2.3. At the time of the storms over the Christmas period, the ENA handled in excess of 100 media enquiries and gave more than 50 interviews. These began on the morning of Monday 23 December when the damage of the storms was still becoming clear and continued throughout the period until the New Year. However, in contrast to the St Jude's storm in late October 2013, there was no advance engagement with the media, thereby presenting a more reactive approach, and making it difficult to ensure accurate reporting.
- 2.4. In the first two days of the incident, there was general goodwill and understanding from the media. However, from the third day onwards the agenda moved to being more critical of the time it was taking to reconnect customers and in some cases the ability of Network Operators to keep customers updated on progress. The ENA did not continue to engage effectively with the national media story beyond 27 December, allowing criticism of the industry response and speed of restoration to be made without due context. Despite the significant positive work undertaken by Network Operators to reconnect supplies, providing welfare support and providing customers with up-to-date accurate advice, that this was not always conveyed by the media coverage.

Action: Energy Networks Association to develop a scalable, proactive national media engagement strategy for use during disruptive events with a national impact

- 2.5. Network Operators were able to provide some filming opportunities for national media to help highlight the challenges faced in restoring supplies and to explain the time it was taking to reconnect customers, though on a number of occasions footage used in the media did not correctly align with the operator being reported in the story and this caused further confusion. It is evident that more needs to be done by Network Operators and the ENA to provide the public and the media with a better understanding of the challenges faced in restoring supplies.
- 2.6. Similarly, the national broadcast media can play a critical role in making people aware of the welfare provisions which are being made available by Network Operators. Where possible, interviews with engineers and footage of the welfare provisions will help to show the challenges faced and the efforts being made by operators.
- 2.7. There is a need to consider the developing narrative and messaging required during events of this scale and duration. The ENA was able to convey useful high-level information during the first few days of the incident over Christmas. However, it is clear that further thought needs to be given to developing a national communications strategy to help ensure customers receive accurate information through the media. Further, it is important that the media and public receive consistent messages from Network Operators, the ENA and the Government during any disruptive event. In order to ensure that there is consistent messaging during any such incident, the industry's media strategy will, therefore, need to tie in with the Government's own approach and requirements. During major incidents, the breadth of reporting from Scottish and Southern Energy Power Distribution, covering both the technical issues and also the softer welfare issues and arrangements, has found to be particularly useful. Similarly Western Power Distributions' post-event Summary report provides rapid and concise details of their restoration effort.

Action: DECC to produce a clear scope and requirements for reporting during disruptive events, setting out roles of organisations, and information required

Media Actions

Action Reference	Action
M1	Energy Networks Association to co-ordinate a campaign to raise awareness of the role of the Network Operator, complementing individual awareness raising efforts by each Network Operator
M2	Energy Networks Association to develop a scalable, proactive national media engagement strategy for use during disruptive events with a national impact
M3	DECC to produce a clear scope and requirements for reporting during disruptive events, setting out roles of organisations, and information required



Farms structure blown on to electricity pylon and lines

Welfare Provision

Welfare Support during Prolonged Disruptions

The loss of electricity supply for even a few hours can cause significant problems for customers, especially for those who are considered to be vulnerable, who may be more dependent on electricity for vital services. Network Operators have recognised the range of impacts as a result of disruptions, and where appropriate provide a range of welfare services to support customers, including the provision of vehicles with cooking, and mobile phone charging capabilities, the provision of torches and wind-up radios, as well as food, and hotel accommodation. Network Operators provided approximately 27,000 hot meals to customers who were without power during the Christmas period.

Welfare Provision

- 1.1. There are no obligations on Network Operators to provide welfare provision and support to customers during a disruptive event; however, all six operators do so. The responsibility shown by Network Operators is commendable, and further demonstrates their commitment to a public duty ethos. Effective engagement with Local Authorities, Category 2 responders and voluntary services is an essential aspect of providing welfare to customers. Working with Local Resilience Fora, and Gold and Silver Commands is important to ensure a coordinated approach to welfare and in ensuring assistance is provided where it is most needed.
- 1.2. Whilst recognising the voluntary nature of this provision provided by Network Operators, it is clear there are a number of areas that can be improved to guard against the risk of vital welfare provision being omitted or delayed because of a lack of a clear process.

Action: Network Operators will hold a workshop to share strategy and approach to share welfare provision and learning and identify best practice

Action: Network Operators will review arrangements with the British Red Cross and / or similar providers ensuring where appropriate contracts exist

Action: Network Operators should consider establishing framework agreements with local service providers (e.g. catering) to supplement existing welfare arrangements

Welfare Actions

Action Reference	Action
W1	Network Operators will hold a workshop to share strategy and approach to welfare provision and deployment learning and identify best practice
W2	Network Operators will review arrangements with the British Red Cross and / or similar providers ensuring where appropriate contracts exist
W3	Network Operators should consider establishing framework agreements with local service providers to supplement existing welfare arrangements

Goodwill Payments

Prolonged Disruptions

In the event of a prolonged disruption to electricity to a property, the customer affected may be eligible for a goodwill payment from their Network Operator. Whether or not a customer is eligible for such a payment is dependent on the severity of the disruptive event, the threshold for which is set by Ofgem. The Christmas storms, for most Network Operators, was classified as a Category 2 (large events) disruptive event, customers who experienced a disruption for more than 48 hours were eligible for a payment under regulation, some 16,000 customers.

It was noted during the review that Network Operators had examples of where customers had either refused the payments or ask that they be directed to charities, recognising the hard work in very difficult conditions undertaken by staff responding to disruptive incidents.

Thresholds for Payment

- 1.1. It is the responsibility of Ofgem to set the thresholds for payment, and amounts of, goodwill payments. These payments are an incentive for all operators to ensure restoration as quickly as possible, and should not be considered as compensation for the inconvenience experienced by the customer.
- 1.2. Ofgem, in their own regulatory review of the disruptions experienced over Christmas, have noted that in light of the length of time taken to restore some customers, there is a need to review the standards, and where necessary make changes. Ofgem has indicated that it will consult at the end of March 2014 on whether the levels of payments to customers should be increased.
- 1.3. Following the Christmas storms, a number of operators voluntarily increased the amounts they paid to customers, recognising the particular inconveniences of power disruptions over Christmas.

Process

- 2.1. DECC has considered the process for notifying a customer they are eligible for a payment, and for making that payment. There is a mixed approach by Network Operators to this process. Scottish Power Energy Networks, as do others, proactively write to all customers who are eligible for a payment to notify them of such.
- 2.2. Customers who believe they are eligible for a payment as a result of a prolonged disruption are able to apply directly, with information on how to do so being available on Network Operators websites. Though, it was noted that, information on eligibility and how to apply has not always been as easy for customers to find.

Action: Network Operators will review their internal processes for notifying eligible customers of goodwill payments, and ensuring these are paid efficiently

Goodwill Payment Actions

Action Reference	Action
G1	Network Operators will review their internal processes for notifying eligible customers of goodwill payments, and ensuring these are paid efficiently



Electricity substation protected from surrounding flood waters

Vegetation Management

The Experience at Christmas 2013

The industry vegetation management standards are designed to ensure the overhead network is safe and resilient to damage sustained from trees. During the storms of Christmas 2013 and in fact in February 2014 the experience for some Network Operators has been one of entire trees being uprooted and dropped on to the lines, a risk that the Industry standards were not designed to entirely mitigate. It is also noted that in a number of occasions the wind was so strong that small structures (farm buildings) were blown onto to the power network.

Vegetation Management Risks

- 1.1. During storms, in addition to general windborne debris, fallen trees and airborne branches will come into close proximity or contact with power lines, causing loss of supply to customers, simply because they cause faults, or more significantly through causing damage to the conductors. In more extreme cases supporting wood poles may be damaged. A significant factor affecting the performance of networks during storm conditions is therefore whether vegetation, in particular trees, in the proximity of overhead power lines has been actively managed in accordance with the requisite Regulations.
- 1.2. The Electricity Safety, Quality and Continuity Regulations (ESQCR) require vegetation management for safety and continuity considerations and as indicated above vegetation management in the vicinity of overhead power lines is a critical factor in delivering network resilience. Engineering Standard ETR 132 "Improving Network Performance Under Abnormal Weather Conditions by Use Of A Risk Based Approach To Vegetation Management Near Electric Overhead Lines" puts in place a requirement for Network Operators to take a risk based approach and fell a proportion of those trees within falling distance of overhead lines. The programme is funded via price controls agreed with Ofgem.
- 1.3. Apart from in one licence area within UK Power Networks all operators have confirmed that vegetation management programmes are on track. The licence area marginally behind programme due to a contractor change was not material to the network performance during Christmas week, as there was no significant weather related impacts, and assurances have been provided that this will be recovered by the end of the financial year. Electricity Northwest has queried whether the ETR 132 programme should be reviewed and it is noted that following stakeholder support WPD has agreed an enhanced programme with Ofgem. However Scottish Power Energy Networks has explained that its stakeholders were not in favour of an enhanced programme.
- 1.4. At this stage given the disparity of opinions between Network Operators currently no further actions are suggested, however, it is noted that the Energy Emergencies Executive Committee will share experiences in this area through the Electricity Task Group in due course.

Multi-Agency Engagement

- 1.1. During significant disruption events effective multi-agency engagement (via GOLD Command and / or Local Resilience Forums) will minimise the duress experienced by customers.
- 1.2. Coordination across regions has proved more challenging for Category 2 responders since the removal of the regional tiers of government. As Network Operators cover large geographical areas the volume of multi-agency forums triggered in widespread events can become difficult to cover and ensure a proportionate response to all meeting requests. There were also some criticisms that Network Operators were not sufficiently engaged in Local Resilience Forum meetings during the early days of the incident although it has also been suggested that contact lists may not hold the latest Network Operator details. UK Power Networks noted that it responded to the Local Resilience Forums attending conference calls where required, however this was predominantly in relation to flooding. Specifically they stated that they had found it very difficult to get any support from the forums for their affected customers.

Action: DECC will pass this feedback on engagement challenges into the appropriate body of central Government and in particular will suggest to Department for Communities and Local Government that they ensure that Local Fora have the correct contact details for Network Operators.

Multi-Agency Engagement Actions

Action Reference	Action
MA1	DECC will pass this feedback into the appropriate body of central Government and in particular will suggest to Department for Communities and Local Government that they ensure that Local Fora have the correct contact details for Network Operators.



Trees uprooted on to power lines

Action Implementation Plan

Governance and Oversight

Implementation of the actions set out in this report will be overseen by the Energy Emergencies Executive Committee, a forum for Government, Industry and Regulator to engage on resilience issues in the energy sector, and ensure collaborative working on shared priorities to improve resilience to identified risks. The Chair of the Committee, and Chairs of the Electricity Task Group and Communications Task Group, have reviewed the actions and the high level delivery timetable, and have endorsed them. In addition to facilitation and oversight of the delivery of many of the actions they will be seeking assurance from individual organisations that actions are completed. The Energy Emergencies Executive Committee will provide a response to the Department of Energy and Climate Change by October 2014, providing assurance that actions have been undertaken, and highlighting any further actions that have been identified as a result, that will improve the efficiency and effectiveness of the industry response to disruptive events.

The high-level implementation plan has been drawn up collaboratively with industry stakeholders, all of whom are signed up to the agreed implementation.

High-level Implementation Plan

Action Reference	Action	Responsible Delivery Body	Expected Completion Date
F1	Network Operators will hold a workshop to share their approaches and discuss best practice on weather forecasting and escalation triggers	Energy Networks Association	End of April 2014
C1	Network Operators to ensure their telephony platform does not force disconnect callers	Individual Network Operators	End of August 2014
C2	Network Operators to hold a workshop to consider the development of a "reasonable worst case scenario" for call volumes	Electricity Task Group	End of April 2014
C3	Network Operators actively review and stress test their telephony systems to ensure adequate call receiving capacity / transmission to manage extreme events	Individual Network Operators	End of August 2014
C4	Electricity Northwest to review its telephony platform capacity and processes to ensure that it is meeting customer expectations in the context of the reasonable worst case scenario for call volumes	Electricity Northwest	End of May 2014
C5	UK Power Networks should ensure appropriate capacity upgrades are identified and implemented	UK Power Networks	Completed

C6	Network Operators will hold a workshop to share practices to social media engagement and Network Operators will each develop a social media engagement and resource strategy and stress test this for use during disruptive events to ensure effective use of available tools / systems	Communications Task Group	End of April 2014
C7	Northern Powergrid shall submit a data flow change request to Gemserv on behalf of the other Network Operators to initiate the release of customer contact details for use during disruptive events. Network Operators shall ensure that, in advance of winter in October 2014, they have, where available, obtained the telephone contact details of customers from energy suppliers	Individual Network Operators	End of August 2014
C8	Network Operators will review and test their processes and systems to ensure that they are capable of allowing field staff to efficiently and effectively provide timely and accurate updates to network customer contact centres	Individual Network Operators	End of August 2014
C9	Network Operators will develop and implement a common framework that clarifies standards expected around the identification and provision of a restoration time to customers and its subsequent proactive update in the manner agreed with the customer	Electricity Task Group with Communications Task Group	End of August 2014
C10	Network Operators should take steps to identify the levels of recognition amongst customers, and address any gaps using appropriate communications strategies, including making sure that, whilst a national power outage number is developed, each Network Operator's customers are aware of the correct phone number to call in the event of disruption to power supplies.	Individual Network Operators	End of August 2014
N1	Network Operators (led by the Energy Networks Association) will develop a single national number for customers to call during a power disruption; the first phase to be implemented by spring 2015	Energy Networks Association	TBC
N2	ENA to produce implementation plan for single nation number agreed with Network Operators and by DECC	Energy Networks Association	Spring 2014
R1	Network Operators will hold a workshop to share their resource and contractor management strategies	Electricity Task Group	End of April 2014
R2	Network Operators will review their contracting	Individual Network	End of May 2014

Action Implementation Plan

	arrangements and their dependence on them to ensure the rapid availability of adequate resources to deliver resilience particularly over extended holiday periods	Operators	
R3	Network Operators will review their contact centre resourcing arrangements to ensure adequate and trained capability is available under the reasonable worst case call scenario	Individual Network Operators	End of May 2014
R4	UK Power Networks will review the resourcing strategy of its contact centre to ensure it has sufficient flexibility to upscale during a disruptive event	UK Power Networks	End of August 2014
R5	The NEWSAC Mutual Aid protocol should be reviewed and if appropriate, updated to ensure it is adequately proactive, and criteria around strategic prioritization are clear	Energy Networks Association	End of August 2014
M1	Energy Networks Association to co-ordinate a campaign to raise awareness of the role of the Network Operator, complementing individual awareness raising efforts by each Operator	Energy Networks Association	End of August 2014
M2	Energy Networks Association to develop a scalable, proactive national media engagement strategy for use during disruptive events with a national impact	Energy Networks Association	End of August 2014
M3	DECC to produce a clear scope and requirements for reporting during disruptive events, setting out roles of organisations, and information required	Department of Energy and Climate Change	End of May 2014
W1	Network Operators will hold a workshop to share strategy and approach to welfare provision and deployment learning and identify best practice	Electricity Task Group	End of August
W2	Network Operators will review arrangements with the British Red Cross and / or similar providers ensuring where appropriate contracts exist	Individual Network Operators	End of August 2014
W3	Network Operators should consider establishing framework agreements with local service providers to supplement existing welfare arrangements	Individual Network Operators	End of August 2014
G1	Network Operators will review their internal processes for notifying eligible customers of goodwill payments, and ensuring these are paid efficiently	Individual Network Operators	End of August 2014

MA1

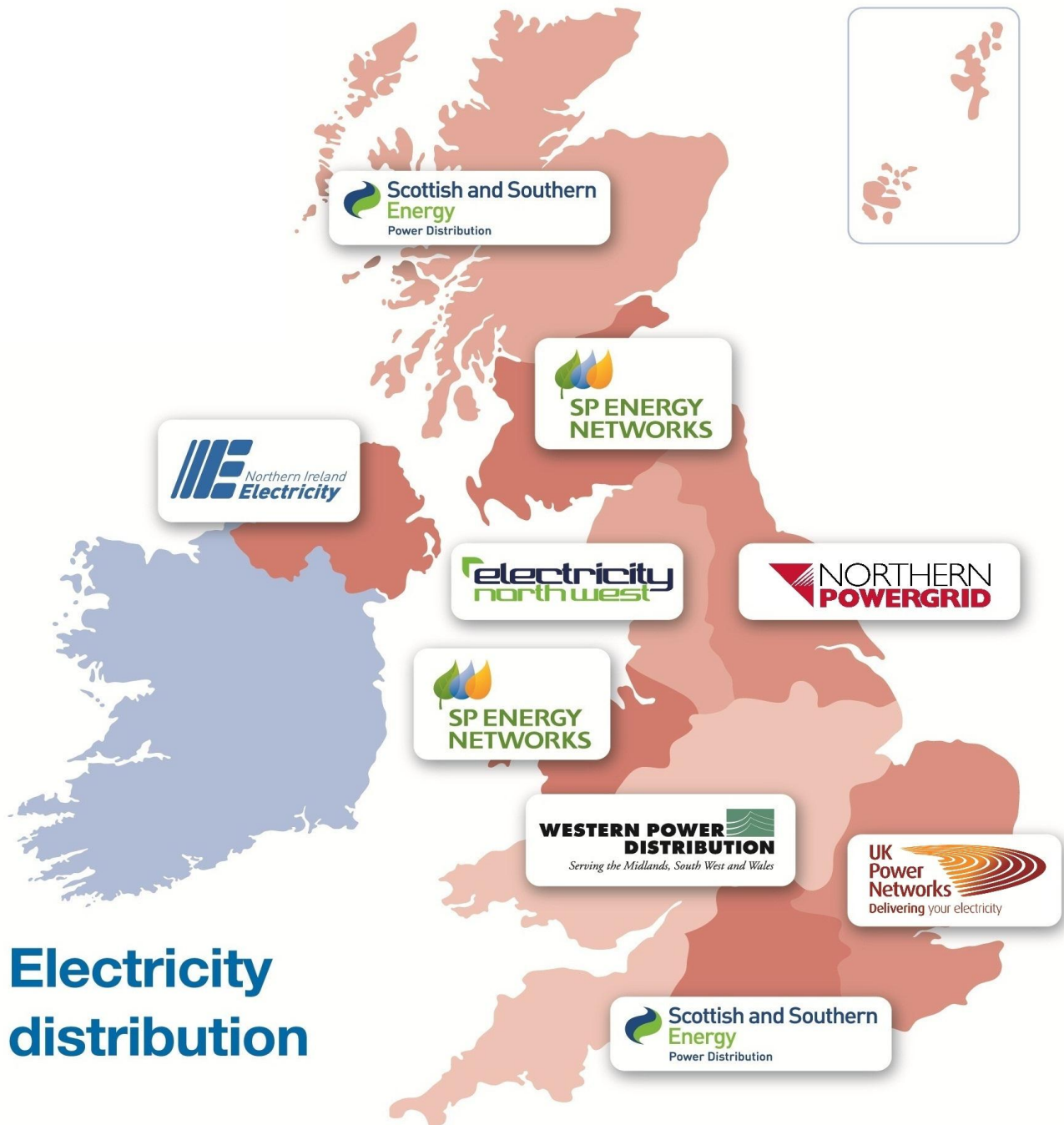
DECC will pass feedback on engagement challenges into the appropriate body of central Government

Department of
Energy & Climate
Change

End of May 2014

Appendix One

Distribution Network Operators



Electricity distribution

Energy Networks Association map of Electricity Distribution Network Operators

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