

Final report on the review into the networks' response to Storm Arwen



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Report

Final report on the review into the networks’ response to Storm Arwen

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Contents

Contents	3
Foreword	5
Executive Summary	7
1. Introduction	15
2. Assessment of what happened	17
Impact on network infrastructure.....	17
Impact on customers	17
3. Network Resilience	20
What customers and stakeholders told us	20
Overhead line poles	20
Tree cutting	21
Organisational resilience	23
Overall network resilience	24
4. Planning and preparation	26
What customers and stakeholders told us	26
Winter preparedness plans for vulnerable customers	26
5. Handling of incidents	28
What customers and stakeholders told us	28
Fault Management	29
Resource Deployment.....	31
NEWSAC arrangements	32
Deployment of generators.....	33
6. Communication and support during the incident	35
What customers and stakeholders told us	35
Contact centres	35
Websites.....	38
Estimated Time of Restoration	39
Roles and responsibilities of DNOs in severe weather	39
7. Support after the incident	41
What customers and stakeholders told us	41
Compensation payments.....	41

8. Next steps.....	45
Appendix 1: Summary of Recommendations.....	46
Appendix 2: Stakeholders.....	49

Foreword

As the regulator for the energy market, Ofgem’s top priority is to support and protect consumers in vulnerable situations, and it is vital that we constantly look where improvements can be made in their interests.

In late November 2021, Storm Arwen brought severe weather to the UK, with winds reaching up to 98mph in some areas. Inevitably this had a significant impact on the electricity distribution networks and resulted in over one million customers losing power.

Some network companies clearly fell short of what is expected of them. Around 4,000 customers were left off supply for over a week, in many cases with poor communication and inadequate support. Having so many customers off supply for an extended period was clearly unacceptable to consumers, and we have conducted this review to understand the circumstances and causes.

Ofgem examined what the network companies did before, during and after the event, and investigated compliance of the relevant licence conditions of the Distribution Network Operators (DNOs) involved. To understand the impacts of Storm Arwen, we gathered evidence from customers, Members of Parliament, Members of the Scottish Parliament, Councillors, trade union and consumer groups and NHS Medical Alliance.

Whilst front-line staff of the network companies worked hard in challenging circumstances, we found that in many cases consumers were badly let down. We heard distressing stories of customers feeling abandoned and deserted, of not knowing when their supplies would be restored, or what support was available to them. We found that these shortfalls were rooted in the DNOs’ customer services and systems. We also think that some network companies were slow to compensate their customers for the disruption they endured after the event. In recognition of these issues, three DNO’s have individually reached agreement to pay, via alternative action, an additional £10.28 million for consumers, over and above the £29.64 million they have already paid through mandatory and voluntary compensation payments.

This report makes clear recommendations on how DNOs can improve their preparation for and response to severe weather, including stress testing, which I warmly welcome. It is vital that the industry learns lessons to better respond to storm events, and we are calling on all DNOs to take swift action in relation to the specific recommendations addressed to them and

make the necessary improvements before the coming winter, reporting back to Ofgem on these in October.

With these changes, we can make sure that the system is able to withstand increasingly extreme weather events such as Storm Arwen and is better placed to ensure that customers receive the high standards of service, they have a right to expect.



Jonathan Brearley

Chief Executive



Executive Summary

Storm Arwen brought widespread disruption to the UK and resulted in over one million customers losing power. Approximately 40,000 customers were without supply for more than three days, and nearly 4,000 customers were off supply for over a week. In light of the severity of the event and the long duration that many customers endured without power, we have conducted a review of the DNOs response to Storm Arwen.

We published an interim report¹ in February 2022 and provided an early indication of the areas that needed to be investigated further. We recognised that staff in all DNOs worked hard in challenging circumstances to get customers reconnected but found that there are clear lessons to be learned to improve DNO performance. This final report builds upon on the initial findings we outlined in our interim report and sets out clear recommendations for improvement.

This review is distinct, but complementary to the review undertaken by the Energy Emergencies Executive Committee (E3C)² which was commissioned by the Secretary of State for Business, Energy & Industrial Strategy (BEIS) in December 2021³. Our review has specifically focused on matters of compliance with statutory and licence obligations; whether companies fell short of their customers’ expectations and wider regulatory considerations such as the use of price control funding and the compensation arrangements. Where appropriate, our recommendations align with the E3C’s to ensure a consistent response across the energy sector.

Since this review was commissioned, further storms have impacted GB, including Storms Eunice and Franklin. Whilst these had less impact on customers compared to Storm Arwen⁴,

¹ <https://www.ofgem.gov.uk/publications/review-networks-response-storm-arwen-interim-report>. In some cases there are differences between the data presented in our interim and final reports. This is because the interim report data was compiled from information requests made to DNOs in Dec 2021 and correct as of 21 Jan 2022. In this report, we’ve used data that was provided by DNOs or BEIS at a later date.

² E3C is a partnership between government, and industry, which ensures a joined-up approach to emergency response and recovery.

³<https://www.gov.uk/government/publications/storm-arwen-electricity-distribution-disruption-review/storm-arwen-electricity-distribution-disruption-review-terms-of-reference>.

⁴ Whilst Storm Eunice affected more customers (1.7 million compared to 1 million affected by Storm Arwen), power was restored to these customers more quickly.

we believe the recommendations outlined in this report are applicable to these events as well.

The majority of actions are relevant to all DNOs and the E3C will be responsible for implementing these. We expect DNOs to address these recommendations and improve network resilience for future storm events. We will consider these actions as we develop the framework of the next price control⁵ for electricity distribution companies (RIIO-ED2). Our key findings are summarised below and in Appendix 1.

Alternative action

We examined how long customers spent off supply, how long it took for customers to receive compensation, the accuracy of these payments and communication with customers during the storm.

NPg accepted the performance of its call centre fell below the standards it would hope to meet during a severe storm. This could be a potential breach to licence condition, SLC 8.3(b) & (c), which relates to the availability and operation of their call centre⁶.

Ofgem recognises that consumer expectations around restoration times and receiving compensation, differed from their experience during Storm Arwen. In recognition of these expectations, NPg, SSEN and ENWL have individually agreed to pay, via alternative action, an additional £10.28 million to consumer resilience funds, over and above the £29.64 million they have already paid through mandatory and voluntary compensation payments. In addition ENWL and SSEN have agreed to spend £3.7m and £1.2m respectively on network resilience through shareholder funded activity.

We have set out the individual amounts paid by the three DNOs below, noting that NPg’s payment also includes payment to cover the communication issues with customers identified

⁵ As monopoly providers of an essential service, DNOs are regulated through price controls to ensure they deliver value for money. We set the amount of money (allowance) that can be earned by the network companies over the length of a price control, as well as the outputs we expect them to deliver. DNOs recover this allowance from charges to energy suppliers, who in turn pass these costs through to customers through their energy bills. The allowances are set at a level which covers the DNOs’ costs and allows them to earn a reasonable return. RIIO-ED2 relates to the price control for DNOs for the period 1 April 2023 to 31 March 2028.

⁶ SLC 8.3 (Safety and Security of Supplies Enquiry Service)

above. Some of this will be paid as enhanced compensation directly to those affected, through contributions to consumer charities working to support the communities that were affected and into network upgrades to minimise the impact of future storm events.

- NPg – total package of £7.69m for consumers. This is in addition to the £12.39m it already paid out to consumers.
- SSEN – package of £2.30m for consumers⁷. This in addition to the £13.10m it has already paid out to consumers.
- ENWL –package of £0.29m for consumers⁸. This is addition to the £4.15m it has already paid out to consumers.

These alternative action payments exclude costs relating to network repairs or additional welfare payments made by all affected DNOs, including the costs relating to alternative accommodation, the provision of meals and other direct support.

We assessed SPEN's response to the storm and considered that further redress was not required as they had already paid an additional £150 to all customers who were off supply for more than 48 hours, reconnected customers sooner and paid out compensation to affected customers more quickly than NPg, ENWL and SSEN.

Network resilience

We found that the majority of network faults during Storm Arwen were caused by strong winds or trees and branches falling onto power lines.

Action 1: We recommend that the E3C should review current network infrastructure standards and guidance, including those for vegetation management and overhead line designs, to identify economic and efficient improvements that could increase network resilience to severe weather events. This should be completed by 30 September 2022.

⁷ In addition SSEN have agreed to spend £1.2m on network resilience through shareholder funded activity.

⁸ In addition ENWL have agreed to spend £3.7m on network resilience through shareholder funded activity.

We also found some correlation between poles that were damaged during Storm Arwen and their age; however this needs to be investigated further.

Action 2: We recommend that DNOs and Ofgem should commission a review into how pole health is assessed, to identify changes that will improve pole condition reporting. This action should be completed by 30 July 2022.

Some DNOs have worked with external expert bodies to assess the readiness and resilience of their organisations. We think that other DNOs could benefit from undertaking a similar assessment.

Action 3: We recommend that the E3C should assess the feasibility and benefits of developing a standard-based approach to organisational resilience to improve the speed of customer restoration during severe weather events. This action should be completed by 30 September 2022.

More broadly, we think that the current standards, incentives, and guidance documents that support the DNOs in providing a reliable network are more focused on preventing interruptions from occurring, rather industry response during a power outage.

Action 4: We recommend that the E3C should put forward proposals for an outcome-focused resilience standard to set Government and public expectations on restoration times during widespread power disruptions. This action should be completed by 30 September 2022.

Planning and preparation

We found that whilst all companies initiated their emergency plans several days before the storm hit, these were not sufficient to deal with the scale of damage that resulted from Storm Arwen. Some DNOs did not adapt their resources or strategies quickly enough to respond.

We also examined whether DNOs implemented their winter preparedness plans. These are aimed at ensuring that all customers, including those in vulnerable situations, are effectively supported during power outages.

We found that one DNO (NPg) did not directly contact vulnerable customers enrolled on its Priority Services Register (PSR) prior to Storm Arwen. This should have been carried out as part of its planned winter preparedness campaign.

Action 5: We recommend that DNOs should submit their winter preparedness plans for 2022/23 to Ofgem. This will provide assurance that DNOs have taken the necessary steps to ensure that all customers, including those in vulnerable situations, can be effectively supported in power disruptions. This action should be completed by 30 September 2022.

We will confirm the scope of this report by 30 August 2022 and set out how DNO winter preparedness plans fit within the RIIO-ED2 framework in our Final Determinations document, by 31 December 2022.

Handling of incidents

We found that the limited amount of remote monitoring on the lower voltage networks, hindered the DNOs from understanding the full scale and complexity of faults. This impacted the number of resources they initially deployed to undertake repairs, restore power, and support customers.

Action 6: We recommend that the E3C should review and update industry best practice for identifying faults and assessing the extent of network damage, to reduce customer restoration times. This action should be completed by 01 April 2023.

NPg’s call centre received a large volume of enquiries and UKPN stepped in to provide some assistance. This arrangement is a good example of DNOs working together and providing support in emergencies.

Action 7: We recommend that the E3C should identify other appropriate areas where mutual aid could be appropriately and effectively deployed to reduce customer restoration times or enhance customer support during power outages. This action should be completed by 30 September 2022.

We also found that DNOs adopted slightly different approaches on the deployment of generators. This may have led to some customers being off supply for longer than necessary.

Action 8: We recommend that the E3C should identify options to enhance the use of mobile generators in reducing the length of power disruptions. This action should be completed by 01 August 2022.

Communication and support during the incident

In our interim report we said that we would look into the availability of phonelines and check whether customer enquiries were dealt with in a prompt and efficient manner in accordance with DNOs’ licence conditions.

From our customer research and stakeholder feedback, we found that many customers found it very difficult to get in contact with their DNO via phone and had difficulty accessing accurate information, as well being unable to report power outages and network damage. NPg’s website was also unavailable for a short period of time as it was unable to deal with the volume of traffic and ENWL switched off its call back function, whilst other DNOs kept this function available despite receiving higher call volumes.

Action 9: We recommend that the E3C should review and update “reasonable worst-case scenario” planning assumptions for call volumes. This action should be completed by 01 August 2022.

Action 10: We also recommend that DNOs should stress test their telephony systems and websites to ensure adequate capacity during severe weather events. This action should be completed by 30 September 2022.

Action 11: We will work with DNOs to develop additional reporting metrics for communication channels, such as websites, applications, and social media. We will confirm how these reporting metrics will fit within the RIIO-ED2 framework in our Final Determinations publication by 31 December 2022.

Action 12: We will review the incentive framework for customer service, in relation to call-backs, to ensure that it drives overall benefits for consumers. We will confirm any changes in our Final Determinations publication by 31 December 2022.

These actions will provide assurance that DNOs have telephony systems, website architecture and protocols that are capable of handling increased traffic during widespread power disruptions.

We also explored whether customers received an appropriate restoration time by their DNO and how they were updated when the circumstances changed. We found that 28% of

customers were given a restoration time that was not within 24 hours of their actual restoration time.

Action 13: We recommend that DNOs should improve their assumptions for estimating restoration times and improve the quality of their communication to customers, so that customers can make informed choices about meeting their needs. To be completed by 30 September 2022.

We received feedback from stakeholders and customers that it was not always clear what support was available to help customers affected by the power disruptions. There is a need to make improvements with regards to the roles and responsibilities between DNOs and Local Resilience Forums (LRFs) and communications around the welfare support.

Action 14: We recommend that DNOs, in consultation with local resilience partners, should develop principles-based industry guidance on best practice in the provision of welfare support. To be completed by 30 September 2022.

Action 15: We recommend that DNOs should work with local resilience partners to agree clear roles and responsibilities during severe weather events. To be completed by 30 September 2022.

Action 16: We also recommend that where DNOs are providing discretionary support (e.g. accommodation, hot meals), they should make clear to customers what support is available and how they can access it. DNOs should outline how this is being achieved in their winter preparedness reporting to BEIS and Ofgem. To be completed by 30 September 2022.

Support after the incident

We think that some DNOs were too slow in paying out compensation to customers that were eligible. We recommend that all DNOs should update their processes for obtaining customer data and develop more robust payment mechanisms capable of delivering payments at scale.

Action 17: DNOs to adopt lessons learned from 2021/2022 storms in their processes, to enable timely and accurate compensation payments to customers. To be completed by 30 September 2022.

Action 18: DNOs to develop more robust mechanisms to enable the delivery of compensation payments at scale. To be completed by 30 September 2022.

In our interim report we also said that we would examine the compensation cap arrangements under the current Guaranteed Standard of Performance⁹ (GSoP) and whether they need to be amended.

Action 19: We will commission a review of the GSoP for Severe Weather to identify amendments that will better acknowledge the impact of extended power cuts on customers. To be completed by 31 July 2022.

During Storm Arwen, DNOs agreed to lift the compensation cap of £700 to enable customers to be adequately compensated for the outages they endured.

Action 20: We recommend that until we implement any proposed changes from our GSoP review, DNOs should voluntarily lift the cap for future storms. To be completed by 31 July 2022.

⁹ These are set out in the Electricity (Standards of Performance) Regulations 2015

1. Introduction

1.1. The reliability of GB’s energy networks is a principal objective for Ofgem as the energy regulator. DNOs who own and operate the local electricity distribution systems, are required to design and operate their networks in accordance with relevant legislation, codes and standards. Where network companies act in breach of their obligations, we expect to take enforcement action to hold them to account.

1.2. This report presents key findings and recommendations from our Storm Arwen review. It builds on the initial findings from our interim report that we published in February 2022.

1.3. The scope of this review has focused on the response of the DNOs¹⁰ to Storm Arwen and covered the following areas, as set out in our terms of reference¹¹:

- Network resilience
- Planning and preparation
- Handling of incidents
- Communication and support during the incident
- Ongoing support after the incident

1.4. To inform our review, we gathered information through site visits to areas affected by Storm Arwen, meetings with each DNO, data requests to all DNOs, correspondence from affected customers and MPs who wrote to us on their behalf, a technical review commissioned by us, and consumer research.

1.5. We also engaged with a broad range of stakeholders and community representatives to gather information for the review, including Members of

¹⁰ The electricity distribution network carries electricity from the high voltage transmission network to industrial, commercial, and domestic users, as well as distributing an increasing quantity of power from generation sources that are connected directly to the distribution networks. There are fourteen electricity DNOs operating in GB, which are managed by six private companies.

⁶ <https://www.ofgem.gov.uk/publications/terms-reference-review-networks-response-storm-arwen>

Parliament, Members of the Scottish Parliament, Councillors, consumer groups, NHS Medical Alliance, and a trade union.

1.6. A full list of stakeholders is included in Appendix 2 of this report. We would like to thank all stakeholders and customers for their assistance.

1.7. Alongside this report we are publishing the following accompanying reports:

- Storm Arwen consumer research that we have undertaken to gain better understanding of some affected customers’ experiences
- A technical review of the DNOs’ preparedness and response to Storm Arwen, carried out by our consultants GHD¹².

¹² There are some differences in the data set out in this report and GHD’s report. This is because GHD’s report data was compiled from information requests made to DNOs in Dec 2021 and correct as of 21 Jan 2022. In this report, we’ve used data that was compiled by BEIS’ which was more up to date. These differences are minor and do not affect the findings of our consultant’s report.

2. Assessment of what happened

2.1. Storm Arwen brought severe winds to the UK between 26 and 27 November 2021, with the Met Office issuing a red warning for wind. Wind speeds widely reported to reach over 69mph with the highest gust speed measured to be 98mph in Northumberland. According to the Met Office, this was one of the most powerful and damaging winter storms of the last decade.

2.2. In this section we take a closer look at the damage caused by Storm Arwen and the impact it had on customers.

Impact on network infrastructure

2.3. Storm Arwen brought considerable damage to most DNO networks across the country; only UKPN and SSEN (SSES) were not significantly affected. In some areas, severe winds were accompanied by snow, ice, and rain. The damage resulted in over 9,700 faults which were primarily caused by strong winds and fallen or broken trees. A breakdown of faults by type is provided in Figure 1.

Impact on customers

2.4. Over one million customers lost power as a result of network faults and damage. The majority of customers were restored reasonably quickly, with 82% of customers reconnected within 24 hours. However, many customers endured longer power outage; around 40,000 customers were without supply for more than three days and nearly 4,000 customers were off supply for over a week. Figure 2 provides an indication of the scale of customer disruptions across GB, between 26 November and 28 November 2021.

2.5. According to our consumer research those who were affected by the outage for 48 hours or longer, reported a wide range of impacts, including:

- **Practical impacts** - some affected customers had no or reduced heating in their homes, which resulted in very cold temperatures, especially in older or poorly insulated properties. Some households that require electricity to power water pumps had no water supply for drinking, bathing or washing dishes.

Figure 1 – Breakdown of network faults by type

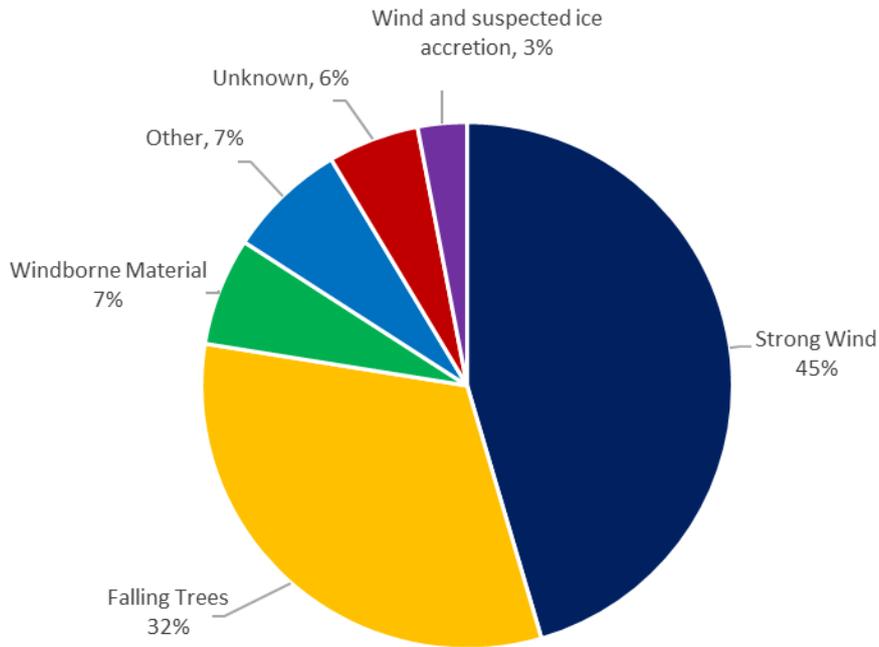
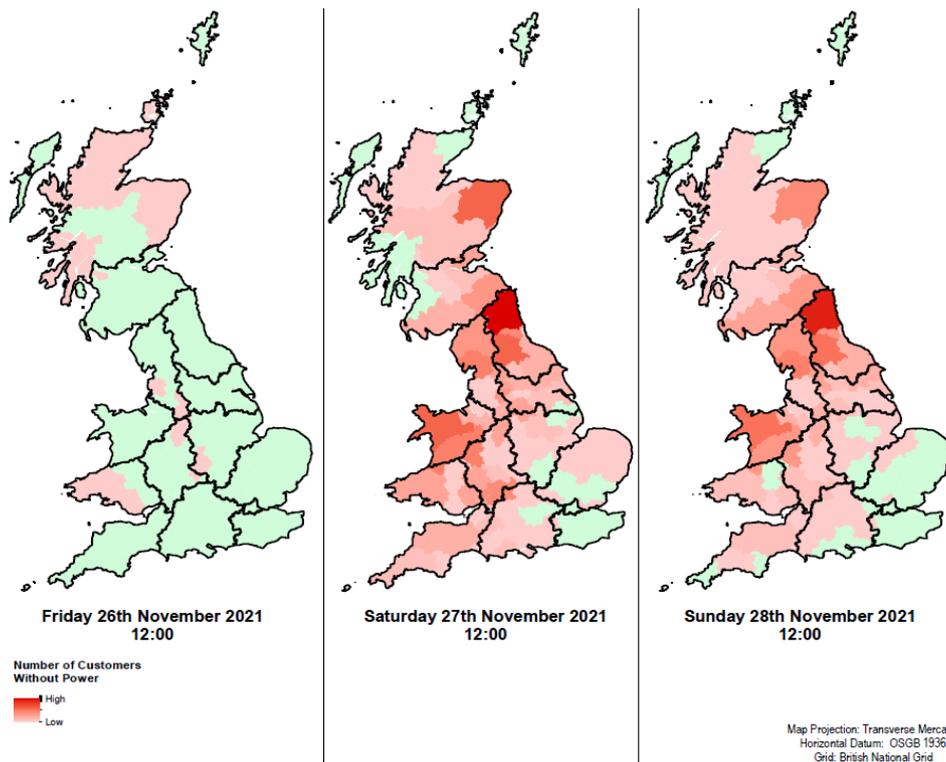


Figure 2 – Storm Arwen outages maps



- **Emotional impacts** – whilst some customers could deal with the inconvenience, for others it caused significant stress and anxiety.
- **Financial impacts** – for some affected customers, the extended outage led to financial loss including spoiled food in fridges/freezers, the need for additional spending on alternative heating, alternative cooking equipment, sustenance, or transport to access supplies.

3. Network Resilience

3.1. DNOs operate their networks according to licence obligations, industry codes and technical standards. Additionally, we set strong incentives which encourage DNOs to maintain reliable networks and minimise the number and duration of power outages, when they do occur.

3.2. In this section we consider the companies’ resilience activities during the current electricity distribution price control period (RIIO-ED1).

What customers and stakeholders told us

3.3. Storm Arwen should not be viewed as a one-off event, as has become evident from the subsequent storms of Barra, Corrie, Dudley, Eunice, and Franklin in January-February 2022. Network companies need to ensure there is ongoing work to minimise the impact of high winds on power lines, during storms events.

Overhead line poles¹³

3.4. A large number of customer faults were caused by high winds or trees being uprooted, falling onto overhead lines and snapping or pulling the poles down. As part of our review, we looked at the age and condition¹⁴ of wooden poles that were damaged.

3.5. There appears to be some correlation between damaged poles and their age. From the information provided by the DNOs, a significant number of damaged poles were over 40 years old, with the percentage varying between 50% (NPgN and NPgY) and 75% (SPD and SPMW) across the companies. There seems to be less correlation between damaged poles and their condition, with the percentage of

¹³ Please refer to section 4 of GHD’s Technical Review for more information.

¹⁴ The condition of wooden poles is assessed on signs of rot at the base and structural damage along the length. Poles are graded on a scale of 1-5 where 1 indicates that the asset is in new condition and 5 suggests that it is in a deteriorated condition and at increased risk of failure and future asset replacement should be planned.

damaged poles assessed to be in poor condition varying between 13% (ENWL) and 38% (SPD and SPMW).

3.6. We also found that there is a perception amongst stakeholders that overhead line pole failure rates have been increasing in recent years, but we do not have sufficient data at present to state whether this is the case or not. We think there is a need for further work to investigate if older poles are more susceptible to failure in abnormal weather conditions, and if so, develop the necessary policies to ensure that this feeds into DNO assessments of pole condition.

Recommendations

3.7. DNOs and Ofgem to commission a review into how pole health is assessed, to identify changes that will improve pole condition reporting. This review should:

- ascertain if older poles are more susceptible to failure in abnormal weather conditions;
- ascertain if pole failure rates are increasing;
- recommend changes to the schedule or assessment criteria of pole inspections.

This action should be completed by 30 July 2022.

Tree cutting¹⁵

3.8. In our interim report we said that we needed to explore how DNOs’ investment in tree cutting activities have been targeted. We looked at the DNOs regulatory financial reports to assess their spend on tree cutting to maintain safety clearances and their spend on tree cutting for resilience purposes. Figure 3 provides a comparison of this expenditure across all DNO licence areas.

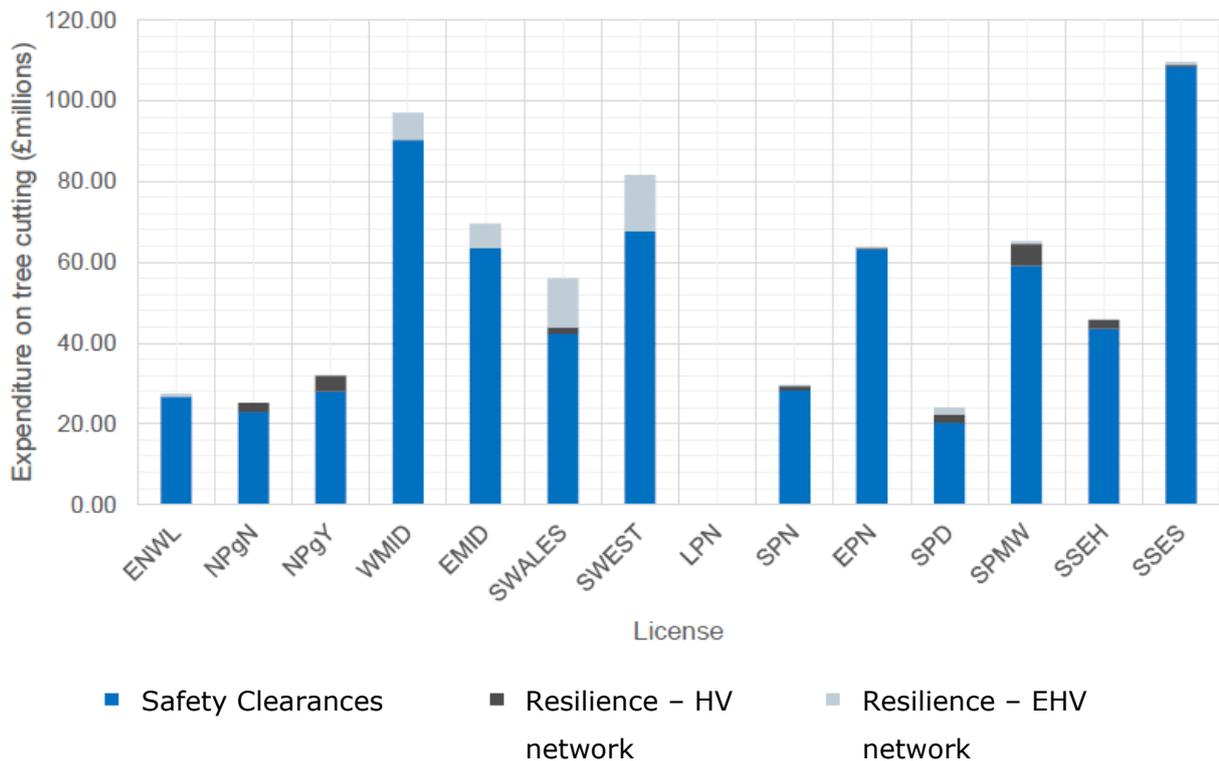
3.9. We found that the vast majority of activity in this area has focussed on tree cutting for safety clearances. This is aimed at preventing the public from coming into contact with overhead lines and experiencing harm. Activity in this area is driven by the need to ensure statutory compliance with the Electricity Safety,

¹⁵ Please refer to section 4 of GHD’s Technical Review for more information.

Quality and Continuity Regulations (ESQCR) and ENA Technical Specification 43-8, ‘Overhead Line Clearances’. This requires DNOs to maintain safety clearances of 0.8 – 3.6 m between live conductors and trees. With a typical mature tree height in the UK of between 10 – 20 m, activity in this area does not prevent trees from falling onto lines during severe weather.

3.10. Conversely, DNO tree cutting activity for resilience purposes is aimed at preventing vegetation such as trees from falling onto overhead lines and causing power outages. However activity in this area is directed by voluntary guidance¹⁶ which sets out a risk-based methodology to identify the most effective locations to carry out additional resilience related activities, including vegetation management.

Figure 3 – Comparison of tree cutting expenditure for safety clearances and for resilience purposes



3.11. Figure 3 also shows that some variation in the parts of the network DNOs focus their tree cutting activities on, with WPD and ENWL targeting their activities

¹⁶ Engineering Technical Recommendation 132, developed by the Energy Networks Association

on their extra high voltage networks. In Storm Arwen, the majority of faults (68%) occurred on the high voltage network. Whilst we recognise that DNOs may have implemented resilience measures other than tree clearance on their high voltage networks, some companies may want to review the benefit of undertaking further resilience tree cutting on these areas of their network.

3.12. There are a range of standards and guidance that set out the technical specifications or maintenance practices that DNOs should comply with when operating their networks. We think there is a need to review these standards and explore measures to reduce the impact of interference from trees to overhead lines.

Recommendations

3.13. E3C to review current distribution and transmission network infrastructure standards and guidance, including those for vegetation management and overhead line designs, to identify economic and efficient improvements that could increase network resilience to severe weather events. To be completed by 30 September 2022.

Organisational resilience

3.14. We also explored DNO approaches to organisational resilience and how this enables them to prepare for and respond to emergencies. UKPN highlighted that they work with the Emergency Planning College to assess their organisational resilience.

3.15. During Storm Arwen, we found that some DNOs had far fewer resources deployed initially, which may have affected the time taken to repair and restore supplies. In particular NPg (NPgN and NPgY) and ENWL had far less resources deployed in the early stages of the response.

3.16. We believe that best practice and learning on how DNO roles are organised is important and should be shared across all DNOs. Whilst British and international standards for organisational resilience already exist, we think there is benefit in developing a GB DNO specific organisational resilience standard which is focussed on improving the speed of customer restoration during storms.

Recommendations

3.17. E3C to assess the feasibility and benefits of developing a standard-based approach to organisational resilience to improve the speed of customer restoration during severe weather events. To be completed by 30 September 2022.

Overall network resilience

3.18. DNOs do not apply a specific single network resilience standard across their networks. Instead they are subject to a combination of network planning standards and regulatory incentives. Network planning standards set out the minimum levels of resilience that DNOs should adhere to at all times¹⁷ whereas incentives set targets for DNOs to meet and issue rewards and penalties depending on their performance against these targets¹⁸.

3.19. In addition to this, there are also a portfolio of technical specifications, British and international standards and guidance documents that support the DNOs in providing a reliable, resilient network; however, it is not mandatory for DNOs to apply all of these.

3.20. These standards and incentives focus more on preventing interruptions from occurring, rather than the service that customers can expect to receive during a power outage. An outcome-focused resilience standard could set Government and public expectations on restoration times and allow operators to plan and invest accordingly.

¹⁷ Primary network planning standard relating to network reliability is Engineering Recommendation P2/8 – Security of Supply. ER-P2/8 sets the minimum security of supply required for a particular area of network and is dependent on the magnitude (MW) of total demand within that area of network.

¹⁸ Primary incentives relating to network reliability and resilience, include the Interruption Incentive Scheme, which sets targets for the number and duration of power disruptions networks should experience each year, and the Guaranteed Standards of Performance (GSoP) which sets the level of compensation that customers should receive if they are off supply for unacceptably long periods of time.

3.21. Given the threat of increased severe weather as a result of climate change, we think it’s important that DNOs can clearly articulate the level of resilience consumers can expect for their investment in DNOs’ networks.

Recommendations

3.22. E3C to put forward proposals for an outcomes-focused physical network resilience standard, which sets public and government expectations on restoration times during power outages. To be completed by 30 September 2022.

4. Planning and preparation

4.1. All DNOs have detailed emergency plans which set out the processes and protocols that should be undertaken during events such as severe storms. This includes how and when to communicate with customers or thresholds for when to stand up additional staff, contractors or resources to assist the response. These plans have been developed over many years and have evolved after each incident.

4.2. As outlined in our interim report, we found that all DNOs were aware of the weather forecast ahead of Storm Arwen and actioned their emergency plans promptly. In this section we look at the effectiveness of DNO plans in responding to Storm Arwen¹⁹.

What customers and stakeholders told us

4.3. Stakeholders expressed the need for a multi-agency approach to planning and preparing for storms, including local storage of generators to allow for quick deployment, particularly in rural areas. One stakeholder highlighted the need to improve workforce resilience by deploying operational and non-operational staff more flexibly during severe weather events.

Winter preparedness plans for vulnerable customers

4.4. We looked at whether DNOs rolled out their winter preparedness campaigns to vulnerable customers who are enrolled on the Priority Service Register (PSR). These are aimed at raising awareness on what to do in the event of a power outage.

4.5. We found that most DNOs rolled out the winter preparedness plans they shared with us in 2021, including their campaigns to their PSR customers. These campaigns were communicated to customers through a range of media channels including radio and social media communications and leaflet drops.

¹⁹ Please refer to section 5 of GHD’s Technical Review for more information.

4.6. It has become evident that NPg did not contact any PSR customers directly as part of planned winter preparedness campaigns prior to Storm Arwen. This was only discovered through Ofgem’s information requests. We understand that other domestic customers were contacted with information on how to use NPg’s online power cut reporting service and the 105 emergency faults number.

4.7. We consider that having robust winter preparedness plans in place is an important part of the DNOs’ role to ensure all customers, including those in vulnerable situations, are effectively supported. We think that there is an enduring role for DNOs to submit elements of their winter preparedness plans to us each year.

Recommendations

4.8. We recommend that DNOs should submit their winter preparedness plans for 2022/23 to Ofgem. This will provide assurance that DNOs have taken the necessary steps to ensure that all customers, including those in vulnerable situations, can be effectively supported in power disruptions. This action should be completed by 30 September 2022;

4.9. We will confirm the scope of this report by 30 August 2022 and set out how DNO winter preparedness plans fit within the RIIO-ED2 framework in our Final Determinations document, by 31 December 2022.

5. Handling of incidents

5.1. During a widespread and severe storm such as Arwen, DNOs will identify the location and scale of faults through a combination of remote monitoring, customer reports and the use of helicopters or teams on the ground to assess damage.

5.2. In the first instance, DNOs will tend to prioritise resolving faults that are relatively simple to repair and will restore the greatest number of customers. This generally involves automatically reconnecting overhead lines or remotely transferring customers electricity supply from a faulty circuit to an alternative undamaged circuit, thereby restoring their supply.

5.3. Following this, DNOs will focus on resolving more complex faults, where there are no alternative circuits to switch customers supply to and where the network has sustained permanent damage e.g. broken conductors broken or snapped poles. These faults require the expertise of specialist resources to make the necessary repairs before customers can be restored. If the repair is expected to take a significant amount of time, customer supplies can in some cases be temporarily restored via the use of mobile generators.

5.4. In this section we consider network companies’ approach to identifying and restoring power supplies²⁰.

What customers and stakeholders told us

5.5. Customers were generally very supportive of operational staff and recognised that many had to work in challenging conditions. Customers perceived a lack of coordination between the DNOs and other support agencies in the provision of welfare support and in some cases the welfare offering did not meet their needs. There were a few cases where customers, including those on the PSR, had to drive long distances in poor weather conditions to food trucks provided by

²⁰ Please refer to sections 5 and 6 of the GHD Technical Review for more information.

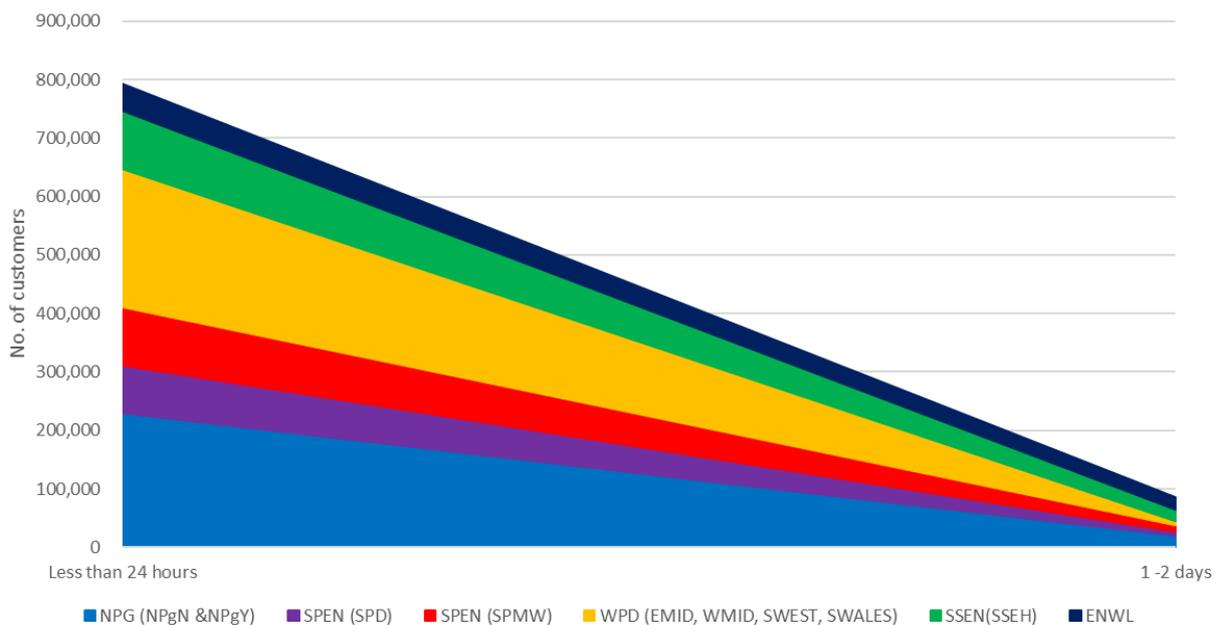
the DNOs. In addition to this, there were cases where emergency generators provided by DNOs ran out of fuel or failed due to mechanical issues.

Fault Management

5.6. We found that whilst all DNOs utilise broadly similar software systems and operational practices to manage network faults, there was a significant difference in the time it took DNOs to identify and repair faults.

5.7. Figure 4 shows the restoration profile of customers off-supply during the first 48 hours of Storm Arwen by DNO²¹ licence area. 93% of customers affected by Storm Arwen were restored within this time period.

Figure 4 – Customers off-supply for 0-48 hours, by licence area

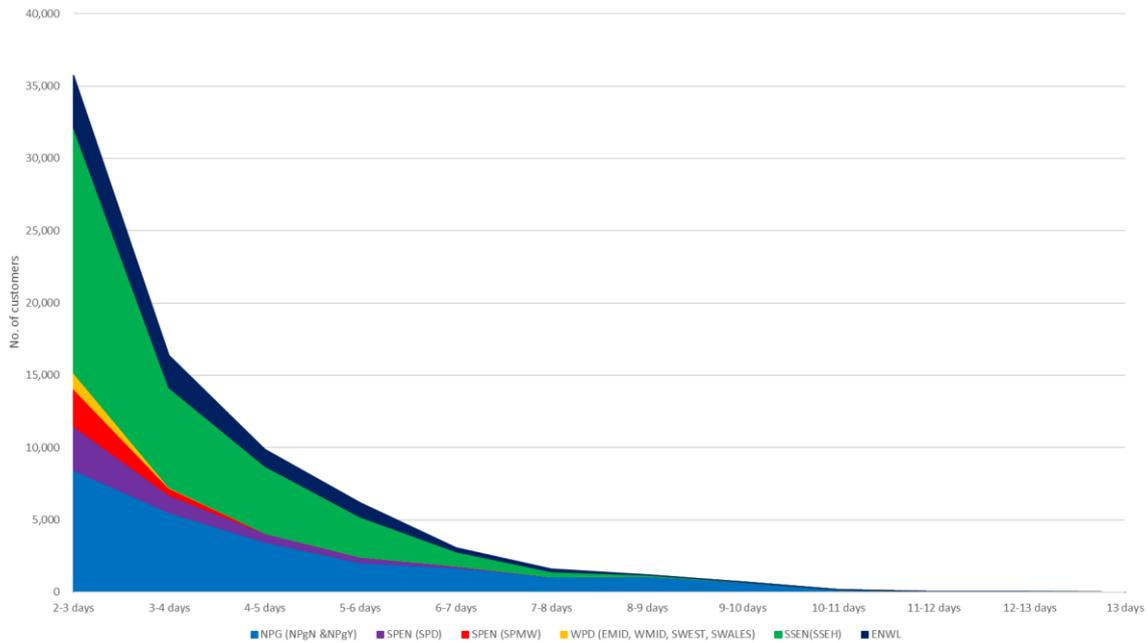


5.8. Figure 5 shows the restoration profile of customers off-supply for the rest of the response, by DNO licence area. This shows that NPg, SSEH and ENWL took much longer to restore their remaining customers than other DNOs, with over

²¹ Only DNOs that were significantly affected by Storm Arwen are included. UKPN and SSES have been excluded.

2,900 customers still off supply after 6 days and all customers restored within 13 days.

Figure 5 – No. of customers off-supply for 2 days or more, by licence area



5.9. Our engagement with DNOs indicates a number of reasons for these slow restoration times. Initially high winds prevented helicopters and aerial surveillance from assessing damage. These only became effective once wind speeds had reduced, 3 days into the storm.

5.10. Another key issue was the limited amount of remote monitoring on the lower voltage levels of these networks. This meant that DNOs were only informed of relatively small and localised faults when a customer contacted them to inform them of a power disruption. We think this hindered the DNOs from understanding the full scale and complexity of faults on their networks and impacted the number of resources they initially deployed to undertake repairs, restore power and support customers.

5.11. We believe that DNOs’ approaches to fault identification need to be improved as customer restoration times are dependent on identifying and assessing faults in a timely manner. Stakeholders and DNOs raised the future role of smart meters and their possible use in determining the level of network damage or to provide an accurate picture of customers of supply. Where smart meters have been rolled out

and where the DNOs have access to this data, we expect DNOs to utilise it to assist during severe weather events.

Recommendations

5.12. E3C to review and update industry best practice, for identifying faults and assessing the extent of network damage to reduce customer restoration times. This review should include the role of smart meter data and technology for this task. To be completed by 01 April 2023.

Resource Deployment²²

5.13. We also looked at the number of resources that DNOs deployed to address and repair the identified faults, for the duration of Storm Arwen. This includes field staff, engineers and contractors.

5.14. Generally, a higher number of faults will require greater resources to repair and restore supplies. We found that NPg and ENWL²³ had far fewer resources deployed initially at the outset of the storm compared to other DNOs. Whilst we note that DNOs will have differences in the size of their workforce due to factors such as the size of their licence area, both DNOs had less than 55 linesmen and field engineers available on the first day of the storm (26 November) whereas conversely SPEN had 445 resources deployed across both its licence areas (SPD and SPMW).

²² Please refer to section 6.3.1 of GHD’s Technical Review for more information.

²³ ENWL had all available internal teams and contractors deployed on the first day, and also requested external aid on the first day.

5.15. All DNOs increased their resource levels rapidly over the following days. The time taken for DNOs to achieve their peak staffing levels was largely driven by how long it took for additional contractors and NEWSAC²⁴ staff to arrive and assist.

NEWSAC arrangements²⁵

5.16. We found that the NEWSAC agreement worked well. Less affected DNOs (UKPN & WPD) sent resources to other DNOs at an early stage of the storm response. Also SPEN transferred staff from its electricity transmission business (SPT) to support staff in its distribution business (SPD). Staff were willing to travel long distances across the country to assist with rebuilding and repairing the network which is to be commended.

5.17. During the storm, NPg’s call centre received a large volume of enquiries and UKPN stepped in to provide some assistance. They provided NPg with call centre facilities and established a new process whereby UKPN’s call handlers were able to handle some outbound calls on behalf of NPg.

5.18. This arrangement was created at very short notice and is a good example of DNOs working together and providing support in emergencies. Whilst response to storms remains the responsibility of individual DNOs, we believe that such an arrangement may be a good addition to the NEWSAC arrangements.

5.19. We think that NEWSAC arrangements could be further enhanced by identifying how other parts of the energy industry, including electricity transmission and gas distribution operators, could support electricity distribution operators in major incidents, and vice versa.

Recommendations

²⁴ NEWSAC (North East West South Consortium) is a group set up to provide support during emergencies. Resources, such as manpower, vehicles, materials can be provided by any of the DNOs where one or more are impacted by an extreme event or an emergency.

²⁵ Please refer to section 6.3.2 of GHD’s Technical Review for more information.

5.20. E3C to identify other appropriate areas where mutual aid could be appropriately and effectively deployed, to reduce customer restoration times or enhance customer support. The E3C should also assess whether mutual aid agreements could be expanded to include other energy operators. To be completed by 30 September 2022.

Deployment of generators

5.21. In our interim report we found that the approaches that DNOs adopted in Storm Arwen, differed slightly. Our engagement with DNOs highlighted that these differences stem from the geography of DNOs licence areas (ENWL noted that some rural locations are unsuitable for large generator installation due to issues with transporting large and heavy equipment in these areas in storm conditions); and the number of trained staff available to install these.

5.22. SPEN (SPD and SPMW) utilised by far the most generators across their networks (311 at the peak), whereas SSEN (SSEH) used the least (72 at the peak). However during our engagement, both DNOs highlighted that the installation and maintenance of mobile generators is time consuming, and the resource required to temporarily supply customers with electricity via mobile generators needs to be balanced against the wider impact to the restoration efforts, particularly in areas of low customer density.

5.23. We recognise that DNOs need to assess the advantages and disadvantages of prioritising their resources on making network repairs against installing mobile generators. However some DNOs were able to install generators using other specialist staff such as jointers so that field engineers were not diverted from fault finding and repair activities. We think that DNOs should share best practice on the deployment of mobile generators in their licence areas and develop options to increase the flexibility of generator usage and their workforce to reduce customer restoration times.

Recommendations

5.24. E3C to identify options to enhance the use of mobile generators in reducing the length of power disruptions, covering the population of mobile generators held

by the DNOs and resourcing options to transport, install, refuel and remove. To be completed by 01 August 2022.

6. Communication and support during the incident

6.1. In this chapter we look at how well the network companies communicated with customers and stakeholders during Storm Arwen, in particular with customers in vulnerable circumstances.

What customers and stakeholders told us

6.2. Stakeholder feedback and our consumer research indicated that customers felt communication from DNOs during the incident was poor. Customers said it was very difficult to get in contact via phonelines, and NPg's websites went down due to the high volume of traffic. This meant that customers had difficulty accessing accurate information, as well as being unable to report power outages and network damage. An example of a customer experience is below:

"The website was hit and miss so we were in the dark about what was going on. A couple of times it gave a time but the power didn't come on and we were just waiting again. It got our hopes up and then they were dashed." (Affected by a 2.5-day outage)

6.3. One of the biggest issues customers faced related to communication around estimated time of restoration (ETR). An example of a customer experience is below:

"If they had said from the outset that it could take 4, 5 or 6 days people would have made better, safer and more informed choices." (Affected by a 6-day outage)

6.4. Stakeholders highlighted the need to review how the PSR is maintained and used during storms. There were customers who were on the PSR but received no contact from their DNO (NPg) other than automated SMS messages.

Contact centres

6.5. In our interim report we said that we would look at the availability of phonelines and whether customer enquiries were dealt with in a prompt and efficient manner in accordance with DNOs' licence conditions: SLC 8.3 (b), reports

and enquires processed in prompt and efficient manner and SLC 8.3 (c), Phonelines/Call Centres must be available at all times.

6.6. We found that all DNOs’ phone lines were available for the duration of Storm Arwen, excluding NPg’s service which experienced a three-hour interruption. Ofgem have resolved concerns in relation to a potential breach of SLC 8.3 (b) and (c) with NPg through alternative action through the £7.69m alternative action package agreed, which includes provision for the communication issues with customers identified above.

6.7. The performance of DNO customer call centres varied, with average call wait times between 1-36 minutes. Many customers had to wait longer than this to speak to a call centre agent, with the longest recorded wait time of just under 6 hours (NPg).

6.8. Table 1 provides an overview of the maximum number of staff each DNO had manning their customer call centre during Storm Arwen, as well as total number of calls received, average and maximum call wait times and total no. of abandoned calls.

Table 1 – customer call centre data for period 26 November to 03 December inclusive.

DNO	Maximum staff numbers	Average call wait time (HH:MM:SS)	Maximum call wait time (HH:MM:SS)	Total calls received	No. of abandoned calls ²⁶
ENWL	40	00:07:35	02:05:32	77,223	8,177
NPg	85	00:36:26	05:55:19	64,323	27,859
WPD	96	00:01:14	01:30:42	98,745	14,848
SPEN	90	00:05:09	01:40:09	137,533	33,171
SSEN	56	00:11:46	01:55:34	125,572	14,534

²⁶ This should include all calls that do not reach the DNO specified line, all calls that are terminated by the DNO, the total number of calls abandoned by customers in the queue and where a customer has heard a message and is given the option to be called back by an agent, customers who opt for a call-back but the time taken to make that call back is greater than 60 minutes.

6.9. The percentage of calls that were abandoned (either by the DNO or by the customer) varied, with NPg having the highest rates of call abandonment (43%). NPg has advised that their high call abandonment rate was caused by a combination of factors. Their website was unavailable between 21:15 on 26 November and 12:30 on 27 November. This led to customers contacting NPg by telephone to report a power cut or receive information on their restoration time, instead of keeping up to date via their website. NPg advise that the local telephony network was unable to deal with the additional volume of calls which resulted 4,322 customer calls being terminated.

6.10. We also investigated whether companies used customer call back functions during the storm period²⁷. We found that 3 out of the 5 companies that were significantly affected by the storm did have a call-back function (SPEN, SSEN and ENWL).

6.11. DNOs are incentivised to minimise the number of calls that are ‘unsuccessful²⁸’ and a call is deemed unsuccessful if the customer has requested a call back, but the time taken to make that call back is greater than 60 minutes. During the storm, ENWL switched off their call back function, whilst SPEN and SSEN kept this function available, despite receiving higher call volumes. We think it’s vital that DNOs do not put their own commercial interests ahead of customers’ needs in emergency situations such as severe storms.

6.12. In relation to vulnerable customers, most DNOs confirmed that they have systems in place to automatically detect PSR customers by either matching their telephone number or address to their records. These customers are prioritised and placed at the front of any agent queue. DNOs also noted that they also have an additional dedicated PSR phonenumber in place which PSR customers can call should they need extra support. SSEN was the only company to report that it does not currently have a system in place to automatically detect and prioritise PSR

²⁷ This function gives customers the option of requesting for a call back from the DNO, rather than remaining on hold in the customer queue.

²⁸ For every 1% of calls that are unsuccessful, DNOs are penalised 0.02% of their annual base revenue.

customers who call them from the 105 number or directly to the call centre. Instead, SSEN provides its PSR customers a separate number to call and these calls are prioritised.

Recommendations

6.13. E3C to update reasonable worst case scenario planning assumptions for customer call volumes. To be completed by 01 August 2022

Websites

6.14. Many customers tried to access information about their power supply via DNO websites, with over 2.5 million unique visitors to these sites over the storm period. Most DNO websites coped well with this capacity and experienced no wait times associated with accessing the relevant webpages.

6.15. However, NPg confirmed that its website struggled to handle the volume of traffic experienced which led to the site being unavailable between 21:15 on 26 November and 12:30 on 27 November. Additionally, customers had an average actual wait time of approximately 3 minutes between 09:00 and 23:00 on 29 November.

6.16. Ofgem requires annual reporting from DNOs on their average telephone response times. This is to ensure that DNOs answer customer calls quickly and minimise the number of calls that are ‘unsuccessful’. Noting that customers are increasingly inclined to access information via websites or apps, we think it’s important that DNOs undertake similar reporting for customers who try to get information or get in touch with their DNO through other channels such as social media and websites.

Recommendations

6.17. DNOs to stress test customer communication architecture, including website capability and call centre processes against updated planning assumptions, to ensure adequate capacity during severe weather events. To be completed by 30 September 2022

6.18. Ofgem and DNOs to develop additional reporting metrics for communication channels, such as websites, applications, and social media. We will confirm how these reporting metrics will fit within the RIIO-ED2 framework in our Final Determinations publication by 31 December 2022.

6.19. We will review the incentive framework for customer service, in relation to call-backs, to ensure that it drives overall benefits for consumers

Estimated Time of Restoration

6.20. In our interim report, we said that we would explore further if customers received an appropriate restoration time and how they were updated when the circumstances changed.

6.21. We found that 28% of customers were given a restoration time that was not within 24 hours of their actual restoration time, with the worst affected customers being restored 12 days after their estimated restoration time.

6.22. The approach to providing an estimated restoration times varied amongst DNOs; however our customer research and stakeholder feedback shows that customers prefer knowing the worst-case scenario and being kept up to date with progress. We recommend that DNOs develop their assumptions for estimating restoration times to improve their accuracy, so that customers can make informed choices about meeting their needs.

Recommendations

6.23. DNOs to improve their assumptions for estimating restoration times and improve the quality of their communication to customers, so that customers can make informed choices about meeting their needs. E3C to coordinate sharing of lessons learned and developing and/or updating good practice guidance. To be completed by 30 September 2022.

Roles and responsibilities of DNOs in severe weather

6.24. BEIS and the Scottish Government highlighted the need to make improvements with regards to the information shared between DNOs and Local Resilience Forums (LRFs), and the roles and responsibilities between DNOs and

LRFs during severe weather events. Based on the feedback we have received from customers and stakeholders, we agree that the roles of the DNOs in providing welfare support to the affected customers need to be made clearer.

6.25. In addition, we received customer feedback that DNOs need to improve their communication around the welfare support that they are providing, as it was not always clear what was available in each of the affected areas.

Recommendations

6.26. DNOs, in consultation with local resilience partners, to develop principles-based industry guidance on best practice in the provision of welfare support. To be completed by 30 September 2022.

6.27. DNOs to work with local resilience partners to agree clear roles and responsibilities during severe weather events and incorporate them into the DNOs' Emergency Plans. To be completed by 30 September 2022.

6.28. Where DNOs are providing discretionary support (e.g. accommodation, hot meals), DNOs should make clear to customers what support is available and how they can access it. DNOs should outline how this is being achieved in their winter preparedness reporting to BEIS and Ofgem. To be completed by 30 September 2022.

7. Support after the incident

7.1. In this chapter we consider the speed and effectiveness of the network companies in making compensation payments to the affected customers.

What customers and stakeholders told us

7.2. Overall, we have received mixed responses regarding compensation payments. Some were satisfied with the compensation they received, with a few customers stating that it exceeded their expectations. An example of a customer experience is below:

"I couldn't believe it. We weren't expecting anything." (Affected by a 4-day outage, eligible for the PSR)

7.3. However, during planned engagement activities we held with the affected customers in February 2022, we heard directly from several customers who had still not received accurate compensation payments.

7.4. A number of the affected customers involved in our consumer research also reported that there was no explanation provided on how their compensation amount was calculated, which raised questions about the transparency and accuracy. An example of a customer experience is below:

"It didn't actually make sense what we got. I don't even know how they worked this out." (Affected by a 5-day outage, on the PSR)

Compensation payments

7.5. In our interim report, we said that we would explore the causes for slow compensation payments to customers.

7.6. We found that all DNOs made good progress through December 2021 to make the necessary payments to customers for whom they hold records. However,

some DNOs, namely NPg, SSEN and ENWL took more time to make the necessary compensation payments to customers for who they do not hold any records.

7.7. These DNOs told us that part of the reason for this was because they are reliant on energy suppliers for accurate customer data. Where this data was not available, we understand that the DNOs had to make several attempts (e.g. through letter correspondence or household visits) to successfully obtain the details of customers for whom they or energy suppliers, did not hold any records.

7.8. We think that there is scope for improvements to be made by DNOs to the process of obtaining customer data for paying compensation and recommend that DNOs and Ofgem should explore options for improving the accuracy of customer data, to make the process for compensation payments more efficient.

7.9. We also found some good practice that increased awareness amongst affected customers of the compensation available and how to access it, which helped in identifying affected customers’ details. For example, SPEN launched national and regional advertisement campaigns quickly after the storm which utilised and explained what compensation was available to customers and how to claim it. They also set up dedicated compensation phone lines and mailbox for customer queries. We encourage DNOs to share good practice and consider implementing similar approaches.

7.10. In our interim report, we also said that we would examine the compensation cap arrangements and whether they need to be amended. We found that lifting the £700 cap enabled customers who were off supply for long periods to receive payments that reflected the greater level of inconvenience experienced over time. We also found that some customers did not feel that the £70 payment per 12-hour period off supply adequately reflected the inconvenience they faced or the duration of the outage.

7.11. We think it’s vitally important that customers who have experienced extended outages are promptly paid accurate compensation that reflects the inconvenience they experience. Therefore, NPG, SSEN and ENWL have agreed to alternative action to ensure that customers who were off supply for long periods of time during Storm Arwen, receive additional compensation and benefits.

7.12. Additional compensation to customers worst affected is included within the £10.28 million alternative action package that has been agreed. Some of this will be paid as enhanced compensation directly to those affected, through contributions to consumer charities working to support the communities that were affected and into network upgrades to minimise the impact of future storm events.

Recommendations

7.13. DNOs to adopt lessons learned from 2021/2022 storms in their compensation payment processes, to enable timely and accurate compensation payments to customers. This should include a review and an update to the process of obtaining customer data and consider options to enable customers to automatically receive direct compensation. To be completed by 30 September 2022.

7.14. DNOs to develop more robust payment mechanisms capable of delivering payments at scale. Energy Networks Association to consider how data-led approach using smart meter data could improve the accuracy of compensation payments. To be completed by 30 September 2022.

7.15. Ofgem to commission a review of the GSoP for Severe Weather to identify amendments that will better acknowledge the impact of extended power cuts on customers. This review should include:

- Assessing if a compensation cap is still appropriate and, if so, what the right level is;
- Consideration of the current payment structure and develop alternative options e.g. inclining payments.
- Assess whether the thresholds for different storm categories are fit for purpose;
- Developing options for improving the accuracy of customer data, to make the process for compensation payments more efficient

To be completed by 31 July 2022.

7.16. During Storm Arwen, DNOs agreed to lift the compensation cap of £700 to enable customers to be adequately compensated for the outages they endured. We recommend that until we implement any proposed changes from our GSoP review,

DNOs should voluntarily lift the cap for future storms. To be completed by 30 June 2022

8. Next steps

8.1. In this report we have set out findings of our review and identified a clear package of recommendations. These are summarised in Appendix 1. Some recommendations will take time to complete, but there is plenty of room for improvement ahead of the next storm season this winter. We expect DNOs to provide an update on the implementation of these recommendations ahead of next winter. Where recommendations are joint for Ofgem and DNOs to deliver, we will be in touch with the DNOs to discuss how to progress these.

8.2. Severe weather events are likely to become more common, as the effects of the climate change are felt, so it is imperative that all DNOs are well prepared. All DNOs have areas for improvement, and it will require coordination and collaboration amongst them to implement the recommendations effectively. This is an opportunity that the DNOs must seize and show improved performance in future severe weather events.

8.3. We recommend that DNOs engage with their customers and stakeholders to explain how they have implemented and progressed the package of recommendations from this report ahead of this winter.

8.4. We will continue to use all the tools in our regulatory toolkit to hold DNOs to account in delivering for their customers.

Appendix 1: Summary of Recommendations

No.	Recommendation	Owner	Due
1	E3C should review current network infrastructure standards and guidance, including those for vegetation management and overhead line designs, to identify economic and efficient improvements that could increase network resilience to severe weather events.	E3C	30 September 2022
2	DNOs and Ofgem should commission a review into how pole health is assessed, to identify changes , to identify changes that will improve pole condition reporting.	DNOs and Ofgem	30 July 2022
3	E3C should assess the feasibility and benefits of developing a standard-based approach to organisational resilience to improve the speed of customer restoration during severe weather events.	E3C	30 September 2022
4	E3C should put forward proposals for an outcome-focused resilience standard which could set Government and public expectations on restoration times during power outages.	E3C	30 September 2022
5	DNOs should submit winter preparedness plans for 2022/23 to Ofgem by 30 September 2022. Ofgem will confirm the scope of this report by 30 August 2022 and set out how DNO winter preparedness plans fit within the RIIO-ED2 framework in its Final Determinations publication by 31 December 2022.	DNOs	30 September 2022
6	E3C should review and update industry best practice for identifying faults and assessing the extent of network damage, to reduce customer restoration times.	E3C	01 April 2023
7	E3C should identify other appropriate areas where mutual aid could be appropriately and effectively deployed to reduce customer restoration times and enhance customer support during power outages.	E3C	30 September 2022
8	E3C should identify options to enhance the use of mobile generators in reducing the length of power disruptions.	E3C	01 August 2022

9	E3C should review and update “reasonable worst-case scenario” planning assumptions for customer call volumes.	E3C	01 August 2022
10	DNOs should stress test their telephony systems and websites to ensure adequate capacity during severe weather events.	DNOs	30 September 2022
11	Ofgem should work with DNOs to develop additional reporting metrics for communication channels, such as websites, applications, and social media. Ofgem will confirm how these reporting metrics will fit within the RIIO-ED2 framework in its Final Determinations publication.	DNOs and Ofgem	31 December 2022
12	Ofgem should work with DNOs to review the incentive framework for customer service, in relation to call-backs, to ensure that it drives overall benefits for consumers. Ofgem will confirm how these reporting metrics will fit within the RIIO-ED2 framework in its Final Determinations publication.	DNOs and Ofgem	31 December 2022
13	DNOs should improve their assumptions for estimating restoration times and improve the quality of their communication to customers, so that customers can make informed choices about meeting their needs	DNOs	30 September 2022
14	DNOs, in consultation with local resilience partners, should develop principles-based industry guidance on best practice in the provision of welfare support.	DNOs	30 September 2022
15	DNOs should work with local resilience partners to agree clear roles and responsibilities during severe weather events.	DNOs	30 September 2022
16	Where DNOs are providing discretionary support (e.g. accommodation, hot meals), they should make clear to customers what support is available and how they can access it. DNOs should outline how this is being achieved in their winter preparedness reporting to BEIS and Ofgem.	DNOs	30 September 2022
17	DNOs to adopt lessons learned from 2021/2022 storms in their processes, to enable timely and accurate compensation payments to customers.	DNOs	30 September 2022

18	DNOs to develop more robust mechanisms to enable the delivery of compensation payments at scale.	DNOs	30 September 2022
19	Ofgem to commission a review of the Guaranteed Standards of Performance (GSoP) to identify amendments that will better acknowledge the impact of extended power cuts on customers.	Ofgem	31 July 2022
20	Until any proposed changes from the GSoP review are implemented, DNOs should voluntarily lift the cap for future storms	DNOs	31 July 2022

Appendix 2: Stakeholders

We thank each of the following stakeholders for providing information to help inform our review. We also thank to all the customers who contributed either through direct communication with us or through our customer research. The following stakeholders agreed for their names to be published as part of this report.

- Rt Hon Anne-Marie Trevelyan MP for Berwick-upon-Tweed
- Emma Rodrick MSP for Highlands and Islands
- Guy Opperman MP for Hexham
- Rt Hon Kevan Jones MP for North Durham
- Mary Kelly Foy MP for City of Durham
- Rosie Cooper MP for West Lancashire
- Simon Fell MP for Barrow and Furness
- Tim Farron MP for Westmorland and Lonsdale
- Richard Holden MP for Northwest Durham
- Citizen’s Advice
- Prospect Trade Union