



Business Plan Commitments Report

2023/24

We are proud to be the team that provides the North East, Yorkshire and northern Lincolnshire with the electricity network that powers everyday life for more than eight million people. It has never been a more exciting time in our industry as we drive net zero forward and support our customers in their decarbonisation journey.

Taking a positive step forward in the first year of the 2023-28 period

I'm pleased to report good progress in delivering the promises we made to customers in our ambitious plan for 2023-28. Perhaps most notable are the service improvements we've made for our customers, particularly in connections. We've seen some encouraging progress at both the smaller-scale domestic level and in the major connections arena, where we have been engaging with our customers to find local solutions to some of the extended connection dates caused by constraints on the transmission network.

Behind the scenes, we have been ramping up our activities that support decarbonisation, whilst we re-engineer our investment plans to deliver in line with the efficiency challenges set by our regulator. That means the profile of investment and outputs won't be a straight line over the five-year period, and that's what the first-year shows. We are on track for delivering on 68 of our 83 commitments. We are behind on 15 of our commitments and we have plans in place to recover that position. We have also delivered 11% of our network asset risk metric delivery and expect this to accelerate steadily in the later years of our plan. We expect that to coincide with national policy looking to further accelerate the pace of progress towards net zero.

Delivering an outstanding service for our customers

We are very pleased to report significant progress in our customer service performance. Our customers are telling us they are feeling the benefits of us increasing resources in key areas, upskilling our existing teams, and upgrading our online services. A good example is a new self-service tool for connections and an upgraded power cut map. This has helped us deliver a 1.8% year-on-year improvement to score 90% satisfaction, and we continue to improve with the January-March period scoring above 91% satisfaction.

This has been mirrored in connections, which has been one of our focus points given the critical role we play in facilitating the uptake of low carbon technologies. We have delivered a 50% improvement in our quotation speed and 24% improvement in delivery time for single premises connections and service alterations to allow customers to install heat pumps, solar panels and electric vehicle chargers in their properties.

Leading the drive towards decarbonisation

In the major connections space, particularly the connection of low carbon generation, we have been working hard with others in the industry, and Ofgem, to address an issue of national importance – helping to ease the impact of constraints on the transmission network caused by a connections queue that includes a lot of speculative projects that are holding up those that are ready to deliver. Our new processes are accelerating connections that are ready, ahead of those that are not. Where we have been able to do that, the connection dates have come forward by an average of seven years. However, much more needs to be done across the industry to enable the UK to meet its net zero target and our customers can count on us to play a key part in that national work – and bringing the benefits of it to our region.

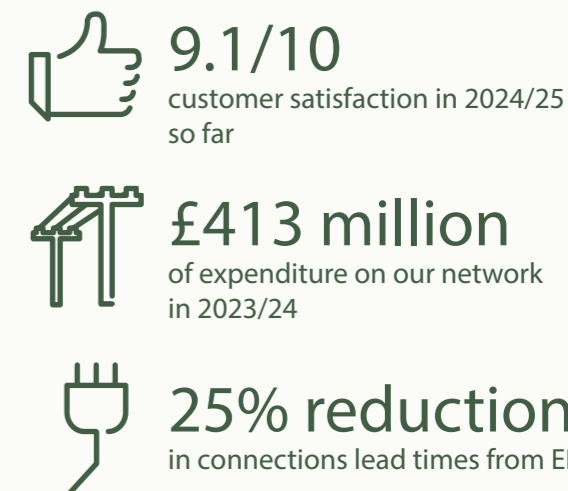
Operating a highly reliable and resilient network

Despite the significant progress in many areas, an unusually wet year, including nine consecutive months of higher-than-normal rainfall in our Yorkshire region, added to seven named storms, made for a challenging year on the network reliability front. Customers still experienced 99.99% availability, but we want to see that improve. We have made good progress on investments that will help to make that happen; we have increased pole replacement by 50% in the year, deployed 1,300 new remote switches, and conducted vegetation cuts across 1,850km of network.

There is still more to do, and 2024/25 will see us increase our capability, particularly out of hours, across both our own workforce and our contractors. This will be supported by improvements in technology to provide customers with better information when they do have a power cut.

Encouraging sustainable and long-term investment

Our investor's long-term outlook provides financial stability that our stakeholders deserve. We are consistently one of the most financially resilient companies in the sector. Our owner looks to invest in support of decarbonisation across our region for a fair and balanced return that delivers for customers for the long term.



Phil Jones
President & CEO

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Back in 2021, we published [Our Business Plan for 2023-28](#). This plan set out what we aim to achieve in this five-year period. This report, designed for customers and stakeholders, sets out what we have achieved in the first year of the price control from April 2023 to March 2024 and the progress we have made in delivering on the commitments we made in our business plan.

Introduction

Delivering a sustainable network

Maintaining a safe and resilient network

Meeting the needs of consumers and network users

Enablers

Annex



Who are Northern Powergrid?

We are proud to provide an essential service to eight million people in our region. We take that responsibility seriously and believe that our customers should get a service that is second to none. In short, our aim is to be the best at what we do.

Our customers pay their energy supplier for the electricity they use. A proportion of the money they pay as part of their electricity bill (around 8% of the bill) comes to us to cover the cost of keeping the network running safely, reliably and efficiently.

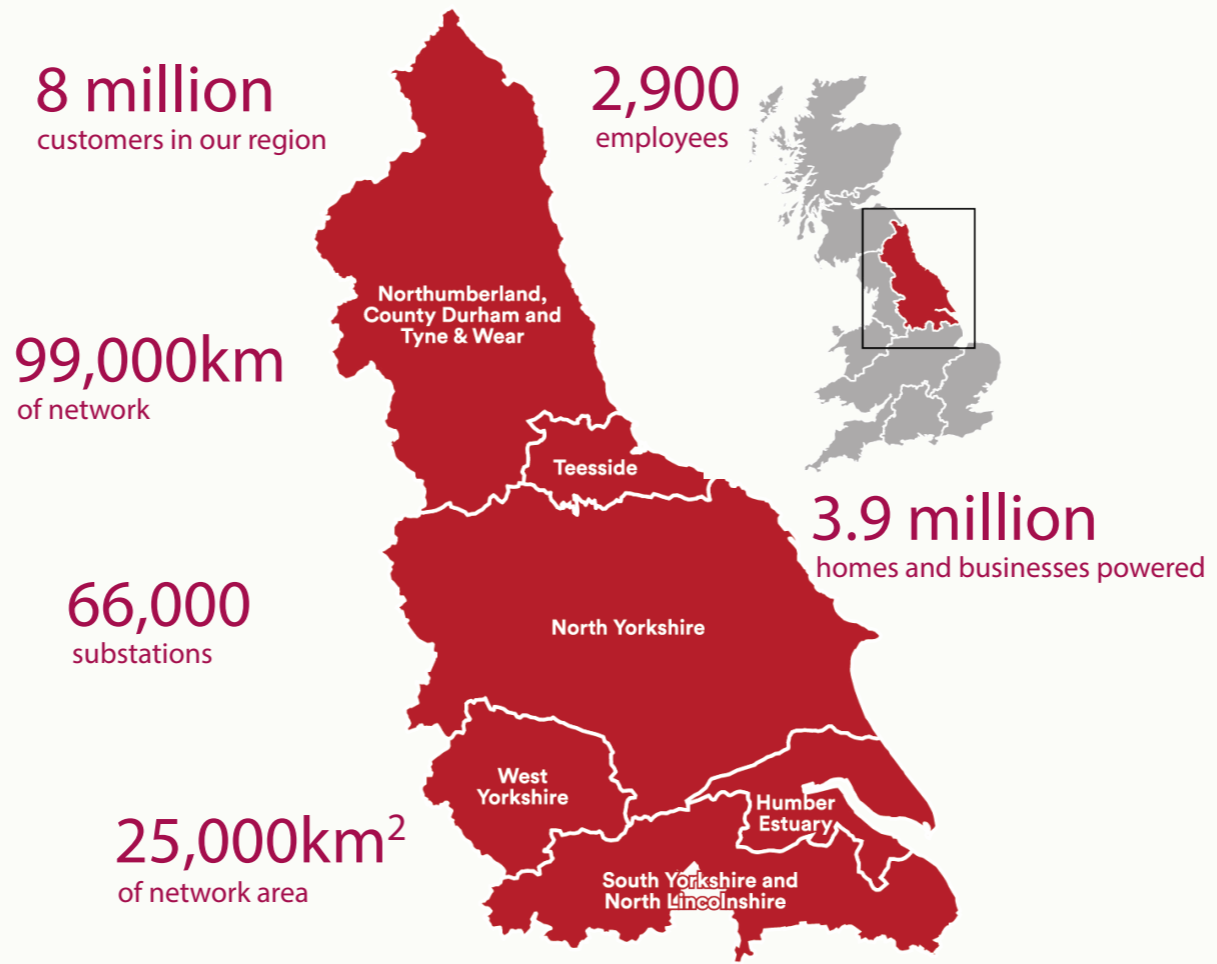
Our customers

We're committed to looking after our customers and you'll read in this report about what we're doing to improve customer service, support our local communities, and look after vulnerable customers when they need us the most.

Our region

We are proud of the vital role that Northern Powergrid plays in the infrastructure of the North of England, including enabling national schemes such as the TransPennine rail upgrade.

We play an active role in supporting the development of the regional growth agenda through our support of Business North, our sponsorship of the Northern Energy Taskforce, and through our Infrastructure North utility partnership with Northern Gas Networks, Yorkshire Water and Northumbrian Water.



Ensuring decarbonisation in our region is key

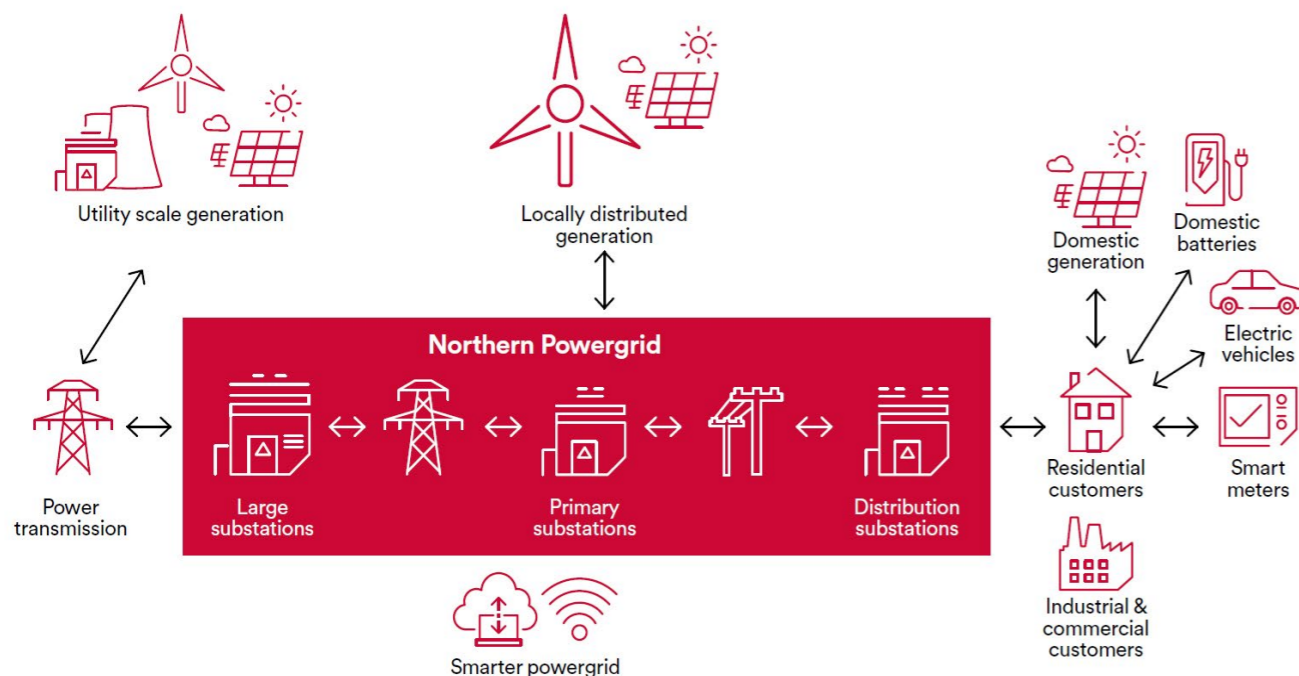
We are currently delivering the plan we set out for the five-year period from April 2023 to March 2028. The plan was built through an extensive engagement programme and our stakeholders have been clear that ensuring our region can decarbonise is key. We're responding with a significant step up in investment - providing increased digitalisation and smart grid solutions as well as significant amounts of new capacity to cater for growth in Low Carbon Technologies.

As part of that plan, we have embarked on a transition to expand our capabilities and become a local optimiser of the energy system. We have a key role to play in facilitating regional decarbonisation by fulfilling the functions of Distribution System Operation (DSO).

As we move to a low-carbon economy, new technology and digitisation are driving unprecedented change in the way energy is created and used. As an electricity infrastructure provider, we need to make sure that our network is able to safely and securely support these changes whilst maintaining high standards of reliability for our customers.

You can read more on how Northern Powergrid will deliver a network ready for the future in [our plan for 2023-28](#).

How the electricity gets to your door:



Our performance in 2023-24

We have made good progress in the first year of the 2023-28 period to deliver on our ambitious plan - the key improvements have been in customer satisfaction and connections where we have taken a step forward in delivering a better service for our customers.

Despite the significant progress in many areas, we have had a challenging year on the network reliability front with nine consecutive months of higher-than-normal rainfall in our Yorkshire region and seven named storms - though customers still experienced 99.99% availability, we want to see that improve.

Safety

Our long-term safety performance is strong and places us amongst the strong performers in our industry. We maintained full compliance with all HSE measures.

Environmental impact

We published our [Annual Environment Report](#) alongside this report on the 31st October 2024. We have continued to make progress towards achieving net zero operations by 2040.

Community outreach

Our 2023/24 aggregated customer satisfaction score for our fuel poverty support programme stood at 9.4 out of 10 and for low carbon technology support was 8.9 out of 10.

Vulnerability

Our [Annual Vulnerability Report](#) for 2023/24 was published on 31st July 2024.

Distribution system operation

We published our first [DSO Performance Panel Submission](#) - our performance panel score for 2023-24 was 6.6 out of 10 and our stakeholder satisfaction score was 7.8 out of 10.

Innovation

We spent £2.9m across 34 dedicated innovation projects. These projects are expected to deliver benefits to our customers of £250m in ED2 and beyond.

		Actual	Status	Trend	Comment
Network	Number of customers	3.9 million			
	Total network length	98,953km			
Safety	OSHA incident rate	0.34	●	◀▶	Our OSHA accident rate was disappointing with nine incidents in the year although the majority of these incidents were minor.
	Preventable vehicle accidents	29	●	▲	We continued a strong performance with one accident for every 550,000 miles driven.
Reliability & Availability	Customer interruptions (including exceptional events)	54.9	●	◀▶	A high number of storms and an abnormally wet year impacted our reliability & availability, with nine consecutive months of higher-than-normal rainfall in Yorkshire and 51% higher than-normal rainfall in the Northeast in the second half of the year.
	Customer minutes lost (including exceptional events)	55.1	●	▲	
Customer Satisfaction	Broad measure of customer satisfaction	9.0 out of 10	●	▲	We have delivered a 1.8 percentage point year-on-year improvement in overall customer satisfaction to 9.0 out of 10 and continue to improve in 2024 - currently scoring 9.1 out of 10.
Connections	Time to quote	3.7	●	▼	We have made significant improvements to our connections performance through reducing our end-to-end lead times by 25%.
	Time to connect	30.1	●	▼	
	Number of completed connections	23,697			Our connections customer satisfaction score has also improved substantially, increasing by 3.7 percentage points to 9.0 out of 10.
	Customer satisfaction	9.0 out of 10	●	▲	
	Major connections satisfaction	7.9 out of 10	●	-	Our Major Connections Annual Report for 2023/24 was published on 31st July 2024
	Average reduction in lead-times (Transmission constrained customers)	7 years	●	▲	Average reduction in lead-times for transmission constrained customers when accelerated connections offer is made.
Financials	Unrestricted domestic tariff charge	£83.72			In the first year of the 2023-28 period our expenditure was 9% higher than prior year but 20% below phased totex allowances. The underspend was driven primarily by:
	Total expenditure	£413 million			- Re-engineering to deliver the outputs we committed to at the lower level of allowed costs provided by Ofgem;
	Percentage of allowed expenditure	79.6%			- Mobilisation of new programmes and contracts; and - Connections (driven by customers) within our allowances were 88% lower than anticipated.

Explaining our costs

We continue significant investment in our network, we have been ramping up resources and capacity during the first year of ED2 (the 2023-28 price control period) to ensure we can facilitate decarbonisation in our region in the long-term.

Keeps costs low for our customers

Northern Powergrid is the distribution network operator for Yorkshire and the Northeast, and part of the bill that you pay to your supplier comes to us. The remainder goes to the cost of the energy in the first place, their operating costs, government environmental and social schemes, and other network like the transmission network and gas networks.

Our portion of the bill is around 8% for the average dual-fuel domestic customer, and our allowances and the recovery of those through the bill are set by Ofgem. That doesn't stop us wanted to keep costs low for our customers, and ensuring we keep within allowances while still delivering all that is required to both improve the network and create capacity for decarbonisation is one of the most critical parts of what we do.

Investing in our network

Investment in the network is the most significant way we spend money at Northern Powergrid, with a total of £143m invested in 2023/24. That means either investing in support of increased load, such as supporting decarbonisation in our region, or improving the network to reduce the number of faults that you experience. Our general load reinforcement was in line with the allowances of our plan, meaning we continue to manage load risks effectively.

Keeping the lights on

The next most significant group of costs goes towards operating the network, ensuring that we can keep the lights on 24/7, 365 days a year. That includes conducting repairs, cutting trees to prevent encroachment, inspections, and repairs & maintenance.

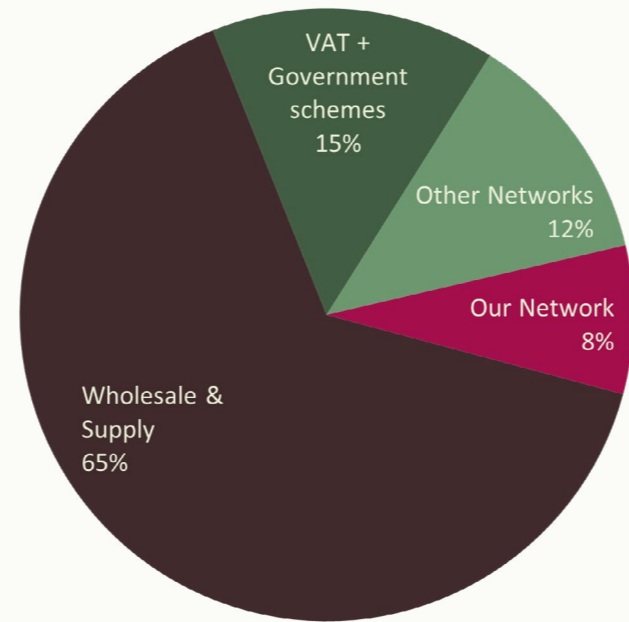
Supporting our operational teams

The remainder of the costs are mostly indirect costs which support our teams out in the field building or repairing the network. This includes activities such as training, vehicles, wayleaves, our IT infrastructure, our contact centre, and maintaining our properties.

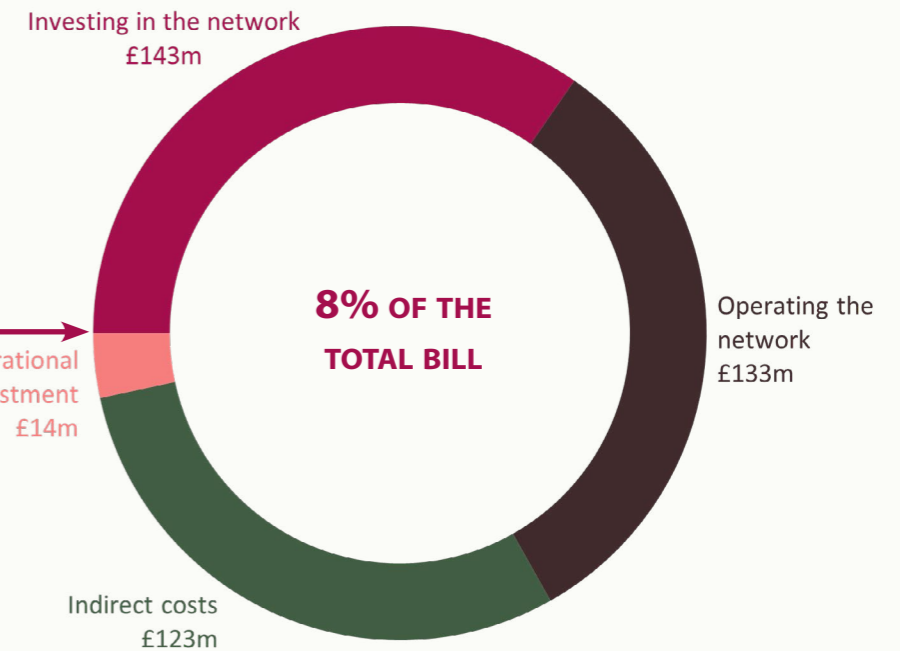
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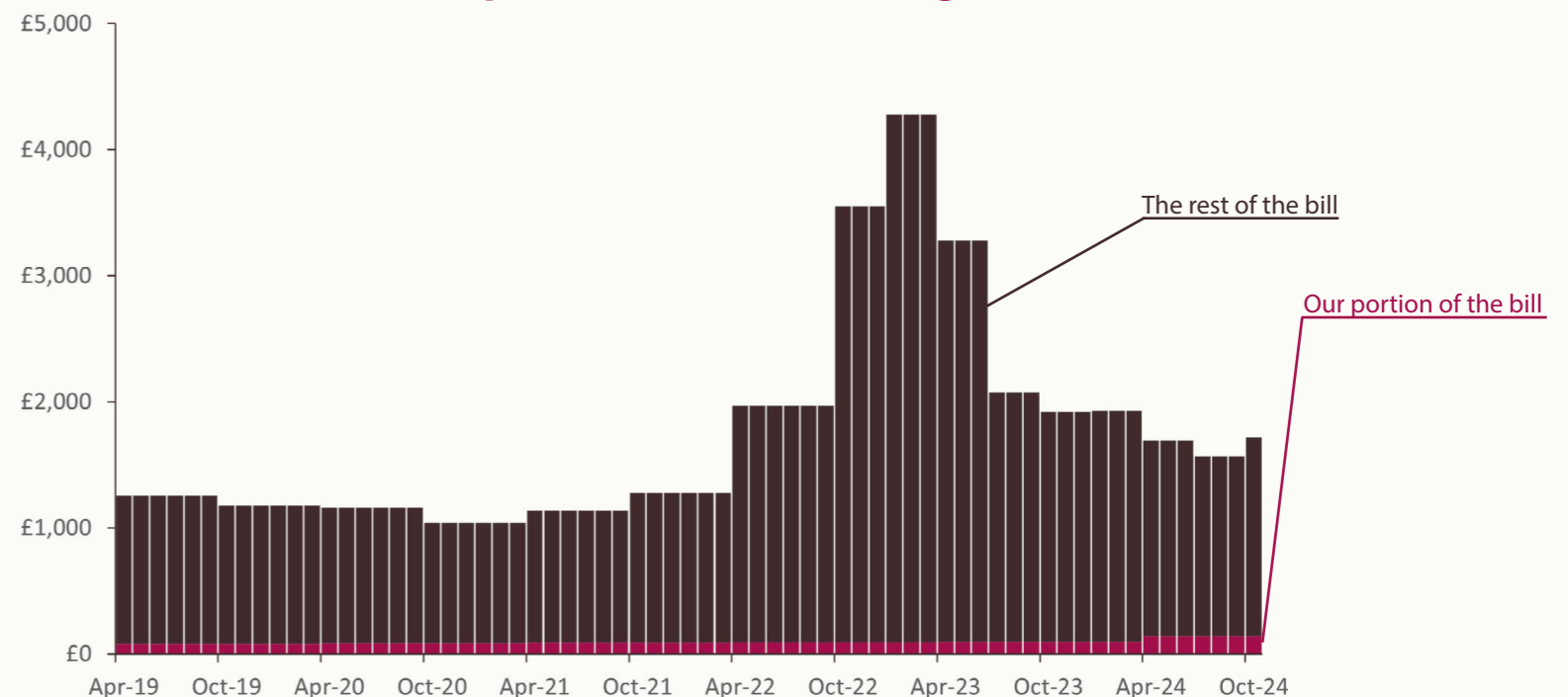
How is your bill split up?



Where do we spend your money?



How has our portion of the bill changed over time?



Energy price cap data released by Ofgem on 23rd August 2024: <https://www.ofgem.gov.uk/energy-price-cap>

Delivering a sustainable network

Decarbonisation

From tiny hamlets to three of the most populous cities in the UK, our network spans four national parks, five areas of outstanding national beauty and four heritage coasts. Our job is clear – to plan and efficiently deliver a network that enables net zero goals in our region, whilst keeping customers' bills low.

Environmental Protection

As we support our region on its journey to a decarbonised future, we are also taking action to reduce the environmental impact of our own network operations.

Connections

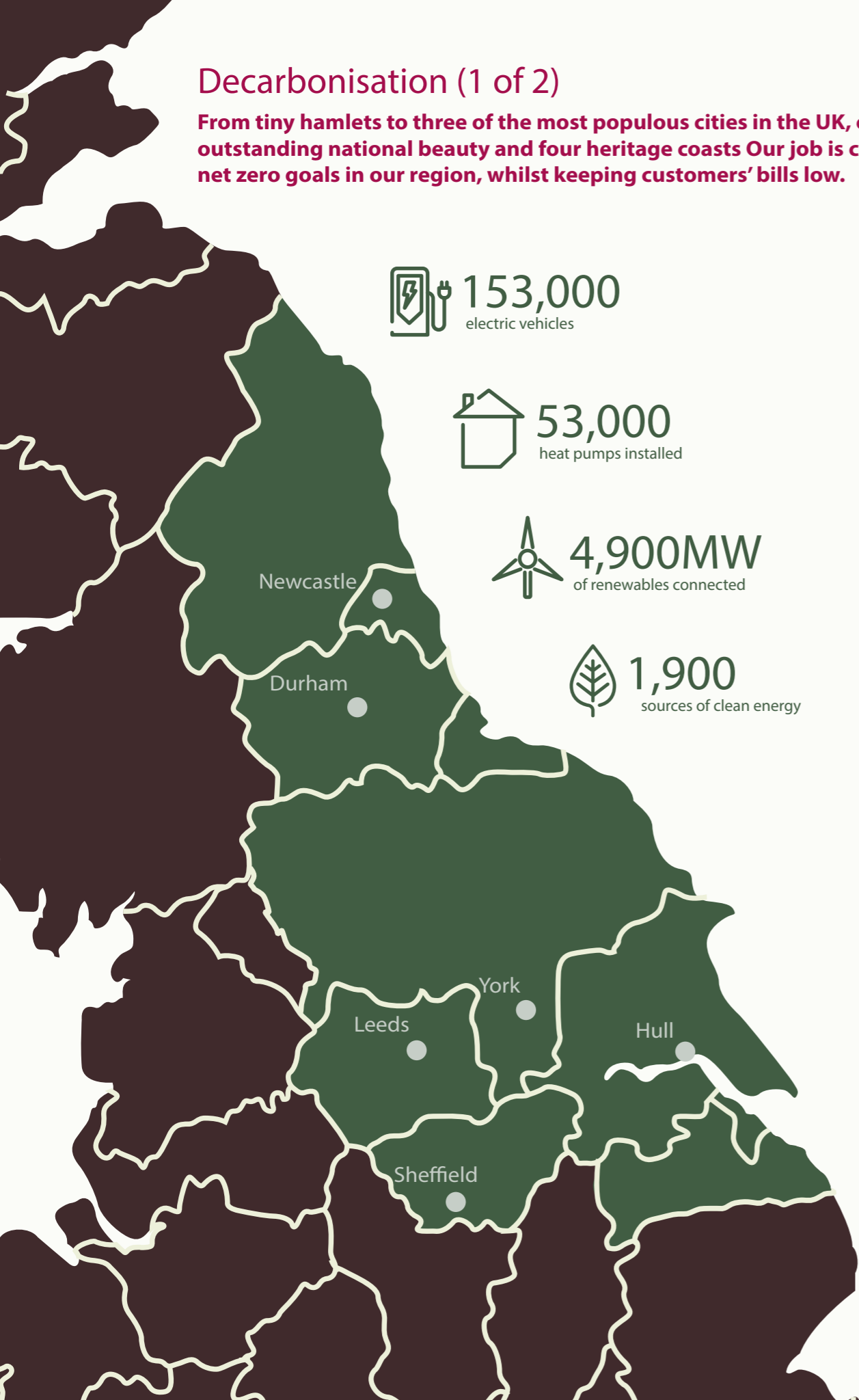
Our position within the industry means we play a key role in enabling the drive to a decarbonised future by providing an efficient service that allows for more flexible connections of Low Carbon Technologies.

Climate Resilience

Climate change presents a number of challenges for our customers, as well as our own operations. We have a robust climate resilience strategy to mitigate the impact of a changing climate on our network, including finishing our enhanced flood defence programme, accelerating vegetation management and building new infrastructure that is more resilient to weather.

Decarbonisation (1 of 2)

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Our role in the journey to a decarbonised future

Electricity distribution networks are a central component of our energy system and critical to delivering net zero. As our country’s clean energy transition continues to accelerate, it is expected that our lives will become increasingly dependent on the electricity we distribute across our region.

Across the North East, Yorkshire and northern Lincolnshire, ambitious plans are taking shape to decarbonise our communities and deliver net zero across our region. The clean energy transition is central to these ambitions, and our electricity network will be a key enabler for communities to make net zero a reality by 2050 at the latest.

Our region is home to some truly transformative projects which can deliver green economic development, and we take our responsibility to power these projects forward seriously.

Engagement with our stakeholders is vital to success and we regularly meet with local authorities and other key stakeholders across our operational region to gather insight on strategic plans and feed these into our future energy scenarios forecasting to ensure we are developing our network in the right place and at the right time.

Actively managing load on our network

A significant part of our overall investment approach is to ensure that the electrical load growth that inevitably comes with the mass intake of low carbon technologies is actively managed so that areas of our network do not become overloaded.

We constantly monitor network utilisation using our load index datasets and assess peak demand verses the capacity of our major substations, targeting reinforcement at the highest risk substations.

We have done that successfully in 2023-24, ending it with the highly utilised major sites constituting just 0.5% of all sites. Our forecasting processes will ensure we continue to proactively manage load related risk. Investment in creating capacity in the coming year includes schemes that will enable the smooth transition for additional LCTs, and generation connections planned for later in ED2.

Targeted investment in a more flexible, active network

To optimise our investment, we are taking a flexibility-first approach to our investment strategy for decarbonisation. We see the use of flexibility as a fundamental means to efficiently manage well-targeted network utilisation and reinforcement needs.

We continue to invest in smart grid solutions and field equipment that will allow us to operate the local network in a more active manner.

Our programme of LV monitor installation enables us to analyse network demand and growth more effectively, helping us make informed investment decisions. This allows us to determine where demand can be managed through active flexibility and where network reinforcement is necessary.

In 2023-24 we installed over 1,550 LV monitors, bringing the total on our LV network to 3,900. At the same time, we continue to invest in active network management (ANM). We have 4 ANM zones with 12 managed connections representing over 450MW of generation capacity. Overall and we have now dispatched 860MWh of flexibility services, another tool that can defer further reinforcement and deliver more value to our customers.

Enable flexibility across the whole energy system

To aid the uptake of flexible services, we have put the processes in place that allow stakeholders to easily interact with flexibility opportunities across the whole energy system, within our region and beyond.

We have established a flexibility platform that make it easier for third parties to take part in opportunities. This platform integrates two key tools:

- The Piclo tool - This is used for the promotion, tendering and procurement of flexibility opportunities. This tool is widely available and allows us to link up with flexibility providers from throughout the country.
- Flexible Power - This is a joint initiative between ourselves and three other DNOs designed to handle dispatch signals and settlement reports, validated service provisions and calculate invoices.

We are also supporting the wider energy industry’s flexibility standardisation - once completed, this will lead to common industry standardised practices, allowing flexibility suppliers to interact with all DNOs in the same way.

Decarbonisation (2 of 2)

Using open data as an enabler for decarbonisation

A timely and cost-efficient transition to Net Zero is built on data. Increased flows of granular data are redefining the way we plan for the future and manage everyday activities. At the same time, the data and insights we collect and share with our customers and stakeholders are shaping their operational and strategic decision-making.

At Northern Powergrid we are at the leading edge of efforts within our industry to improve the range and quality of the data we hold and make available to our stakeholders. In 2023-24 we took the lead position on several cross-DNO data collaborations, shaping the way our industry builds the data sets needed to enable the drive to net zero, including:

- Leading the DNOs to collaborate on delivery of the Common Information Model (CIM) requirements.
- Led the ENA Open Networks System Forecasting group to agree a common approach for the alignment of the next round of Distribution Future Energy Scenarios (DFES).
- First DNO to publish aggregated smart meter data. This will continue to enhance localised flexibility capabilities and lead to significant customer benefits.

In total in 2023/24 we published 56 open datasets, more than doubling our previous data set availability, providing raw data, meta data and intuitive models like our DFES interactive visualisation tool.

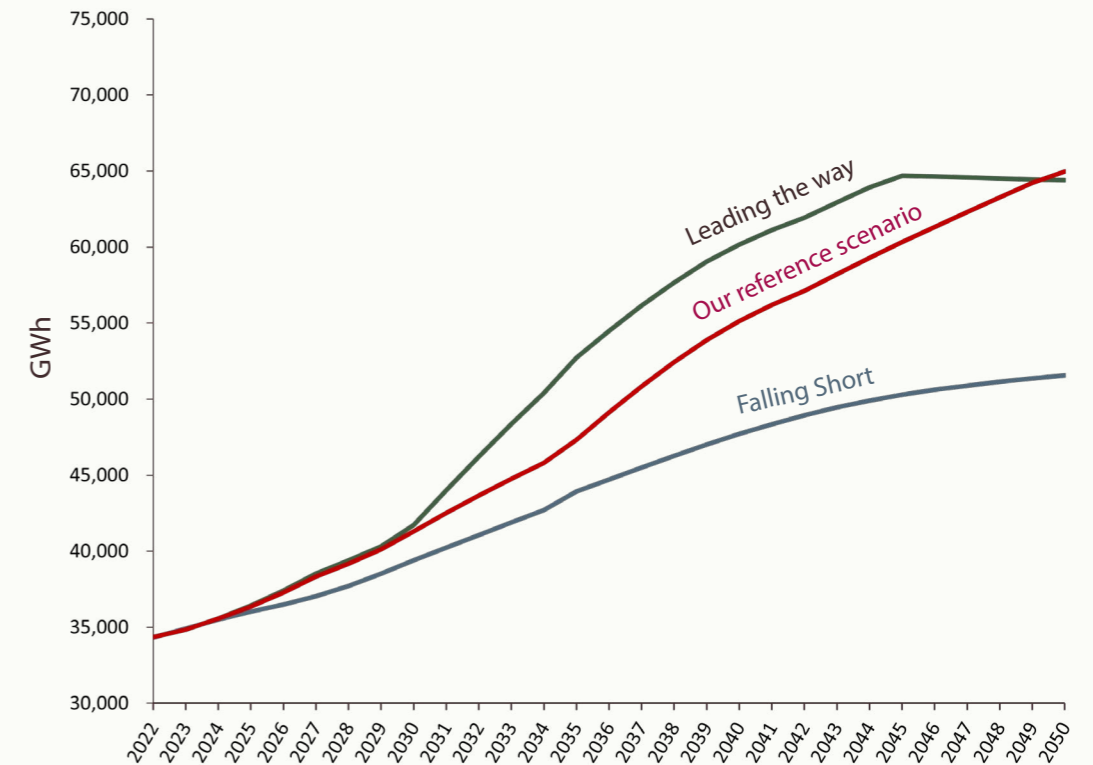
Building upon successful innovation to meet our decarbonisation goals.

We have a number of innovation projects in place, aimed to help our decarbonisation projects, including new initiatives and successful trials that are being rolled out to a wider base to further reap their benefits.

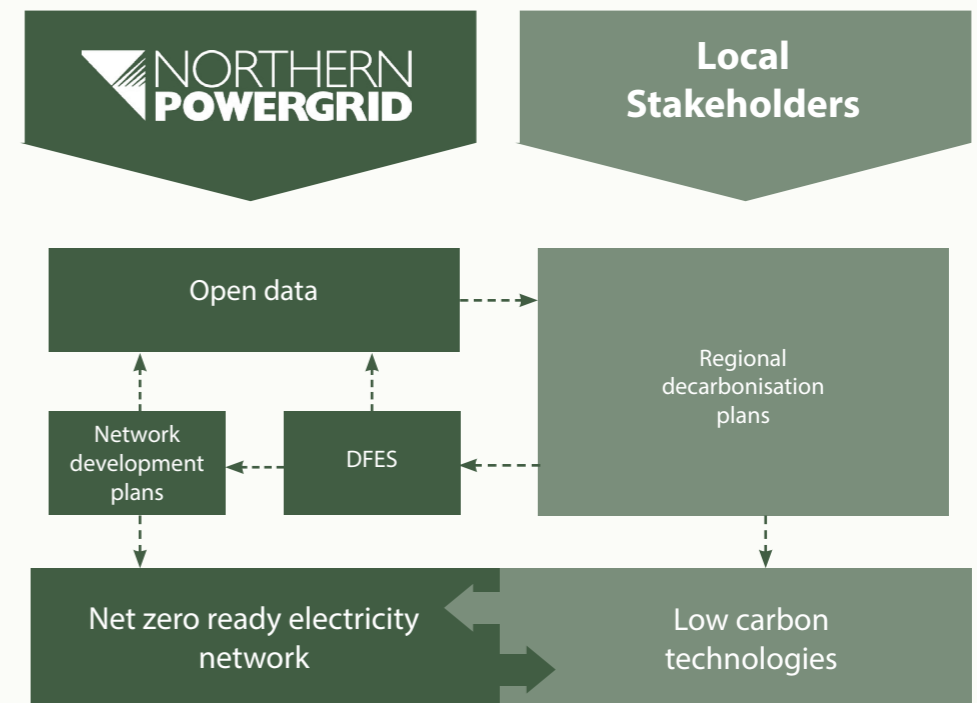
- Our AI Forecasting innovation project has developed optimised AI techniques to accurately forecast load at our substations. These techniques are forming the basis of tools to enable the short-term procurement of flexibility services requested by service providers.
- Building upon the success of our microgrid innovation trials, we have secured funding via the Strategic Innovation Fund (SIF) to develop this into the wider 'multi-resilience' trial which should allow us to keep customers on supply even after faults have taken out higher voltage circuits.
- Our ongoing Boston Spa Energy efficiency Trial continued, in 2023-24 we began reviewing and quantifying the benefits to customers in order to assess the business case for wider roll out. As part of this we have launched multiple projects in association with Leeds University.
- The Scenario Analysis for Non-domestic Network Decarbonisation (SANND) project will seek to develop software tool to visually display forecast scenarios of additional demand on electricity distribution networks at different time points based on bottom-up modelling.

Energy Consumption Scenarios

While the pathway to net zero is unclear, what we do know is that energy consumption is going to significantly increase over the next two decades. That means we need to invest in our network, or come up with innovative solutions, to cope with all of this growth.



If you are an organisation making regional decarbonisation plans, we want to work with you









Working with local authorities to improve their decarbonisation plan

We want to ensure our data reflects our stakeholders plans and urge organisations across our region to let us know about their strategic goals. As we plan our network development, we want stakeholders to inform us early of their plans so we can continue to develop our network to ensure it is fit for their future needs.



We are not only feeding our stakeholders insights into our data, but our team are also supporting local authorities and organisations to use our open data to help with their planning. This includes local authorities seeking to find the best location with enough capacity to develop heat networks for a local community or organisations that are thinking about electrifying their fleet.

In Newcastle, for example, our teams assisted the city council in building their digital twin project which used network data provided through the Local Authority Portal to guide the development of their decarbonisation plans.

Decarbonisation - Commitment Summary (1 of 2)

Commitment	Status	How are we doing?	What's Next?
WS1 Remove barriers for customers to use their equipment to support the whole energy system, launching an open register and energy matchmaking process that enables parties to work together to reduce costs and deliver whole system benefits		<p>We are currently developing plans for an NIA funded innovation project to investigate inter-seasonal energy requirements. We have discussed the concept of 'energy matchmaking' in our industrial cluster meetings as an opportunity to overcome transmission system constraints. We are discussing ways where we can use this concept to link up parties to engage cross-network and produce a true whole network energy solution.</p>	<p>Both innovation project ideas will be taken forward for review. These will be considered in the context of transmission system constraints that have become apparent since we originally wrote our ED2 plan to ensure they are still viable.</p>
WS2 Ensure our customers' future needs are met through cross-sector and cross-vector planning, including annual workshops with a wide range of stakeholders such as the heat, hydrogen and transport sectors to develop our regional DFES		<p>Our DFES 2023 publication was disseminated to 134 stakeholders in a well-attended external webinar in February 2024. General feedback was positive about data being open and available. We responded to all requests for data by putting it on our open data portal.</p> <p>A SIF Round 3 Discovery phase project 'Cross Vector Hubs' was launched in March 2024. The project is being delivered in partnership with Smarter Grid Solutions Ltd and with the support of Northern Gas Networks Ltd. NGN is providing supporting information for the development of the solution concept, value modelling and cost assessments.</p>	<p>Our 2024 DFES, to be published in January 2025, will align with the whole system pathways adopted in National Grid's 2024 FES.</p> <p>Discovery phase for Cross Vector Hubs concluded in June 2024. Northern Gas Networks will join the next phase of the project as a partner. The Alpha phase will look at development of techno-economic modelling tools to select suitable sites for Cross Vector Energy Hub applications including the sizing of key technology components.</p>
WS3 Develop the blueprint for the next-generation network by rolling out proven microgrid technology and deploying network voltage optimisation to deliver energy efficiency savings for customers		<p>Building upon the success of our microgrid innovation trials, we have secured funding to develop this into the wider 'multi-resilience' trial which should allow us to keep customers on supply even after faults have taken out higher voltage circuits. We have also designed a trial to utilise voltage load control (CLASS) to deliver fast reserve flexibility services to NESO.</p> <p>Our ongoing BEET trial continued in 2023-24 and we have begun reviewing and quantifying benefits to customers in order to assess the business case for wider roll out. We have launched multiple projects in association with Leeds University investigating household appliance sensitivity to voltage changes.</p>	<p>Our Multi-Resilience innovation project, trialling wider resilience measures, will launch in 2024-25.</p> <p>Continue quantified analysis on the benefits and drawbacks of our BEET trial and make an informed decision on whether to continue with wider roll-out.</p> <p>Complete business case for wider roll of voltage load control and roll out to a 10-site trail if deemed appropriate.</p>
WS4 Collaborate with organisations supplying equipment and solutions to industrial and commercial (I&C) customers and their trade bodies. This will ensure that standards for future I&C customer equipment and network infrastructure are specified for optimised performance and costs.		<p>We have worked to establish and deliver an end-to-end flexibility services platform that make it easier for third parties to take part in flexibility service opportunities. This platform uses an API to integrate the Piclo tool for promotion, tendering and procurement of flexibility opportunities.</p>	<p>Retender for end-to-end flexibility services platforms to retest the market and ensure we are delivering the most efficient process for Flexible Service Providers to interact with.</p>
SI1 Efficiently put the network in a position to support LCT uptake and ensure all credible decarbonisation scenarios in our region remain open for delivering net zero by 2050 or sooner.		<p>We published our 2023 DFES report and delivered an external seminar which informed our our network output assessments and network development plan publications.</p> <p>We continue to accommodate the instillation of key LCTs on our network. In 2023-24 an additional 48,113 Electric Vehicle chargers and 4,992 Heat Pumps were added to our network. To manage the increased demand LCT solutions will bring to our network we need to manage the load related risk to our substations. We have done that successfully this year, ending it with the highly utilised sites constituting just 0.5% of all sites. In 2023/24 we invested £32.3m in creating capacity to manage network load risk</p>	<p>We are now working on our DFES 2024 publication, which will be published in January 2025.</p> <p>Our forecasting processes will ensure we continue to manage load related risk caused by connection of LCTs. Investment in creating capacity in 2024 includes schemes that will allow additional LCT and generation connections when they complete later in ED2.</p>
SI2 Deploy a flexibility first approach, always choosing network and customer flexibility solutions where cost-effective and viable ahead of network reinforcement		<p>In 2023/24 we ran two tenders for over 15MW of flexibility service capacity across 24 sites: 14 primary and 10 secondary substations where we are seeking to defer reinforcement.</p> <p>To support market development, we adopted the Piclo market platform for local flexibility. This allows us to connect with a wider market for competitive flexibility tenders.</p> <p>We continue to invest in smart grid solutions, installing over 1,550 LV monitors in 2023-24, bringing the total on our LV network to 3,900. We have 4 Active Network Management (ANM) zones with 12 managed connections representing over 450MW of generation capacity. Overall, we have dispatched over 860MWh of flexibility services to defer reinforcement. These approaches will continue throughout ED2.</p>	<p>Our customers have currently accepted a further 60 EVH generation connection schemes where an ANM solution is required.</p> <p>We will run 3 tenders in 2024/25 and we will fully implement the industry standardised procurement process and standard contract, adopt the new industry standard products.</p> <p>We will embed our flexibility first policy into business operations via procedures that define decision-making processes.</p>

Decarbonisation - Commitment Summary (2 of 2)

Commitment	Status	How are we doing?	What's Next?
DSO1 Significantly expand our capture of network and market data to establish a vital building block for a smarter and more active energy system.		<p>We have established a Regional Insights team to proactively support local stakeholders in leveraging and informing the data we share, engaging with over 650+ stakeholders this year.</p> <p>We invested in network monitoring technology to increase the data we have available, informed by stakeholder needs. This includes installation of 1,550 LV monitors over in 2023/24 which means 14% of our ground mounted substations are monitored.</p> <p>We have also published 56 open datasets - more than doubling our previous data set availability, providing raw data, meta data and intuitive models like our Distributed Future Energy Scenario (DFES) interactive visualisation tool.</p> <p>We were the first DNO to publish aggregated smart meter data. More comprehensive data will continue to enhance these capabilities and lead to customer benefits.</p>	<p>We will continue develop the Open Data Portal up to date to allow users across the energy system to unlock maximum value from it.</p> <p>Find more user-friendly solutions for Local Authorities to share data that minimise the effort required to align with our requirements. Where possible, these solutions will be automated, reducing resource and human error.</p> <p>Add to our grouping of datasets according to theme by including groupings according to personas to enable people to easily find the datasets most relevant to their needs and interests.</p> <p>Continue to refine our analysis of the big data associated with LV monitor measurements, aggregated smart meter data and statistical modelling using whole energy and half hourly metered data.</p>
DSO2 Transform our analysis capabilities to enable data driven decision making in planning and operational timescales to drive value for customers while working in collaboration with others in the industry to improve the format and consistency of energy system data		<p>We have led several DNO collaboration projects including: the delivery of the LTDS Common Information Model (CIM), resulting in the establishment of the Open Networks Data; the ENA Open Networks System Forecasting group, through which all DNOs collaboratively agreed a common approach for the alignment our next DFES, using consistent naming conventions and forecasting techniques; and a Digitalisation Steering Group CIM interoperability testing subgroup.</p>	<p>Add our developing Digital Twin to the Open Data Portal and update in waves until its final delivery in 2026. This £7.3 million investment will allow us to trial concepts without physically committing resources and give our key DSO stakeholders unprecedented access to our network information.</p> <p>Publish the Common Information Model, representations of our network as part of the LTDS reform and continue to refine our analysis of the data associated with LV monitoring, smart meter data and statistical modelling.</p> <p>Replace all our legacy design tools with more advanced software in 2024. Enabling improvements in analysis for us and our data users.</p>
DSO3 Unlock new capabilities and benefits for customers through provision of open energy system data and engaging in joint planning with our stakeholders, including providing support for local authorities on the development of LAEPs		<p>Our AI Forecasting innovation project has developed optimised techniques to accurately forecast load at our substations. Further power flow data from our LV monitoring, along with automated data analysis, has provided us much better information to help forecast future loads.</p> <p>Across the region we have also trialled an approach to capturing Local Authority information. This automatically captures locations, sizes, and timelines for the connection of 115 potential projects across nine Local Authorities. The scheme informed our forecasts of the location and details of at least 23,000 new homes, 47 non-domestic schemes (including hydrogen, electrolysers, factories and leisure facilities), 2GW of generation and 350MW of battery storage.</p>	<p>Working with Open Data Institute to complete their Open Data Maturity Model has enabled us to document our open data priorities. This includes a strengthened focus on 'Customer Support', also reflected through our Stakeholder Engagement activities.</p> <p>Priorities over 2024-25 include a refresh of the Open Data Portal page content to improve the overall user experience, and the implementation of further dashboards to further showcase the availability of data and increase the ease of which users can interact with this.</p>
DSO4 Enhance processes and systems for network operations to enable a step change in our capability optimise a system with increasing customer and network flexibility		<p>We have initiated the tender for our Active Network Management and we are supporting the wider energy industry's flexibility standardisation activities through the ENA's Open Networks programme.</p> <p>We have created and onboarded 15 new technical roles within our Energy Systems directorate and upskilled them to apply whole-systems thinking through System Forecasting, System Flexibility, Local Network Planning and Policy.</p> <p>We have developed a trial of voltage load control to trial provision of services to NESO through the management of voltage on our primary network.</p>	<p>Our Active Network Management is scheduled for completion in the 2025-26 regulatory year and, once delivered, the deployment of centrally controlled management schemes to control flexible customer assets will begin. This will give us the ability to manage thermal, voltage and fault level constraints act as a springboard to integrating the dispatch of flexibility.</p> <p>Consider the business case for deploying fault level monitors on to enable further network flexibility. We will also deploy a voltage load control trial to 10 substations and run market trials with NESO to pilot this technology.</p>
DSO5 Enable a significant uptake of customer flexibility and facilitate development of new markets for customers providing services to networks		<p>We have contributed to industry work on enabling stackability both in terms of product definitions and ESO-DSO coordination. We tendered and procured our Scheduled Utilisation product. Adopted the Piclo platform to advertise and run our competitions for flexibility services, and the cross-DNO Flexible Power platform, to validated flexible service provisions and calculate invoices.</p> <p>Deployed a team of three Commercial Managers for engaging with current and potential providers of flexibility services, both aggregators and end customers.</p>	<p>Establish an ICCP data exchange to create links between DNO and ESO control rooms to achieve real-time coordination of DER dispatch. Seek opportunities to deploy flexibility services for new use cases such as enabling faster connections. Introduce a product for deferring reinforcement that features nearer to real time dispatch decisioning, enabled by nearer to real time forecasting capability.</p>

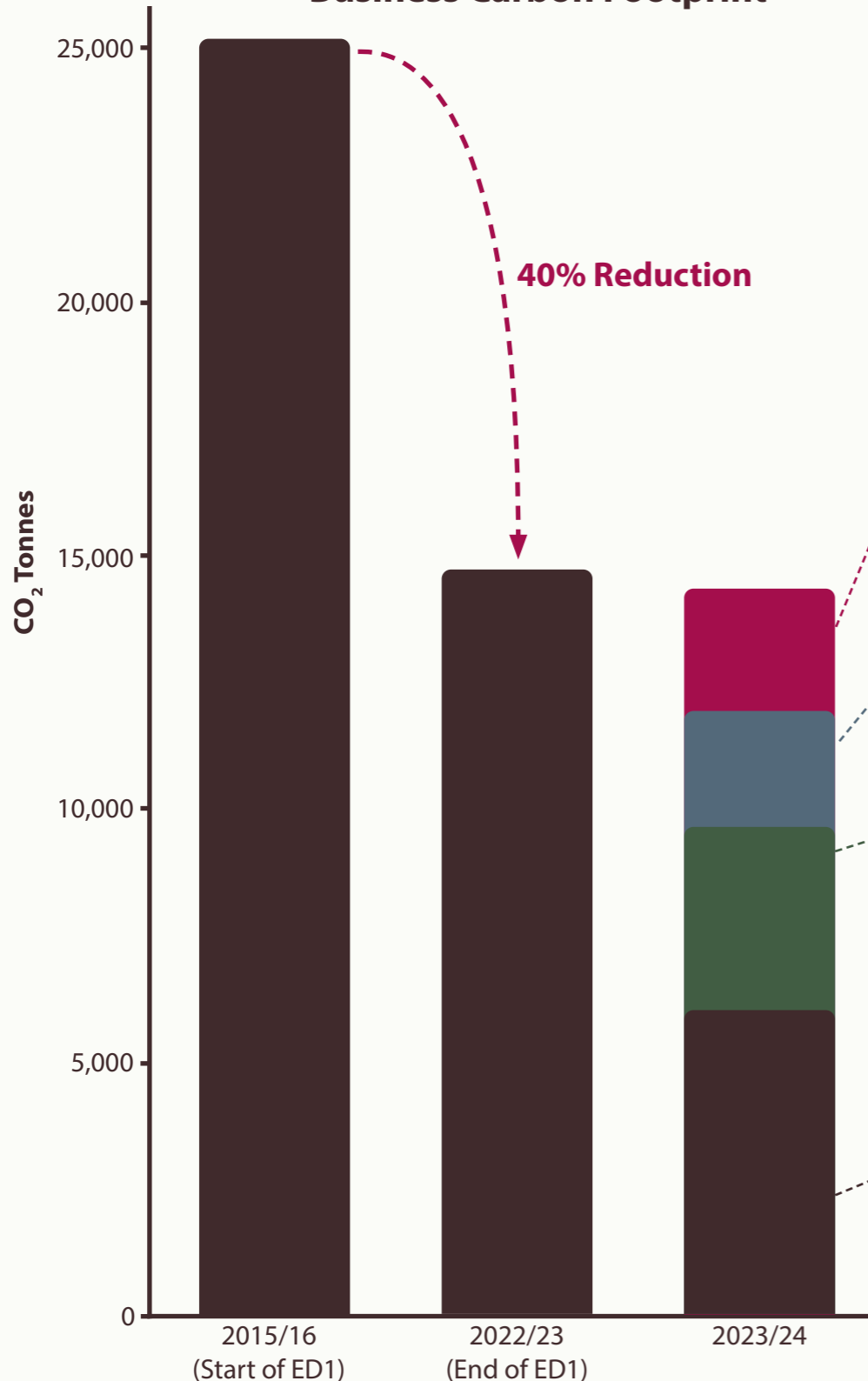
Environmental Protection

As we support our region on its journey to a decarbonised future, we are also taking action to reduce the environmental impact of our own network operations including reducing carbon footprint, improving oil/fluid loss, undergrounding in areas of natural beauty, and improving biodiversity.

We believe it is our responsibility as a member of the community to protect the environment in which we and our customers live. This commitment includes reducing our business's carbon footprint, preventing oil and fluid leaks, undergrounding power lines in areas of natural beauty, and enhancing biodiversity at our sites.

In the context of addressing climate change and supporting the UK's net zero target, carbon reduction remains a top priority for all our stakeholders. Below are some of the initiatives we are implementing to reduce our carbon footprint and accelerate our journey towards achieving net zero operations by 2040. For more detail on our environmental progress in 2023-24, please read our [Annual Environment Report](#).

Business Carbon Footprint



Fugitive Emissions

Fugitive emissions are down to the loss of Sulphur Hexafluoride (SF₆) from our assets, unlike other areas that are linked to our business operations. SF₆ is a more potent greenhouse gas than CO₂ and around 80% of the SF₆ used globally is in electricity transmission and distribution to insulate live electrical parts.

We are working with equipment manufacturers to improve the speed of repair as well as innovative solutions to repair assets to reduce leakage. As part of this approach, we replaced two of our worst performing SF₆ assets with a 'clean air' insulated switchgear; these replace the SF₆ with a high-pressure mix of nitrogen (80%) and oxygen (20%), which has effectively removed the equivalent of over 400,000kg of CO₂ from our network.



Business Transport

Business transport includes all non-operational travel and makes up 16% of our carbon footprint, we continue to make use of modern, agile ways of working to reduce the number of miles that our people travel for work.

This includes the installation of Teams rooms and facilities in our offices that make it easier to have virtual meeting while keeping many of the benefits of in-person interactions.



Operational Transport

The use of diesel fuel within our commercial operational fleet is a significant contributor to our carbon footprint, contributing 25% of our total business emissions.

We plan to transition our vehicle fleet to low carbon alternatives as quickly as is practical. As a first stage in the transition to Electric Vehicles (EVs), we are working to find suitable at-home and on-site EV charging point installation partners to increase our existing workplace charging infrastructure and we are also investigating whether renewable energy sources may support this charging infrastructure. Currently 43 (5.1%) of our fleet vehicles are ultra-low emission vehicles but we plan to increase this to approximately 350 by the end of the period.



Energy Usage

In developing our new office at Riverside House in Sunderland, we have taken the opportunity to target improvements, including installing low carbon LEDs and variable refrigerant flow (VRF) and heat recovery units for a more efficient air conditioning system.

We are also retrofitting energy efficiency solutions into our existing offices. In 2023-24, we focussed on our Shiremoor office where we again upgraded lighting to LEDs, lined the walls with an insulation backed plasterboard to improve thermal performance and installed a new air handling unit.



Environmental Protection - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
EP1 Reduce controllable internal BCF by 20%, keeping us in line with the government's 2035 target and on a path to being a carbon- neutral operation by 2040, and introduce a science-based target to measure our impact	●	<p>We have continued to reduce our scope 1 and 2 emissions throughout ED1 and into ED2. Total scope 1 and 2 emissions reduced by 4.5 per cent on the previous year. Our new site at Riverside House, and our Shiremoor office have been upgraded with energy efficient features such as LED lighting and variable refrigerant flow and heat recovery units.</p> <p>On fleet decarbonisation, we are working to establish suitable charging point installation partners to increase our charging infrastructure, as well as exploring ways of reducing emissions through technologies such as hydrogen fuel cells and using renewable fuels. Currently 43 (5.1%) of our fleet vehicles are ultra-low emission vehicles.</p> <p>We have also taken a collaborative approach with other DNO's and the ENA on SF₆ losses. The aim is to trial and embrace innovative SF₆-free technologies. We have also improved our leak repair capabilities with the manufacturers and the use of innovative techniques.</p>	<p>We will continue our building energy efficiency improvements across other sites in our property portfolio.</p> <p>We will replace approximately 350 diesel vehicles throughout the rest of ED2 with battery electric vehicles (BEV), and plug-in hybrid vehicles (PHEV). BEVs are preferred for maximising emission reductions. However, in cases where limitations such as payload, range, or towing capacity pose challenges, alternative vehicle types will be considered.</p> <p>Pursue further reduction in SF₆ loss by trailing and implementing alternative repair and refurbishment solutions.</p>
EP2 Efficiently manage and optimise losses from our network	●	<p>We have embedded a low loss policy in designing and operating our network and have published our losses strategy. One of the key considerations is the size of the cable installed. The incremental cost of higher capacity (larger) cables was compared with the benefits of having bigger capacity, lower resistance cables - i.e. low loss cables – to create the extra network capacity required to facilitate net zero and improve network performance while minimising associated losses. We are not pursuing super low-loss amorphous core transformers in line with the ED2 settlement.</p>	<p>Decarbonisation will result in a significant increase in network loading as customers switch from fossil fuels to electricity and low-carbon technologies and we will continue to apply our losses strategy to invest in improvements to the network where it is efficient for our customers.</p>
EP3 Promote environmental management and decarbonisation of our supply chain, achieving 90% compliance with our responsible procurement charter	●	<p>We have developed a model to assess and report on embodied carbon used in the construction of new major projects. We have also continued the roll-out of the Responsible Procurement Charter with all new contract awards requiring a sign up to the charter, as well as retrospectively approached all suppliers - currently 80% of suppliers have done so.</p> <p>We have renewed our partnership at the Supply Chain Sustainability School which provides a learning database for our suppliers on a variety of sustainability and environmental issues, including workshops, toolkits and templates.</p>	<p>We are now in the process of adopting and embedding the embedded carbon reporting model into the business and we will continue review of the supply base to ensure they are signed up to the Responsible Procurement Charter, working towards 90% sign up as the next target.</p> <p>Development of a new Supplier Reporting System is underway to collect, manage and report on our suppliers against a set of sustainability metrics. We expect to go live at the end of 2024.</p>
EP4 Reduce oil lost to ground by 15%	●	<p>In 2023/24, the total amount of fluid lost from our network was 20,955 litres, significantly favourable to our target of 26,500 litres. We also replaced 16km of fluid filled cable. This equates to the removal of almost 41,000 litres of oil from our cable network.</p> <p>In collaboration with UKPN, Northern Powergrid is sponsoring the development of self-healing fluid, which hardens on exposure to oxygen and can therefore plug leaks automatically. A trial of this product is underway and results so far have been positive.</p>	<p>We will continue to replace high risk cables to further reduce environmental risk. Our accelerated PFT instillation schedule will help us to catch up on the shortfall experienced in 2023/24.</p> <p>Results from tests conducted so far on our self-healing cable trial have been positive. We will continue with this project and report further in next year's report.</p>
EP5 Remove PCB contaminated equipment from our network	●	<p>We continue to test the insulating oil in all our ground mounted transformers. The oil is tested to determine the presence and concentration of PCBs. Non-compliant transformers are either repaired to replace the oil or the asset is replaced entirely.</p> <p>For pole mounted transformers, which are not designed to be internally inspected, a statistical model has been developed with the Environment Agency and the Energy Networks Association, to determine which pole mounted transformer are compliant. This is being used to inform our replacement plan which has replaced 614 units this year.</p>	<p>Continue to work with the industry project to assess "amber" cohort of pole mounted transformers and determine which may be non-compliant.</p> <p>Non-compliance of both ground mounted and pole mounted transformers will continue to be addressed through oil changes and our asset replacement programme - this programme will replace around 6000 units in 2025.</p>
EP6 Take proactive action to protect and enhance the environment in which we operate; delivering 73km of undergrounding to improve visual amenity, biodiversity improvements at 200 sites and 90% of waste diverted from landfill	●	<p>We spent £1.5m to remove 6km of overhead line and installed 11km of underground cable, outperforming our target by 4km.</p> <p>We have identified 20 sites where we have implemented conservation mowing, leaving the main areas free for insects and birds to thrive.</p> <p>99% of waste directly generated by Northern Powergrid is either recycled or sent to energy from waste facilities.</p>	<p>We will continue to adopt conservation mowing on sites where it is possible and safe to take this approach. One of our key volunteering activities, which will be made available to colleagues in 2024/25, is aimed at increasing biodiversity in our operational regions.</p>

Connections

Our position within the industry means we play a key role in enabling the drive to a decarbonised future by providing an efficient service that allows for more flexible connections of Low Carbon Technologies.

Improving the connections experience for our individual small works customers

We recognise that our small works connections customers require a service that is easy to understand and engage with, especially when dealing with emerging low carbon technologies, and that delivers the work they need in an efficient manner.

We have built a team of dedicated Connections Technicians who work closely with our customers on a local regional basis. Our aim is to provide customers with a single-point-of-contact for all stages of the connections journey and we have commenced a programme of multi-skilling for our technicians to enable them to carry out a wider set of activities, meaning that customers can receive a more personalised and streamlined service.

This approach has seen us significantly improve our connections lead times, with quotation times improving by 54% and delivery times by 24%. We have improved customer satisfaction by 3.7% in 2023-24. Progress has continued since then, with satisfaction so far in 2024 sitting consistently above 91%.

Building digital tools to help fast-track the instillation of Low Carbon Technologies

A growing number of our customers appreciate self-service opportunities. In response, we are developing our digital platforms to enable customers to self-serve and create a more seamless online experience. Building on the success of our Autodesign tool from ED1, which allowed customers to plan their own new Low Voltage connections and receive a budget estimate, we are expanding of our Autodesign capability to include customers who want to install LCTs to existing connections.

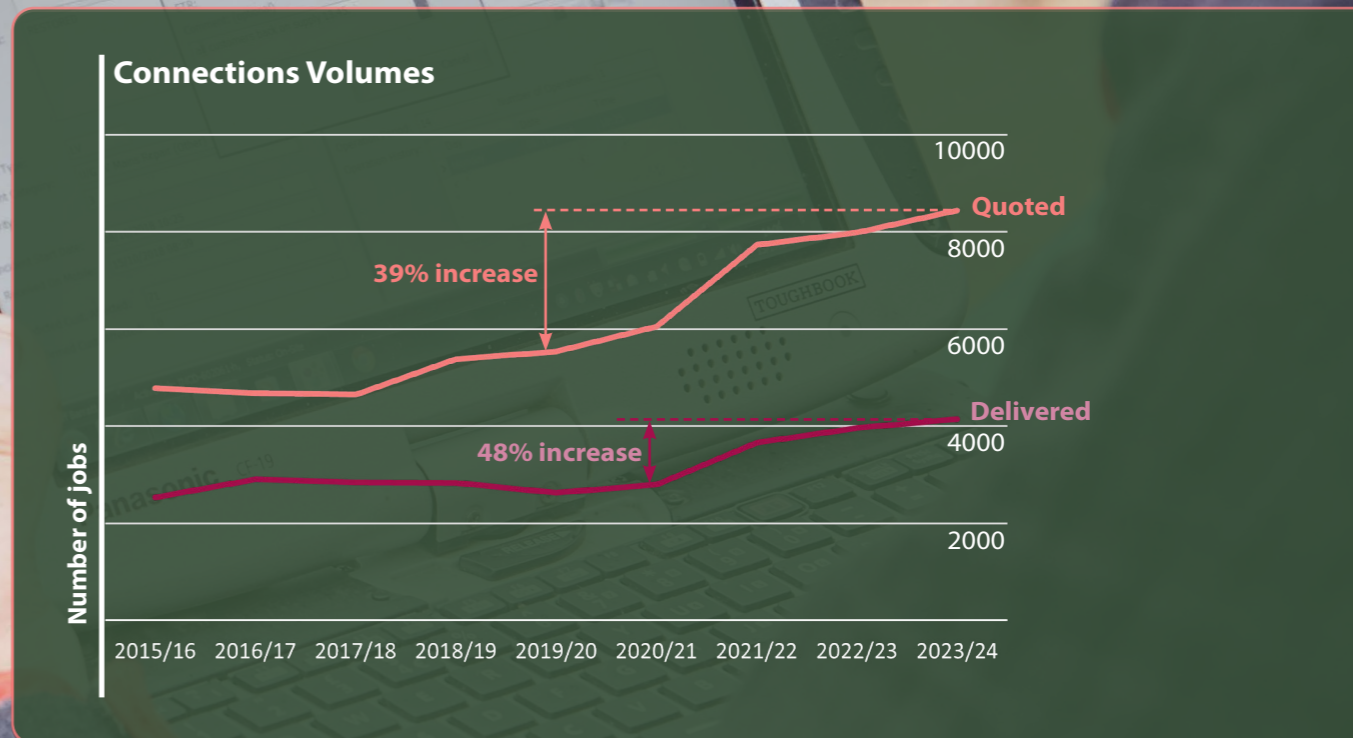
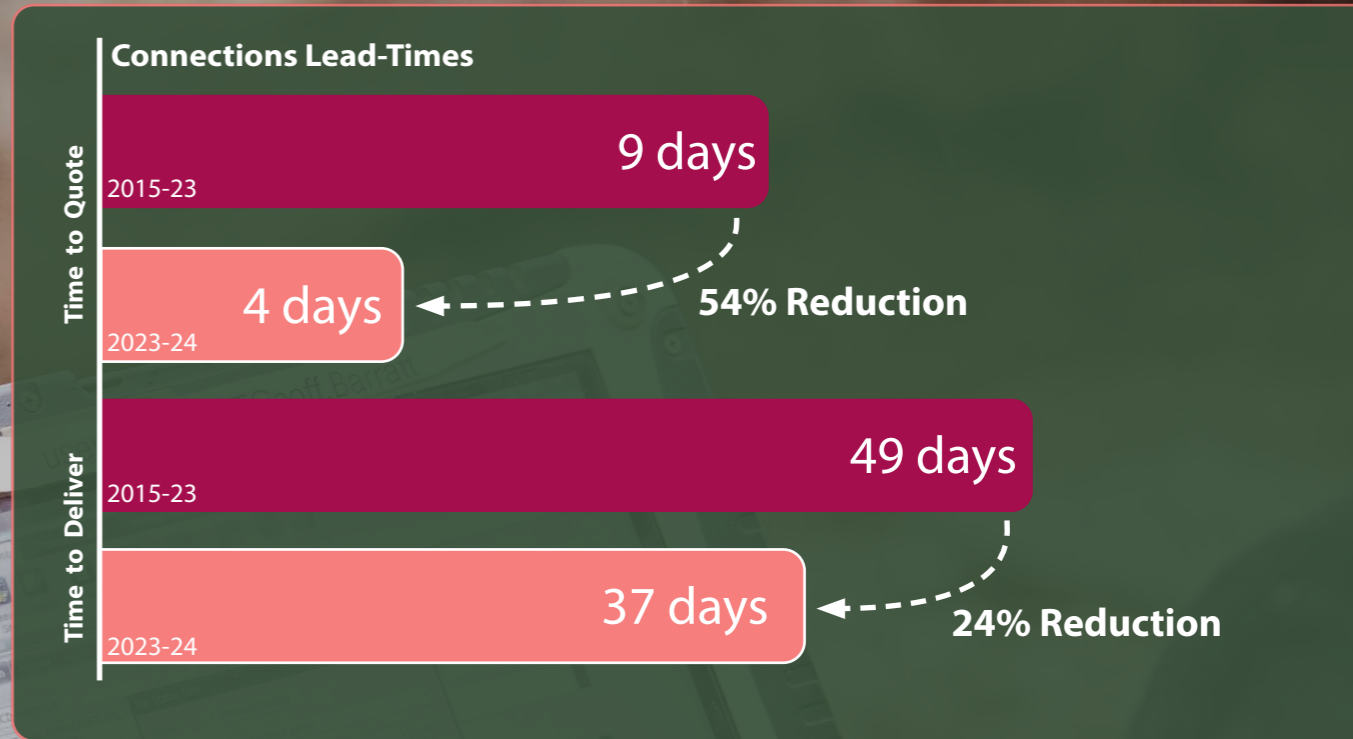
Once launched in late 2024, we will look to improve our ability to handle LCT requests in bulk, enabling mass LCT connections through improving our LV capacity and intervention forecasting capability. Elsewhere, we have completed our plans to develop and publish our HV & EHV Network Availability Heat Maps to indicate where network capacity already exists for our customers to connect new large-scale generation and demand without requiring significant network reinforcement. We now plan to extend this service to our LV network.

Delivering a fair and efficient service for groups delivering major projects






Net zero targets are driving significant increases in new large-scale connections for Low Carbon Technologies (LCTs), renewable generation and energy storage. Enabling all these technologies to connect to our distribution network in the most efficient and economical way is a priority for us, and as such we are constantly evolving our services to be more effective for our customers.

We have created a regional Insights team that provide a vital front door to key regional decarbonisation organisations contacting our business and have also been proactively engaging with a wide array of different stakeholders, including local authorities, housing associations and EV charge point operators to support their strategic objectives and help define regional decarbonisation plans.

We have also developed our Delegated Technical Limits scheme which has allowed us to carry out local queue management and promote projects in the pipeline that are ready to connect. In 2023/24 we issued 33 technical limits offers, on average accelerating projects by 7 years.



Connections- Commitment Summary

Commitment	Status	How are we doing?	What's Next?
CN1 Help our small works customers to get connected quickly by providing more self-service options, greater support and more flexibility over delivery		<p>We have reduced time to quote by 54% and time to deliver by 24%. We have also improved customer satisfaction and are now scoring over 9.1/10 according to our customer surveys in 2024.</p> <p>Our dedicated Connections Technicians consistently provide high-quality service. We have also launched a multi-skilling programme to enable them to perform a broader range of tasks, allowing customers to benefit from a more streamlined, single-point-of-contact service.</p> <p>Our connections application pages on our website have also undergone a makeover to improve how a customer interacts in their journey to apply for a service and we continue to develop a tool that will speed up the application process for multiple LCT connections.</p>	<p>Upon completion of our multi-skill training, our Connections Technicians will be empowered to act as a single-point-of-contact, completing more aspects of the connections themselves.</p> <p>We are also reviewing the potential to automate other aspects of our connections process to reduce the lead-times.</p> <p>Improvements are also being made to our website making it easier to navigate the digital connections tools available.</p>
CN2 Facilitate the mass uptake of LCTs, flexible connections and network flexibility to support the drive to net zero		<p>The expansion of our Autodesign capability is currently underway to include customers who want to install Low Carbon Technologies (LCTs) to existing connections, due to complete Q3 2024. This will be a great addition to our self-serve capability in the Connections space, improving the customer journey and process.</p> <p>Connections user experience improvements are currently being made to the Northern Powergrid website making it easy as possible to navigate the digital tools available. The digital application process has been simplified through changing navigation & forms online with customer feedback. These aspects are complete, and we are now developing a single-sign-on functionality to ensure customers only have to log in once when navigating the online process.</p> <p>Work is currently under way developing a heat map representing LV data due to be published on the open data portal in late 2024.</p>	<p>The expansion of our Autodesign tool will improve our ability to handle LCT requests in bulk. We are currently working to determine the next phase of the road map to improve our LV forecasting capability as well as introducing a Mass LCT application process.</p> <p>Work to complete the single-sign-on functionality has been completed in 2024 to remove the need for multiple log-in credentials across different tools which was previously confusing our customers.</p> <p>We are also part of a collaborative project run by the ENA (Connect Direct) looking to introduce an industry wide standardised, digital interface for customers looking to carry out an LCT connection. A soft launch took place in May 2024, and we will monitor feedback before looking to move to a full-scale launch if successful.</p>
CN3 Empower our customers to make more informed decisions about how and where to connect by expanding the scope of network information.		<p>Our HV & EHV Network Availability Heat Maps were published in October 2023 and indicate where network capacity exists for our customers to connect new large-scale generation and demand without requiring significant network reinforcement. This self-serve tool enables customer to check the feasibility of potential connections before they apply.</p> <p>In addition to the maps themselves, we also publish the underlying data, which allows users to take the data and create their own charts and maps in combination with the other datasets available on our portal.</p>	<p>The existing maps, which are updated monthly, cover our EHV and HV network. However, we are currently working on an update to include the LV network with the aim of publishing this in 2024-25.</p>
CN4 Continue to facilitate fair and open competition so that our customers have a choice in who delivers their connection		<p>We have started a trial with an IDNO for the self-fill of LV Bilateral Connection Agreements to further minimise input services and speed up applications for major connections projects.</p> <p>We continue to facilitate fair and open competition so that our customers have a choice in who delivers their connection by publishing guide prices and monthly performance metrics, as well as providing clear cost breakdowns in connections quotations.</p>	<p>Once the trial of LV Bilateral Connections Agreements is complete, we aim to roll this out to all IDNOs.</p> <p>We are currently reviewing whether there is necessary demand from ICPs and IDNOs to justify providing a bespoke Autodesign platform for ICPs and IDNOs with non-contestable costs.</p>
CN5 Deliver an efficient connections service for all our customers, providing more technical advice to customers on smarter and more flexible solutions		<p>Our Regional Insights team has been established to support key regional decarbonization organizations, such as EV charge point operators and housing associations, through our connections processes. Additionally, our EHV Connections team offers tailored one-on-one Connection Surgeries, providing stakeholders with the information they need to make informed decisions about connection capacities and optimal locations.</p> <p>We have delivered a suite of new processes to provide Access SCR compliant connections, including curtailable connections offers. All our design engineers have been trained to have discussions on curtailable connection options.</p>	<p>The success of our Regional Insights team provides a blue-print for a wider service for all connections customers and we will look to roll the approach out to other connections services.</p> <p>Our teams will continue to convene a wide range of regional boards to provide our input and perspective on key regional projects.</p> <p>We will continue to leverage our Delegated Technical Limits scheme to assess and promote major connection projects in our pipeline that are ready to connect, speeding up completion of major projects.</p>

Climate Resilience

Climate change presents a number of challenges for our customers, as well as our own operations. We have a robust climate resilience strategy to mitigate the impact of a changing climate on our network

Reducing the potential impact of storms.

In 2023/24 we experienced seven named storms, interrupting almost 219,000 customers in total. Since 2020 we have seen a run of years in which we had a lot of severe weather events - the most memorable of which was Storm Arwen in 2021. We learned valuable lessons from Storm Arwen and subsequent storms, which we discuss in more detail on the next page. These lessons have also shaped our climate resilience strategy, helping us mitigate the impact of future storms on our network.

We have in place a comprehensive programme of vegetation management to cut back trees and other vegetation that would be at risk of striking our overhead power lines during storms. Recent weather extremes, which have seen both wetter and warmer weather than normal, have encouraged accelerated vegetation growth in our region and we have ramped up our vegetation management programme accordingly, delivering performance ahead of expectations. In 2023/24 we cut back vegetation across 1,850km of network.

We continue to review and revise our designs and specifications for our network assets, both at a Northern Powergrid level and through national forums, to ensure that assets remain fit for purpose for the duration of their expected life. We have carried out a thorough assessment of the resilience of our overhead lines and identified areas where changes to the specification and build would inject additional resilience into the network.

We have also submitted a Storm Arwen re-opener request for funding to Ofgem in light of this work and await their final determination.

Using collaboration to improve resilience within our region and beyond

We recognise the importance of working with experts when it comes to climate change and our resilience response. We regularly interact with the Environment Agency and are seeking ways we can work collaboratively to improve climate resilience in our region beyond our network responsibilities.

We have participated in exercises with local resilience forums which test our regional and national response to the loss of critical infrastructure and are working on a number of climate related research projects run by our parent company, Berkshire Hathaway, and in collaboration with local universities.

Through our links with Berkshire Hathaway, Northern Powergrid are participating in the Climate Resili project run by EPRI, a multi-year project to strengthen the power sector's collective approach to managing climate risk.

Much of our collaboration incorporates experts from throughout our industry. We continue to work with the ENA Climate Change Adaptation working group which includes all gas and electricity transmitters and distributors to ensure a coherent approach to adaptation across the energy sector.

Utilizing the latest technology to enhance our climate resilience

We continue to innovate and make use of advanced technology to improve climate resilience. We continue to expand our fleet of drones and trained pilots to assess storm damage in situ, which can lead to faster resolutions, and now plan to incorporate LiDAR 3D laser scanning to help us more efficiently target areas for vegetation management.



Some of the improvements to our storm response



New powercut logger tested for **30,000** concurrent users processing **12,000** transactions per minute, 4 times the number we saw during our largest storm).



Increased our overhead line resource to have access to over **300 overhead line operatives** during a major incident.



New cloud based telephony system tested up to **3,000** concurrent calls, 6 times the number we saw during our largest storm.



Procured **100 generators** able to restore power to customers and developed ability to deploy them without utilising our repair teams.







Increased welfare deployment capability through National Caterers Association with access to catering partners to support customers.



Created the ability to surge our contact centre to **over 500 calltakers** through multiskilling our existing staff, five times our normal capability.

Climate Resilience - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
CR1 Maintain flood defence resilience at all major substations.		<p>We are nearing the end of our extensive flood mitigation programme. The majority of our flood defence works were carried out in ED1 and the small number of remaining schemes are being completed as part of asset replacement works to maximise synergies. As yet, no additional sites have been identified as being at risk of flooding. This is under review as the available data evolves.</p> <p>As the majority of our proposed flood defence spending from our ED2 plan was disallowed, we are currently not progressing with work to proactively improve defences at distribution substations. To date, 212 of the 215 at risk sites have been completed in line with our flood defence programme, with two sites completed in 2023/24.</p>	<p>Complete the planned asset replacement works at the outstanding substations to ensure all identified at risk sites are resilient to flooding.</p> <p>Continue to assess changes in flood risk data to identify sites which become at risk and look to implement appropriate flood defences.</p> <p>Investigate innovative ways of funding distribution substation flood resilience.</p> <p>Work is scheduled to complete works at the remaining three sites, with all sites having passed through the planning and design stage. These works will take place at the same time as asset replacement works planned at these sites.</p>
CR2 Reduce the impact of storms on our network through a comprehensive programme of vegetation management.		<p>We have accelerated our vegetation management programme, which is progressing well in both license areas with a fully resourced programme that is currently delivering numbers ahead of those originally expected.</p> <p>Our programme of works is designed to ensure that we comply with the enhanced resilience requirements as laid out in ETR132 – ‘Improving resilience of overhead networks under abnormal weather conditions’ as well as the more general requirements for vegetation management.</p> <p>Work is ongoing to ensure that contracts are in place to carry out LiDAR surveys on the network to help target our future vegetation management.</p>	<p>We will continue to implement and monitor our vegetation management programmes and move to the next stage on conducting LiDAR surveys in a timely manner to allow surveying work to commence in 2025/26. The outputs from the LiDAR surveys will also enhance our vegetation management programme.</p> <p>We will issue our fourth round Adaption Report to DeFRA under the Adaptation Reporting Power by close of 2024. We plan to commence work on updating our ED2 climate resilience strategy to prepare for the RIIO-ED3 period.</p> <p>We continue to participate in resilience exercises instigated both by local resilience forums, Northern Powergrid and Berkshire Hathaway in order to improve our response and assist others in preparing theirs.</p>
CR3 Improve resilience through collaborative work on interdependencies to reduce the risk of cascade failures across systems.		<p>We continue to work with the ENA Climate Change Adaptation working group which includes all gas and electricity transmitters and distributors to ensure a coherent approach to adaptation across the energy sector.</p> <p>We have participated in cross -sector infrastructure forums for Yorkshire and the Northeast with an adaptation focus and will continue to push forwards with this collaborative work to ensure we are clear on where interdependencies lie and how we can best manage them. We have also been actively involved in a number of projects under the national CS-NOW project to seek to understand wider national interdependencies.</p> <p>We have undertaken interactions with the Environment Agency and are looking to understand how we can work collaboratively within our Regulatory framework.</p>	<p>Continue to the dialogue with other regional infrastructure providers and work to identify interdependencies and participate in ENA, Ofgem and other national working groups to foster a coherent approach to adaptation.</p> <p>Explore options for working collaboratively with the Environment Agency.</p>
CR4 Maintain operational resilience and embed long term resilience across our asset programmes, working with others to better understand future risks.		<p>We have continued to expand our fleet of drones and pilots and look to understand how best to use them to assess storm damage and more effectively target work.</p> <p>We continue to review and revise our designs and specifications, both at a Northern Powergrid level and through national forums, to ensure that assets remain fit for purpose for the duration of their expected life.</p> <p>As part of our response to Storm Arwen, we have carried out a thorough assessment of the resilience of our overhead lines and identified areas where changes to the specification and build would inject additional resilience into the network and await direction from Ofgem to proceed.</p> <p>We are working on a number of climate related research projects through the Berkshire Hathaway and in collaboration with local academic institutions. These are all still in the development stage but we are hopeful that we will begin to see some useful outputs over the next year or two.</p>	<p>Follow through on outputs from ongoing research projects and continue to seek out and support projects as they are developed.</p>

Maintaining a safe and resilient network

Safety

Ensuring that our colleagues return home safe and sound at the end of every working day is our highest priority and we are proud to remain a strong safety performer within our industry.

Reliability & Availability

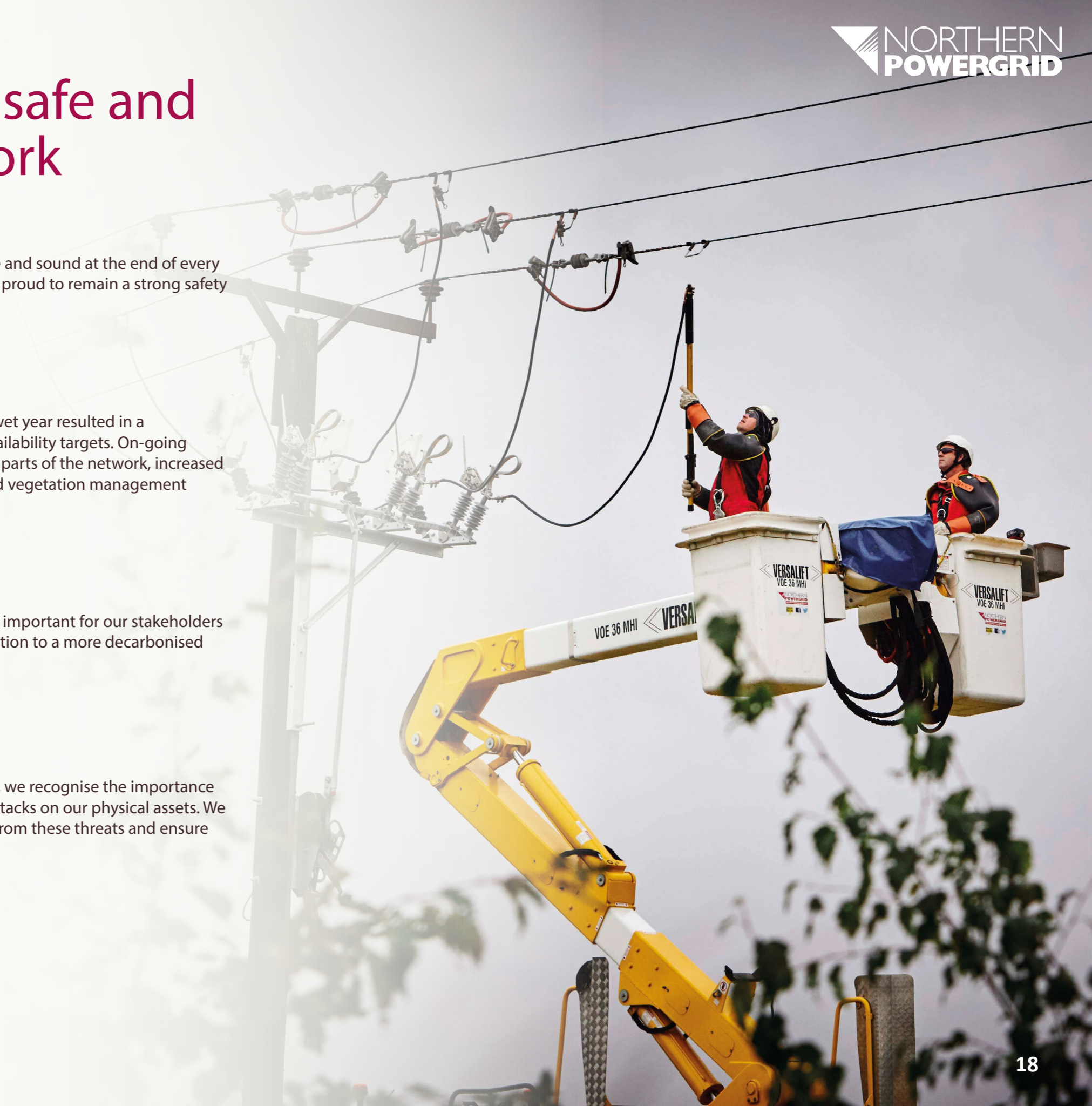
A high number of storms and an abnormally wet year resulted in a challenging year against our reliability and availability targets. On-going targeted asset replacement investment in key parts of the network, increased deployment of automation and an accelerated vegetation management programme have laid a solid recovery path.

Asset Resilience

The resilience of our network has always been important for our stakeholders and has become increasingly vital as we transition to a more decarbonised world.

Physical & Cyber Resilience

As a part of the Critical National Infrastructure, we recognise the importance of being alert to the risks of cyber threats or attacks on our physical assets. We have a clear plan to keep our network secure from these threats and ensure the power keeps flowing in our region.



Safety

Ensuring that our colleagues return home safe and sound at the end of every working day is our highest priority and we are proud to remain a strong safety performer within our industry.

A proven track record on colleague safety, but we must do more

Northern Powergrid has always been a strong performer in operational safety within our industry. In 2023/24, we were awarded an Order of Distinction by the Royal Society for the Prevention of Accidents in recognition of achieving 23 consecutive years of Gold safety awards in our Northeast licence area and 20 consecutive years of Gold awards in the Yorkshire licence. However, we recognise that we must do more to drive down accidents even further. In the year we suffered nine recordable accidents across a contracted team of nearly 3,000 colleagues. Fortunately, the majority of these incidents were relatively minor, though one incident did result in a burn during low cable jointing work. We plan to drive improvements in our safety culture throughout ED2, using the HSE's Safety Climate tool to assess gaps in our culture and use this learning to shape our behavioural safety training going forward.

Consistent reductions in preventable vehicle accidents

As a company that covers over 25,000 km² of network area, driver safety is another key area of focus for us. We have a comprehensive programme of driver training, with introductory sessions for all new starters and regular refresher training for all field colleagues. This focus has helped drive down the number of preventable vehicle accidents (PVAs) we have experienced in recent years. In 2023/24 our colleagues drove 16.1 million miles, but we recorded only 29 preventable vehicle accidents in that period, that's just one accident for every 550,000 miles driven.

Keeping our contractors safe

As well as our own colleagues, we also feel it is important to drive improvements in the rate of accidents that are suffered by contractors that work on our behalf. We have increased the volume of training activities for contractors, where we have set higher safety expectations and more stringent targets, and increased the number of safety audits to check these new standards are being met, making nearly 1,200 audit visits in 2023/24. This approach is already having an impact and in 2023/24 our contractors only recorded four accidents, the lowest number we have seen in over a decade.

Delivering safety education in our community

Northern Powergrid has long been dedicated to getting our safety messages out to our wider community, having delivered our messages to nearly 400,000 school ages children in the prior price control period. In ED2 we have continued this trajectory, reaching a further 39,000 pupils in 2023/24. We have also begun a cross-industry project, alongside Scottish Power, UK Power Networks and Energy Innovation Centre to find solutions that will drive down the number of contacts we see from agricultural and haulage vehicles. This innovation project will build upon our existing engagement on avoiding overhead line strikes, which has already seen the number of strikes recorded in our area decrease by 37% in the last three years.



20 years
of RoSPA Gold safety awards



1,200
safety audit visits



37%
decrease in the number of overhead
line strikes in the last 3 years

Safety - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
S1 Maintain our position as an industry-leading safety performer delivering continued improvement by focusing on leading causes of injuries, and continuing to reduce exposure to high-risk activities	●	<p>In 2023/24 we experienced nine OSHA recordable accidents. These resulted in an OSHA recordable rate of 0.34 incidents per 200,000 working hours.</p> <p>We also experienced 29 preventable vehicle accidents (PVAs) in the year, which equates to just one accident every 550,000 miles driven. In 2023 we set our best ever annual performance for PVAs with just 25 in the year.</p>	<p>We plan to drive improvements in our safety culture throughout ED2, using the HSE's Safety Climate tool to assess gaps in our culture and use this learning to shape our behavioural safety training going forward.</p> <p>During 2024-25 we will be working with our Procurement colleagues to tender the requirement for our enhanced fleet vehicles which will enable us to deploy the latest technology in the market that will enable us to further reduce our driving risk.</p>
S2 Expand safety management standards within our supply chain, achieving a 50% reduction in contractor accident rates.	●	<p>In the first year of the ED2 period our service providers recorded four OSHA recordable accidents which is the lowest number of recordable accidents over the ED1 / ED2 period and puts our service providers ahead of the trend to achieve a 50% reduction in recordable accidents. This is thanks to consistent messaging on safety expectations, more stringent targets, and nearly 1,200 audit visits against a target of 1,490 visits.</p>	<p>In 2024-25 we will establish a collaborative arrangement with our service providers to utilise Teams as a more effective approach to sharing information. We will also set up a quarterly safety forum that will enhance our respective learning from incidents and best practice.</p>
S3 Improve the standards of health and mental well-being among our workforce	●	<p>We have collaborated with other DNO through the ENA's Occupational Health group to provide sector level guidance on the standards to be developed for fatigue management arrangements.</p> <p>We also commissioned the Centre for Human Factors from Hull University to support the ongoing fatigue management work through the development of practical training material for companies to deploy.</p> <p>We are now engaging with this same group to undertake an assessment of our fatigue management arrangements and bring their broad industry expertise to support future enhancements to our processes and controls.</p>	<p>In 2024 we will engage the Centre for Human Factors to undertake an assessment of our fatigue management arrangements and bring their broad industry expertise to support future enhancements to our processes and controls.</p> <p>Work is underway to baseline what our health and well-being management system needs to have in place to meet the requirements of the ISO45003 framework; we are using the accreditation we have in place for ISO45001 to inform that baseline. From this baseline we will develop and deliver our plan to achieve external accreditation.</p>
S4 Deliver targeted intervention and education programmes in our communities	●	<p>We have been working in conjunction with the Energy Innovation Centre (EIC) to find a solution to prevent inadvertent contact by vehicles with our power lines. The overhead line avoidance project includes an innovation partnership with three innovators, Frazer Nash Consulting, Open Grid Systems and Sheffield Hallam University.</p> <p>This innovation project builds upon our existing engagement on avoiding overhead line strikes, which has already seen the number of strikes recorded in our area decrease by 37% in the last three years.</p> <p>Elsewhere, an estimate 39,000 school age pupils were engaged by our electrical safety lessons.</p>	<p>We will be attending the Great Yorkshire Show in July 2024 which is the largest agricultural show in Yorkshire with an attendance of circa 134,000 visitors over a four-day period. We will use that opportunity to engage with stakeholders on our key safety messages.</p>

Reliability & Availability

A high number of storms and an abnormally wet year resulted in a challenging year against our reliability and availability targets. Increased deployment of automation, an accelerated vegetation management programme and operational improvements have laid down a solid recovery path.

How our automation programme is changing your network for the better

Our Automated Power Restoration System (APRS) does what it says on the tin - it links to the remote control switches on our high voltage network and allows us to restore customers on undamaged parts of the network automatically when a fault occurs.

APRS remotely restores customers within 3 minutes of being interrupted instead of needing an operative to visit the site and manually complete the switching - this means what used to be a one to two hour interruption can now be restored in minutes.

During the last 10 years, we have been rolling out APRS and remote switches across our network and it now covers over 3.2 million of our 3.9 million customers.

A key part of our ED2 plan is to continuing deploying remote switches and automation to reduce the impact of faults on our customers - we have already invested in 1,700 more remote switches and enabled APRS on more than 200 more circuits in 2023/24.

1.2 million

customers restored within 3 minutes by our Automated Power Restoration System

Reliability performance

The 2023-24 regulatory year was challenging for our reliability performance with considerably higher than normal rainfall levels affecting us across both licence areas. This included nine consecutive months of higher-than-normal rainfall in Yorkshire and 51% more rainfall in the Northeast in the second half of the year.

Despite this, customer interruptions performance improved 3.1% year-on-year to 52.5 but missed Ofgem's reliability targets which stepped down significantly between 2022/23 and 2023/24.

Customer minutes lost increased 6.4% after seven named storms, and severe weather. This is a record number of annual storms since naming conventions began in 2015.

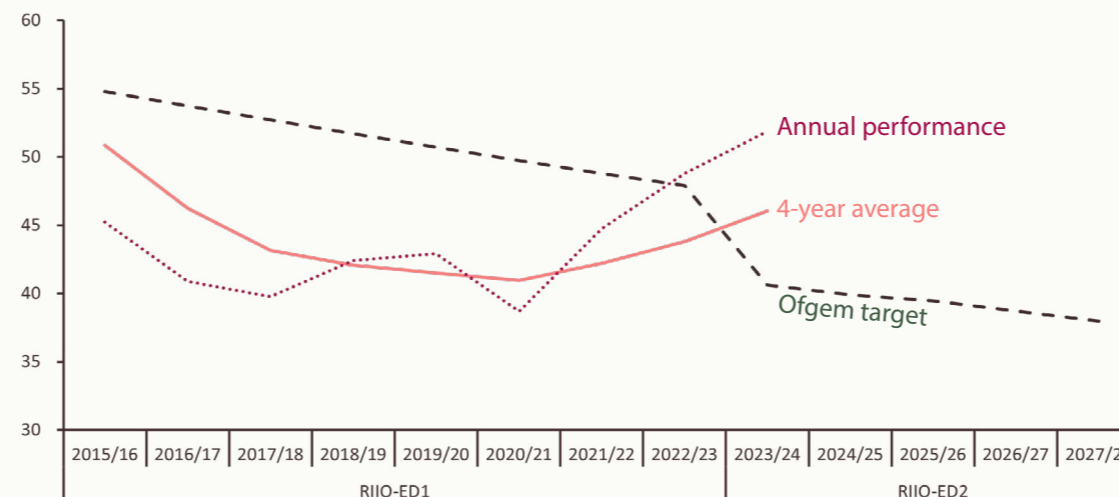
Automation deployment

We are already delivering on the automation programme we committed to our customers in our ED2 plan despite lacking funding from Ofgem, though this will naturally result in a trajectory to meet the target rather than a step change. As part of this programme, we have deployed 1,305 new ground mounted remote switches. Moreover, a further 412 HV circuits were enabled within our automated power restoration system (APRS).

Our work on the secondary SCADA network continued, the upgraded communications network improves the speed and stability of performance of the whole automation system.

Customer Minutes Lost

Customer minutes lost is a measure used to show how much power cuts impact customers. It is calculated by taking the number of people impacted by faults, times by the restoration time of those faults, and then divided by the total number of customers - basically, it is the average time an average customer can expect to be off supply in a year.



Accelerated tree-cutting programme

Our performance has also been impacted by vegetation, with increased growth driven by the wetter weather. We have accelerated our programme of tree cutting and in 2023/24 we cut back vegetation from 22,410 spans on our network, making around 1,850 km of our network more resilient to power cuts. This will continue going forward and be supported with the use of LIDAR to help more effectively target the work.

MicroResilience

Our MicroResilience project will allow us to keep customers on supply even after faults have taken out higher voltage circuits. Initial lab trials of the micro resilience proposal were successfully completed in 2023, this has been followed by a site installation phase where the hardware installed at the completed Byrness micro resilience substation.

Worst-served customers

We have identified 19 schemes where we will invest in improving performance for 2,107 of our customers that experience the worst level of service on our network. In particular, our engagement has emphasised prioritising a reduction in the length of interruptions they experience which is where we will target these investments.



8.8/10
satisfaction with power cuts



3%
reduction in the number of power cuts



50%
increase in our pole replacement rate

Case Study: Using technology to predict faults and repair them proactively

Our Foresight innovation programme has set the foundations for delivering pro-active fault identification and repair.

The low-cost devices that we deploy onto our low voltage network provide data that allows us to detect pre-fault signatures. This allows us to deploy smart fuses - these automatically restore the circuit when an intermittent fault occurs (which is the precursor to damage to the network).

As more intermittent faults occur, the technology helps locate the fault and identify where repairs may be necessary ahead of an interruption to customers.

5,566

guards deployed on our low voltage network

2,777

faults restored without manual intervention in 2023/24

Reliability & Availability - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
RA1 Deliver a ≥12% reduction in the number of power cuts	●	<p>After a challenging year for reliability performance, with considerably higher than normal rainfall levels affecting us across both licence areas, power cuts performance improved 3.1% year-on-year but missed Ofgem's reliability targets which stepped down significantly between 2022/23 and 2023/24. The duration of power cuts increased 6.4% after a record seven named storms, and severe weather that did not meet exemption criteria.</p>	Further develop monitoring equipment including the innovative Streetsense at home network voltage recorder.
RA2 Deliver a ≥25% reduction in the duration of power cuts	●	<p>This year has seen 1,305 HV automation remote control switches commissioned onto the system. This work enabled a further 67 primary substations to be incorporated into our automated power restoration system (APRS), benefitting 200k extra customers and taking total coverage to 3.2m</p> <p>Our vegetation management programmes have faced increased growth, driven by the wetter weather. We have accelerated our programme of tree cutting and in 2023/24 we cut back vegetation from 22,410 spans on our network, making around 1,850 km of our network more resilient to power cuts.</p>	Roll out live monitoring to verify pre-fault activity, proactive determination of fault locations, on site verification and post intervention assessment.
RA3 Reduce by 50% the annual number of customers that experience a 12- hour power cut	●	<p>In 2023-24 we suffered a record number of named storms and other severe weather that did not meet exception criteria which impacted performance on both 12- and 6-hour faults.</p> <p>Recognising the trajectory of performance in the year, we started to set out modernised management frameworks and build in mechanisms to prioritise resource response.</p>	Complete additional training for our workforce and invest in upskilling our team with enhanced skill sets and authorisations, as well as implement our Duty Manager approach to facilitate optimisation of dispatch response and improved 24/7 delivery.
RA4 Reduce by 15% the annual number of customers that experience a 6-hour power cut	●	<p>We have been working with suppliers of our LV fault management automated restoration devices to overcome a number of technical issues that have so far affected roll out. This has ensured that we are now in a position to roll out devices more quickly.</p> <p>We are developing the tools to support our ability to take decisions on pre-fault information coming from network monitors and through our Foresight fault prediction programme. This will allow us to avoid some faults from happening through targeted reinforcement and also make it easier to locate the source of faults, and possible solutions when they do occur.</p> <p>Our MicroResilience project will allow us to keep customers on supply even after faults on higher voltage circuits. Initial lab trials of the proposal were successfully completed in 2023.</p>	Looking ahead we will soon be implementing enhancements to our civils/excavation activity, in conjunction with our service providers, which builds in enhanced incentives on key response metrics.
RA5 Ensure 99% of our customers do not experience 5 or more interruptions in a year	●	<p>We are working to deliver significant improvements in network operability to manage outage risk and proactively identify and deliver solutions to emerging problem networks such as using data to highlight hotspots and acted upon them.</p>	Close out our preferred strategy and progress project proposal and budget approval for a trial using other preferred foresight technology option. Install new technology as a trial in a worse performing feeder.
RA6 Deliver £4.3m of targeted investment to improve network performance in rural areas for 2,835 worst- served customers predominantly in rural areas	●	<p>Long-term investment will allow us to move customers out of the multiple interruption category. We have conducted market research to review technology options for our HV Foresight project which will be trialled in areas with poor performing circuits.</p> <p>We have developed our worst served customer (WSC) investment scheme, planning differing approaches depending the characteristics of that part of the network. This resulted in 19 schemes being identified to facilitate works for 2,107 customers.</p> <p>Recognising the importance of this customer group and our stakeholder engagement has helped us develop our methodology for implementing WSC projects, in particularly that they preferred the prioritisation of the duration of supply interruptions experienced.</p>	Review the data categorised as HV faults data to determine if using such data from LV devices for HV foresight would be beneficial and plan further roll-out accordingly.
RA7 Provide customers with 10 days' notice of planned interruptions, operate only in daylight hours during winter months and cancel if temperatures are <0°C	●	<p>In 2023-24 75% of customers received at least 10 days' notice of a planned power cut. We see the ideal window of notice as being between 10 and 14 days and aim to provide 50% of all planned power cut notices within this window. Within 2023-24, we matched this target. Our CRM Go scorecard allows Regional managers to track performance against notice and the delivery of several other customer updates and target improvements where necessary.</p> <p>We always carry out our planned work during daylight hours during winter months. In 2023/24, 183 outages were postponed due to adverse weather conditions, including 16 that where the temperature dropped below 0°C</p>	Regional managers will continue to target improvements in notifying customers of planned power cut armed with a breakdown by teams and individual engineers.

Asset Resilience

The resilience of our network has always been important for our stakeholders and has become increasingly vital as we transition to a more decarbonised world.

Maintaining a resilient network through targeted asset replacement

At Northern Powergrid we are constantly monitoring the health of our network assets, assigning assets a risk value based upon their condition, probability of failure and the consequence any failure on our customers and stakeholders.

This allows us to prioritise our asset replacement, focussing on those which are in most need of attention and ensuring we achieve improvements to our reliability whilst providing the best value for money for our stakeholders.

We delivered 11% of our ED2 Network Asset Risk Metric targets in 2023-24 and are on track to deliver all our outputs by the end of ED2.

This is characterised by unprecedented volumes of pole replacements. As such, we have already put new contracts in place and increased our replacement rates by 50% after the first year. We also delivered a significant number of major substation replacement works, with further ramp up planned over the remainder of the regulatory period.

We have already put new contracts in place for this work and increased our replacement rates by 50% going forward. We also delivered a number of major substation replacement works in the first year of ED2, with further ramp up planned over the remainder of the regulatory period.

Keeping the transition to net zero at the forefront of our asset replacement decisions

We recognise the key role we play in the long-term transitions to net zero, where increased reliance will be placed on electricity to meet our country's decarbonisation goals.

As such we are prioritising asset replacement work towards assets that can also deliver the capacity increases required by our net zero pathways, up-sizing our assets where required.

To help with this effort, we have updated our selection criteria for all core programmes to consider capacity related benefits alongside a raft of improvements to our asset risk data and modelling.

We have established a new, more robust governance framework around the ongoing maintenance and use of the criteria, ensuring a synergy between asset condition decisions and overall load capacity growth.

Utilizing increased data and technology innovations to improve the efficiency of our decision making

We are targeting an ambitious improvement in our decision making capability to further optimise our asset investment programmes. This will be achieved through the use of more complete and accurate data and smarter decision-making tools for which we have mobilised several initiatives during the first year of ED2.

We have carried out a trial using drones to capture high resolution imaging surveys of our overhead assets, as well as using artificial intelligence to analyse the data this creates. We are now tendering for a supplier who can provide this service on a larger scale going forward.

Elsewhere we are working with our service provider to trial the use of innovative transformer monitoring at our most strategic substation sites and expect to have the first installation complete by the end of 2024.

Case Study: Overhead line replacement works in Craster



As part of our commitment to improving reliability, we continue to invest in our overhead network to deliver benefits for customers. During the period, we invested over £350,000 to upgrade the network in Craster, Northumberland which involved replacing 50 poles and over 4km of lines to ensure a more resilient network for the community.

 **4km**
of overhead line replaced

 **50 poles**
replaced



 **£350,000**
of investment

Working in partnership with local residents, Northumberland County Council and landowners, the programme of work was completed at a time to reduce any impact for residents living in the area, and for tourists visiting during the school summer holiday period.

Daniel Thomas, Northern Powergrid's Programme Manager said: "We're pleased the investment scheme is now completed and we'd like to thank residents and customers for their patience and understanding whilst the upgrade took place."

The overhead power supply serving customers in Craster, Dunstan and Howick is now enhanced and will improve the security of electricity supplies to communities now, and into the future."

Asset Resilience - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
<p>AR1 Efficient long-term transition to net zero through maximisation of synergies between load-related and asset renewal expenditure</p>		<p>Our asset renewal programmes are underpinned by selection criteria that are used to identify and prioritise work. We have adapted this criteria to include load-related decisions as well as asset risk management. The outcome that we are working towards will be delivered through an enduring change to our business planning processes, including the introduction of a new web-based system for risk data (Invest), and smarter integration with other systems and data.</p> <p>We have updated our selection criteria for all core programmes (including substation replacements and overhead line rebuilds) whilst also establishing a new more robust governance framework around the ongoing maintenance and use of the criteria. We have rebuilt our core risk models using latest health and criticality data and developed new candidate selection tools that optimise decision making across multiple investment drivers.</p> <p>We have also established a new Asset Planning team to provide a more consistent structure for candidate identification from LV cable replacements through to major substation replacements.</p>	<p>Develop interfaces between our new Invest tool and the corporate asset systems.</p> <p>Establish a robust intervention tracking process that measures the benefits of each scheme.</p> <p>We will publish our first bespoke report to measure synergistic benefits stemming from asset replacement work.</p>
<p>AR2 Deliver our investment plan to improve network health through efficient decision making, deploying innovation and optimisation of interventions</p>		<p>We have engaged with multiple service providers regarding high resolution imaging surveys utilising drones including the use of artificial intelligence. This involved carrying out a trial survey programme, all of which has informed the development of our tender process for 2024/25.</p> <p>We are working with our service provider to trial the use of innovative transformer monitoring at our most strategic substation sites during the period and expect to have the first installation complete by the end of 2024 following successful preparatory works in 2023/24 including the developing of our specification.</p> <p>We continue to report on the condition and health of our asset base annually through the Network Asset Risk Metric (NARM) regulatory framework. We have delivered 11.0% of our ED2 target to date and are on track to deliver our outputs by the end of ED2 which will be characterised by unprecedented volumes of pole replacements later in the period. We have already put new contracts in place and increased our replacement rates by 50% after the first year and also delivered a significant number of major substation replacement works, with further ramp up planned going forward.</p>	<p>We expect to be fully mobilised with our drone inspection service provider by the end of 2024/25.</p> <p>We are aiming to complete first installation of online DGA monitors at one of our 132kV substations by the end of 2024.</p> <p>We have made significant changes to our asset renewal programmes as we ramp up to the required run rates, particularly in relation to wood pole replacement, which will include the use of a new innovative pole strengthening solution to manage pole integrity.</p>

Physical & Cyber Resilience

As a part of the Critical National Infrastructure, cyber resilience, physical security and the management of these risks are all taken very seriously. We have a clear plan to continuously improve and respond to emerging threats to keep our network secure and ensure the power keeps flowing in our region. Sharing our programmes of work and the work we are doing can itself introduce additional risk to our posture so below we outline instead some of the indicators of good practice and performance that seeks to demonstrate our overall position.



Rigorously testing we meet international standards and best practice on information security and management of cyber risk.

Since 2017 we have sought to ratify our posture when it comes to information security by certifying against the ISO27001 standard, something we have held ever since, expanding its scope to fully encompass our business operations. In 2022 we achieved the ISO standard specific to the operation of energy management systems, ISO27012 and in this year we have upgraded to the latest version of the standard.

Alongside our annual covert and overt penetration testing, internal audit programme and emergency planning and testing initiatives we spend time verifying that we have the controls in place and that they can be relied upon to mitigate the risks as we see them. More over, that in the event of controls failing we have adequate plans in place, that have been tested, to recover from these events.

This approach of verification and course correction is a common mode of operation for our business and has stood us in good stead over the years. It should serve, for our stakeholders, as an indicator of good practice and that we do not take our responsibilities lightly in this area, we want to know that we're doing all that we can to protect our customers and the critically important services we provide society at large.

A strong performance on phishing protection, helping to protect our customers data and their power supply from cyber-attacks

Phishing, the act by which criminals send emails that can appear legitimate but are actually designed to gain access to recipient's information or to gain access to system log-in credentials, is a significant risk for not only individual people in their personal lives, but also large businesses like ourselves.

In 2023, 50% of UK businesses suffered a cyber security breach, with 84% of these occurring as a result of phishing. As a Critical National Infrastructure business, the risk of phishing and other forms of cyber attack is high and has the potential to seriously disrupt power supplies in our business, meaning we take the risk very seriously.

We have a comprehensive training programme to teach our colleagues about the dangers of phishing and what warning signs to look out for and all our team receive refresher training every year. All emails from outside the company are flagged with a warning that they are external, with advice on what to look out for with attachments, and any links are blocked until it is confirmed the email is from a trusted source.

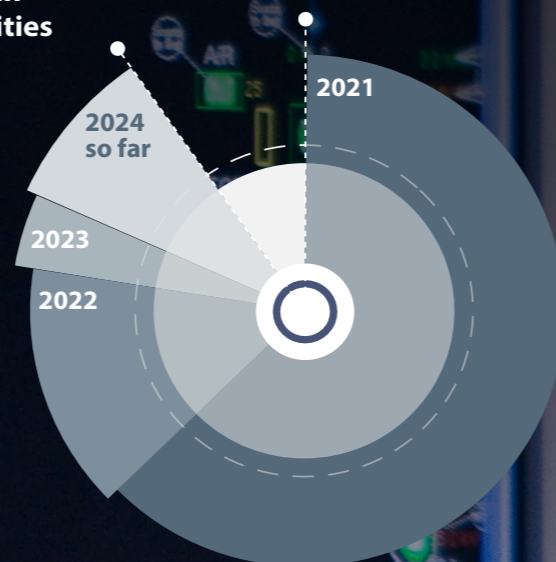
We also take part in weekly phishing test exercises alongside the other companies in the Berkshire Hathaway Energy Group and our performance is very strong, with a phishing test success rate of 99.96% in 2023/24. That's just 38 failed clicks across 115,000 test emails sent.

Indicators of good practice:

99.96%
phishing test success



90%
reduction in vulnerabilities







Protecting our assets against physical attacks

Whilst cyber-attacks are an ever evolving concern, we still need to maintain a focus on protecting our various power assets from the risk of physical attacks. It is estimated that metal theft costs the UK economy half a billion pounds every year. Both metal theft and vandalism to our assets not only cause unnecessary power outages, but can also pose a significant safety risk to both the perpetrators and the wider public.

To combat this risk, we have robust security measures in place which we are continuing to develop in ED2. We have invested in developing our own in-house Alarm Receiving Centre to monitor all of our physical security infrastructure, alarms and CCTV. This allows us to respond efficiently and effectively to incidents and alarms.

We also plan to roll out a suite of intelligent perimeter fencing upgrades to our most vulnerable sites. In 2023/24 we completed risk assessments at all our substation sites and have identified an initial group of 22 substations with an increased risk of criminal activity or where such activity could lead to more significant outages or safety risks. Roll out of these upgrades has now begun with two completed in the year and many more planned for 2024 and beyond.

Physical & Cyber Security - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
PC1 Protect our customers' information		<p>All our colleagues receive annual phishing and cyber security training, including the launch of a new cyber security training tool this year. We also hold weekly phishing test exercises using mimicked phishing emails and our phishing test success rate for 2023/24 stood at 99.96%.</p> <p>We have deployed advanced endpoint protection software to our computer assets, and this has resulted in a 46% reduction in the technical vulnerabilities that exist in our IT systems.</p> <p>We continue to hold certification for the ISO27001 and ISO270019 standard of information security management.</p> <p>So far in ED2 we have not suffered any breaches of customer information.</p>	<p>Transition our ISO27001 Certification to the latest advanced version of the standard.</p> <p>Deliver advanced cyber security training to colleagues in high risk roles and continue to educate and test all colleagues on their security awareness.</p> <p>Target a further reduction in technical vulnerabilities by 50% in 2024.</p>
PC2 Protect our customers' power supply from cyber-attacks		<p>As well as the phishing and cyber protections listed above, we have deployed software to our operational technology IT systems that prevent unauthorised software or malware running on the systems.</p> <p>We have migrated our cyber security monitoring to a purpose-built Security Operation Centre and onboarded a further 170 endpoint protections to this centre.</p> <p>So far in ED2, we have not suffered any loss of customer supply as a result of cyber-attacks.</p>	<p>Implement improved access management systems and expand the coverage of systems monitored by the security operations centre.</p> <p>Refresh firewall devices, and introduce abnormality detection software.</p> <p>Deliver advance training to colleagues that work with our operational technology.</p>
PC3 Protect our customers' power supply from physical attacks at our major substations.		<p>We continue to utilise and develop the capabilities of our in-house Alarm Receiving Centre to monitor all of our physical security infrastructure, alarms and CCTV. This allows us to respond efficiently and effectively to incidents and alarms.</p> <p>In 2023-24, all our substations were placed in risk categories based upon likelihood of theft or vandalism, and the impact that might have on our network, and we identified an initial tranche of 22 substations where we want to improve the perimeter security as well as other elements of the integrated security systems on site.</p>	<p>In 2024-25 our perimeter security upgrade plans will move into their respective delivery phases. In addition, we will be working with our parent company BHE Energy to develop a standardised security risk assessment tool that we will apply to all our major substations as a basis for security assessing upgrade requirements and security investment decision making.</p> <p>We also plan to improve perimeter and physical security at our Operational Technology hub sites, with an ambitious plan to deliver these improvements in 2024/25.</p> <p>We will continue to install the two factor authentication card access system at our most critical sites in 2024-25.</p>
PC4 Ensure our communications systems are power resilient to help our engineers safely and quickly restore power.		<p>We have completed research into potential options to make our communication systems more resilient and have created an investment appraisal to go out to tender for a Private Mobile Radio solution.</p>	<p>Whilst completing the tender process to find the enduring solution, we will continue to monitor progress on the DEZNZ power resilience coverage maps for low data rates and external and internal voice communication capabilities.</p> <p>We will investigate the potential allocation of UHF spectrum communications and Starlight satellite services as solutions for improving communication resilience in the field.</p>

Meeting the needs of consumers & network users

Customer Service

The first year of ED2 has seen a significant steps forward in our customer service provisions, with several new initiatives, leading to a notable improvement in customer satisfaction.

Vulnerable Customers

We have ramped up existing programmes designed to support vulnerable customers and successfully launched several new ones.

Stakeholder Engagement

Stakeholder engagement underpins what we do here at Northern Powergrid, it was central to our business plan for 2023-28 and we continue to engage with customers to help shape our activities, as well as using expert stakeholder groups to provide robust challenge to what we do, and how we do things.

Our Communities

It is our goal to be a force for good in our region, going beyond simply keeping the power flowing, to make a positive contribution to the communities we serve.



Customer Service

The first year of ED2 has seen a significant steps forward in our customer service provisions, with several new initiatives, leading to a notable improvement in customer satisfaction.

Driving improvements in customer satisfaction

Everything we do in customer service is aimed to help our customers and drive higher levels of customer satisfaction. In 2023/24 we achieved an overall customer satisfaction score of 90.1%.

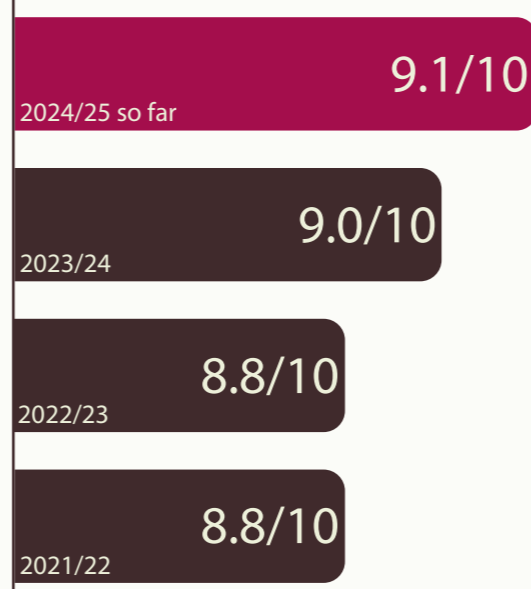
This is a 1.8% improvement over our performance from 2022/23 with the biggest improvement coming in connections, where our scores grew by 3.7% as a result of the system and people improvements we have made in that area. We have continued to drive improvements in customer service, with satisfaction in 2024/25-to-date standing at 91.0%, meaning we have improved satisfaction by 2.7% so far in ED2.

Increased on-site support and contact convenience

In 2023/24 we launched our team of 12 Proactive On-site Responders, to deploy to customer on-site, where they are experiencing a power cut over 6 hours. This project has been a great success, with Responders supporting more than 90% of customers who suffer a long duration fault. In response to customer feedback, we have now extended this provision to trial arriving on site at the four-hour mark where possible.

We have also improved the range of contact channels that our customers can use to get in touch with us. In 2023/24 we launched both our WhatsApp and Reply Test Messaging contact channels, both of which allow customers to hold two-way text conversations from a computer, tablet or mobile. This takes our number of digital contact channels to six, alongside traditional telephone channels.

Customer Satisfaction Score



Efficiently dealing with complaints

Dealing with customer complaints is a key area for improvement in ED2. In 2023/24 performance was disappointing with a complaint metric score of 5.58. 88.8% of complaints were resolved within 31 days and 77.7% by the end of the next working day. We have clear plans to address these levels of performance.

Our Customer Care team have created regional hubs where advisors are assigned to each. This has resulted in a closer working relationship, making it easier to allocate complaints to the regions where the issue took place. Regional teams track complaint clearance three times per day, aiming to resolve more complaints on the first day. It also allows for on-going dialogue, creating a consistency of approach between the region and the regional hubs. We have also developed new complaint coding, allowing us to address common themes in complaints more efficiently.

This increased focus is already paying off. Since April our Day+31 resolution performance has grown to 96.5%, which has helped to reduce our complaint metric score by % to 2.59.

Being there for our vulnerable customers

Many of our customer service initiatives are particularly used to support our more vulnerable customers during a power cut. Our Proactive On-site Responders aim to door knock at every address with a customer registered on our Priority Service Membership scheme.

In 2023/24 they spoke to 9,800 PSM customer face-to-face on faults that exceeded six hours. Our updated customer service vans are equipped with battery generators which allow up to provide temporary power to our most vulnerable customers who require a constant supply of electricity for their medical needs.

We also aim to pro-actively contact PSM customers via phone whenever they experience a fault, meaning as soon as a power cut happens our customers are offered a wider range of support. In the year, we contacted 213,000 PSM customers who suffered a power cut, including 87% of high-risk customers within the first hour of their interruption.

Case Study: Pro-active On-site Responders

One of most significant new commitments for ED2 was to develop a team of Proactive Responders to provide in-person, on-site support for customers suffering faults that last more than six hours.

We recruited a team of 12 responders, split across four regional hubs, with each team of three covering 12 hours a day, 7 days a week, often visiting multiple faults each day. Responders travel to faults in fully equipped Customer Service Vans and provide face-to-face updates and advice to customers, provide on-site services like hot drinks, snacks and charging facilities, check on the needs of PSM customers, and register new sign-ups to the PSM.

The service has proved a great success in Year 1 of ED2. Originally, targeted to support 75% of customers on longer duration faults, our responders managed to deploy to over 3,500 faults, covering 93.7% of customers who experienced a fault longer than six hours. During these deployments, responders spoke to more than 38,000 customers face-to-face, including 9,786 PSM customers, and provided 52,000 personalised services to support customers.

We are very pleased with the successes of the Proactive Responder team so far and have decided to extend their reach. From 2024/25 they will aim to arrive on site even earlier, supporting as many customers as possible from the four-hour mark onwards, providing support to an even wider group of customers.




93.7%
of customers supported who experienced a fault that exceeded six hours

3,612
deployments of our customer service vans

9,786
priority services members supported face-to-face so far



Customer service - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
CS1 Improve customer satisfaction by introducing new contact channels, greater on-site support and choice in booking slots for planned services, providing increased choice and flexibility in how and when customers do business with us.		<p>Our customer satisfaction is 91.0% in 2024/25 so far, this puts our improvement in customer satisfaction at 2.7% in ED2 to date.</p> <p>Two new digital contact channels – WhatsApp and Reply Text Messaging, both of which allow two-way text conversations.</p> <p>Proactive On-Site Responder team fully resourced and deploying seven days a week. 93.7% of customers on faults exceeding six hours supported.</p> <p>We have put in place the capability for customers to request specific appointments across a range of planned services, including on evenings and weekends.</p>	<p>We will explore the use of video technology to support customers and provide more insightful information.</p> <p>In 2024-25 we are reducing our deployment time to 4 hours, ahead of our 6-hour commitment, to provide support to customers as early as possible.</p> <p>In 2024 we take delivery of our new Customer Support Vehicles to provide the best support possible to our customers on-site.</p>
CS2 Improve the speed of complaint resolution, resolving 90% of complaints within one day.		<p>We have designed new complaint outcome codes and built these into our CRM system. We are now using the codes to deliver actionable insight, whilst constantly reviewing whether they are the right codes or whether we need to change them.</p> <p>89% of complaints were resolved within 31 days below our target of 98%, which we have improved to 97% by Q3 2024.</p> <p>78% of complaints were resolved within 1 day below our target of 88%, which has also improved up to 85% by Q3 2024.</p>	<p>We will continue to develop the regional hubs, ensuring that weekly meetings are taking place and, whilst keeping our Customer Care the custodians of all complaints, ensuring the regions are ready to deal with complaints where needed.</p> <p>We are exploring how we provide more pro-active care approach to customers where we see a problem emerging, to prevent complaint occurring in the first place.</p>
CS3 Expand our customer service offering to provide support for flexibility providers and data users		<p>Development of the CRM system has taken place to create an environment which enables the management of stakeholders and flexibility service customers. This allows business teams to capture contact details, transactional data and contractual information and can be used for the creation, communication and tracking of events.</p> <p>Significant development of our data provision and support for users has been delivered in the past year in recognition that the timely and cost-efficient transition to Net Zero is built on data. We have proactively and extensively engaged with over 650+ stakeholders this year; to understand their requirements, to co-develop solutions and products that meet their needs and shape our future plans.</p>	<p>The development of the CRM system will continue for the management of stakeholders and flexibility services customers which we expect to go live at the start of 2025</p> <p>Integration between CRM and Mapolitical software, to provide political information will then be launched at the end of 2024.</p> <p>Collaboration with the Major Works Connections teams to identify the opportunity to use CRM for the management of Major Connections applications.</p> <p>We maintain a development roadmap on our Open Data Portal. Next steps include completion of data theme pages; integration of additional data sets, including LV heat maps; and the addition of tutorial videos.</p>

Vulnerable Customers

Helping our customers find their way out of fuel poverty

In 2023/24 we significantly expanded our network of Fuel Poverty Support partners to nine key partnerships, incorporating five Citizens Advice branches, Green Doctors, the Wise Group, Live Inclusive and the National Energy Foundation. As a result, the reach of our fuel poverty services almost doubled year-on-year.

Their work incorporates debt advice, energy efficiency support, home assessments and signposting to available grants to improve the efficiency of customers homes. In total, our partners provided Fuel Poverty services to 16,484 customers in the year - more than double what we achieved in prior years. This has delivered £2.7m worth of social value in the process. The average satisfaction for a customer receiving this service was 94.4%.

We have ramped up existing programmes designed to support vulnerable customers and successfully launched several new ones.

Improving our Priority Service Membership scheme

A significant driver of our activities to help vulnerable customers is our Priority Service Membership (PSM) scheme. We continue to target and recruit customers to our PSM, while maintaining high data quality standards. We have focused our efforts this year in improving our PSM data quality and increasing and testing new channels for our PSM recruitment.

We have set an ambitious target for our PSM numbers by the end of the price control in line with other DNOs and in 2023/24, we have made steady progress towards our 2028 target with 190,267 new PSM sign-ups and 63.9% of eligible customers signed up to the PSM by March 2024. Since then we have continued to build on our PSM, with our eligible customer reach climbing to 69.9% by the end of Q3 2024.

We also have a robust data cleanse process in place to ensure that the data we hold on PSM customers is as accurate as possible. This process is driven by both day-to-day interactions with customers, where we aim to always check customer's details when we speak to them, and an automated cleanse process that kicks in as customers are reaching the two-year mark since they last interacted with us. This year we also worked with Experian and Sagacity to run the entirety of our PSM data through their systems to identify where customers may be deceased or no longer living at an address, as well as anomalies in contact data.



190,000
new priority service member sign ups



63.9%
of eligible customers signed up to our PSM



94.4%
satisfaction with fuel poverty services



£2.7m
value of fuel poverty services delivered

Working with trusted partners to enhance support for customers

At Northern Powergrid we utilise a network of trusted partners to enhance our support for vulnerable customers and to help us reach more hard-to-reach customers.

All our delivery partners sign up to a commitment to discuss the benefits of Priority Service Membership with the customers they work with and are encouraged to sign up new members where relevant.

Our bi-annual Partners Together forum, incorporating 14 of our key delivery partners on our Fuel Poverty and Decarbonising Homes programme, facilitates best practice sharing and collaboration among partners. Whilst our Stronger Together network allows a wider group of partners to share their views on new and emerging issues impacting customers.

Overcoming the barriers to the smart energy transition







Leaving nobody behind in the transition to Net Zero is one of our central business objectives for the ED2 period and beyond. The adoption of Low Carbon Technologies (LCTs) and behaviours can easily become an afterthought for those experiencing energy affordability issues or other vulnerabilities, and we play an important role in removing barriers for these customers.

Our Decarbonising Homes programme leverages a multipronged service model that relies on partners and internal capabilities to deliver tailored and targeted support to customers adopting LCTs and teaches the behaviours required to benefit from the transition.

After a period spent setting up the programme in the first year of ED2, we became one of the first DNOs to launch their LCT advice service and we have begun to see benefits being delivered. We expect to see these outcomes ramp up in the remainder of the period.



Vulnerable Customers - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
VN1 Undertake targeted recruitment of vulnerable customers to our PSM, contacting all PSM customers every two years to refresh our records		<p>We signed up 190,267 new PSM customers in 2023/24 and 63.9% of eligible customers are now signed up to the PSM. We continue to target and recruit customers to our PSM, while maintaining high data quality standards.</p> <p>Our data cleanse process is driven by both day-to-day interactions with customers and an automated cleanse process that contacts all other PSM customers once every two years. 100% of relevant customers were contacted when reaching this point during 2023/24.</p> <p>This year we also worked with Experian and Sagacity to run our PSM data through their systems to identify where customers may be deceased or no longer living at an address, as well as anomalies in contact data.</p>	<p>Build internal capabilities into the data cleanse process so that changes to circumstances and/or data are recorded as part of the process via a simple, automated solution.</p> <p>Assess the impact of a targeted winter and general PSM recruitment campaign vs previous campaigns and embed learnings.</p> <p>Continue building out the picture of what digital solution will work and test iterations with customers and stakeholders.</p>
VN2 Provide enhanced support to vulnerable customers during supply interruptions including temporary restoration and proactive communications		<p>We have trebled the number of dedicated Priority Service contact centre advisors and have contacted over 300,000 PSM customers during a power cut in 2023/24, including 87.1% of Priority 1 customers within the first hour of an interruption.</p> <p>Our Proactive On-Site Responders spoke to 9,786 PSM customer face-to-face during longer interruptions to check on their needs and offer support services, including battery generators for customers who are medically dependent customers. Responders have also signed up a further 525 vulnerable customers that we didn't previously know about.</p>	<p>In 2024-25 we are reducing our deployment for on-site support for vulnerable customers to 4 hours, ahead of our 6-hour commitment, to provide support to customers as early as possible.</p> <p>We will also roll out the deployment of new Customer support vehicles and obtain customer feedback as to whether they are providing the required facilities needed in a power cut.</p>
VN3 Use data and partnerships to enhance our support for vulnerable customers, sharing information with trusted partners to access hard-to-reach customers.		<p>Our Stronger Together network allows over 700 partners to share their views on new and emerging issues impacting customers through four face-to-face events per year and regular newsletters. The innovation project Open Maps provides significantly improved data on the vulnerabilities across our region.</p> <p>All our delivery partners are signed up to a commitment to discuss the benefits of Priority Service Membership with the customers they work with and are encouraged to sign up new members where relevant. Our bi-annual Partners Together forum facilitates best practice sharing and collaboration among partners.</p>	<p>Improve accessibility of resources and information about the PSM as a founding principle of our website redesign project.</p> <p>Continue to build and grow our Stronger Together network. Further integrate the services delivered by our partners with our core service in Northern Powergrid to enable a seamless referral</p> <p>Continue with the next phase of the Open Maps project.</p>
VN4 Support customers in fuel poverty with affordability services, targeting 100,000 customers to unlock up to £40m of benefits		<p>In total, our partners provided Fuel Poverty services to 16,484 customers in the year, just below our target of 20,000, and delivered £2.7m worth of social value in the process. The average satisfaction for a customer receiving this service was 94.4%.</p> <p>Our network of nine Fuel Poverty Support partners provide debt advice, energy efficiency support, home assessments and signposting to available grants to improve the efficiency of customer's homes.</p>	<p>Develop a social value model to extract maximum value from the services we deliver and inform decision making.</p> <p>Ensure consistency of a quality service across every single delivery partner, sharing best practice where possible.</p> <p>Improve accessibility of educational materials about energy efficiency on our website</p>
VN5 Work with partners to put in place initiatives that overcome barriers to the smart energy transition and support a socially inclusive transition to net zero, targeting 25,000 interventions		<p>Our Decarbonising Homes programme relies on partners and internal capabilities to deliver tailored and targeted support to customers adopting LCTs and teaches the behaviours required to benefit from the transition.</p> <p>After a period spent setting up the programme in the first year of ED2, we have begun to see benefits being delivered, with 714 households supported in 2023/24 and a further 2,400 since. We expect to see these outcomes ramp up in the remainder of the period and we have already increased our number of delivery partners from four at launch to seven.</p>	<p>Continue to grow the scope for service delivery for decarbonising homes, whilst sharing best practice learning to drive improvements to partner offerings. Increase rate of delivery through embedding referrals to the programme within the wider NPg service.</p> <p>Launch our Energy Choices online tool which allows customers to create a tailored report providing them with information around energy efficiency measures they can implement in their home.</p>
VN6 Embed vulnerability across our business operations		<p>We have rolled out our vulnerability training to all our employees across the business, and they will continue to receive this training every 24 months.</p> <p>Our first Annual Vulnerability Report was published on 31st July and ensures transparency about our vulnerability provisions.</p>	<p>Evaluate and benchmark our Annual Vulnerability Report against other DNOs' versions and find examples to best practice to replicate.</p> <p>Roll out refreshed and enhanced vulnerability training across the business, including covering fuel poverty and low carbon technologies. Embed within a range of services to support our customers, enabling our front line team to offer a range of support services immediately.</p>

Stakeholder Engagement

Stakeholder engagement underpins what we do here at Northern Powergrid, it was central to our business plan for 2023-28 and we continue to engage with customers to help shape our activities, as well as using expert stakeholder groups to provide robust challenge to what we do, and how we do things.

Our Engagement Principles

Inclusive

Ensuring our engagement reaches and includes a diverse range of individuals, groups, experts, and locations that represent the communities we serve.

Accessible

Increasing the use of new communications channels, removing engagement barriers, and increasing cooperation with a wide range of local organisations so innovative thinkers and future customers access and contribute.

Relevant

Providing additional ways to discuss complex topics and tailor communication approaches so promote an understanding of topics such as decarbonisation and an inclusive energy transition.

Continuously Improving

Developing the skills, processes, infrastructure, and capacity of customers, communities, and our own teams to ensure engagement is two-way, measurable, and transparent.

An inclusive approach that encourages a diverse range of voices

Our stakeholder engagement strategy targets a diverse range of individuals, groups and experts and goes out to all corners of our operational area. As well as regular interactions at a customer level, we have set up a selection of specific engagement groups, including efforts to reach groups who might find it hard to engage with our industry at first.

In 2023/24 we developed and launched the Northern Powergrid Youth Insight Group, aimed at young people aged between 14 and 19, to ensure that our future consumers are with us on our journey to a decarbonised future, but also on issues such as inter-generational fairness, environmental protection and inclusion & accessibility.

We have grown the capacity of our Regional Insight team to provide more community level engagement on decarbonisation topics. We have also further expanded our Stronger Together partnership network bringing together a broad range of partners working to support vulnerable people and covering topics including winter preparedness, fuel poverty and low carbon technologies.

At a more specialist level, cross utility industry forums and social issues expert groups continue to provide key insight to drive our decision making.

Ensuring people can engage on complex topics, especially around the energy transition

The future of energy is an exciting topic within our industry and for our customers, but it is important that everyone has the chance to get involved in the energy transition to a decarbonised future.

We have developed strong relationships with the local and combined authorities within our region and contribute regularly to their net zero policy development, ensuring we consult with every authority at least once per annum. More specifically, in 2023-24, we directly contributed to the development of the Local Area Energy Plans for both Calderdale Council and the York and North Yorkshire Combined Authority.

It is vitally important that we ensure that our customers have the chance to be involved in the drive to Net Zero. However, some hard-to-reach customers may find it hard to engage on such a complex topic. We are working hard to break down these boundaries and have developed a range of materials to support stakeholders, including explainer videos, FAQs and education materials, which remain under constant review to ensure they are effective.

Alongside our Decarbonising Homes programme, covered on page 30, we believe this approach will ensure we can bring everyone along with us on the journey to a net zero future.

Independent Stakeholder Group (ISG)

We established our Customer Engagement Group in September 2019. They were a group of independent experts led by Chair, charged with scrutinising our business plan and the quality of engagement undertaken to inform it.

Originally set up to scrutinise our RIIO-ED2 planning process, we have elected to continue to utilise this group, which has been rebranded as the Independent Stakeholder Group (ISG)

The ISG meets monthly with Northern Powergrid and helps to ensure that customers' needs and views are reflected in our plans which is particularly important in the rapidly evolving low-carbon energy landscape.


The ISG has pushed Northern Powergrid to think strategically about its engagement and, as a result of its feedback, we have introduced several new initiatives, such as a SME Panel dedicated to engaging small and medium business owners and a Rural Panel dedicated to engaging rural customers in remote locations, which are essential for Northern Powergrid to adhere to as the electricity evolves over the next 10 to 20 years.

The ISG operates in an open and transparent manner, more details can be found online, along with their published reports at ceg.northernpowergrid.com

Engagement highlights in 2023-24



21,000
stakeholders engaged




94.4%
satisfaction with fuel poverty services



40,000
vulnerable customers directly supported



£160,000
invested in social impact programmes



56 new
open data products shared



257
stakeholder events held







100%
of local authorities consulted






57
Bilateral engagements with flexibility providers

Stakeholder Engagement - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
SE1 Ensure that our engagement reaches and includes a diverse range of individuals, groups, experts and locations that represent the communities we serve.		<p>We conducted 212 regional engagements in 2023/24 including four focused on community energy engagement.</p> <p>We have developed and launched the Northern Powergrid Youth Insight Group to support a sustained conversation with young people (14-19) on key sector topics.</p> <p>Designed approach to leveraging community role of MPs during major incidents through implementation of the MP hotline.</p> <p>We have delivered events under the Stronger Together partnership network, bringing together a broad range of partners working to support vulnerable people and covering topics including winter preparedness, fuel poverty and low carbon technologies.</p> <p>Our Regional Insights team have been expanded to vastly increase resource for engagement of a range of stakeholder groups and depth of engagement. Comprehensive mapping of local government stakeholders and relative maturity of engagement on net zero, to better plan more representative engagement for the following years.</p>	<p>We will continue to ensure that diversity and inclusivity is built into our stakeholder engagement planning for ED3. We are committed to enhancing how we incorporate additional needs into our stakeholder engagement. This includes ensuring that our activities and agenda items are inclusive of neurodiversity, selecting venues that consistently meet accessibility standards, and providing adequate breaks during events.</p> <p>Furthermore, we are developing educational resources to upskill and support our stakeholders, with plans to begin production and release in early 2025. In order to improve communications with key stakeholders, we will introduce an MP hotline to deliver advice before the start of 2025.</p> <p>We will also expand provision of community energy support through further engagements and dedicated staff, including local and combined authority engagement to include active engagement with every authority in our region for net zero planning and delivery.</p>
SE2 Increase the use of new communication channels, remove engagement barriers, and increase cooperation with a wide range of local organisations, so innovative thinkers and future customers access and contribute to our engagement		<p>We have delivered a robust programme of engagement both segmented for audiences and topics to ensure appropriate insight to support our decisions and activities; strong focus on evidencing that stakeholder voice underpins delivery of our ED2 commitments. This included three cross utility forums and eight gas distribution and electricity distribution bilateral meetings.</p> <p>We completed our first annual round of regional decarbonisation workshops and shared the stage with other utilities at our bi-annual stakeholder events to maximise whole-systems thinking. Furthermore, we introduced use of full participation 'hybrid' events ensuring equality of experience between virtual and in person participants.</p> <p>We have developed strong relationships with three industrial cluster representative groups (in Teesside, Humber and North Yorkshire), providing support to the clusters as a group as well as providing guidance and insights in their net zero planning and delivery journeys.</p>	<p>We must sustain our robust programme of engagement both segmented for audiences and topics to ensure appropriate insight to support our decisions and activities.</p> <p>Part of this will be done though our second annual regional decarbonisation workshops, as well as expanding industrial representative support beyond the initial three clusters and include sectoral engagement (e.g. steel, glass) as a priority area.</p> <p>We will also harness opportunities presented by our new external website, which is expected to launch in 2025, to develop additional engagement opportunities and increase the team's reach to increase our representation at more stakeholder-led events to maximise audiences for our key messages.</p>
SE3 Provide additional ways to discuss complex topics and tailor communication approaches so that we deliver engagement that promotes an understanding of priority topics such as decarbonisation and an inclusive energy transition		<p>We have developed various explainers and introductory materials to support stakeholder's conversations with us, examples include flexibility videos and connections Q&As.</p> <p>We have commissioned a full review of our learning/educational material benchmarked against peers; development areas have been identified and will be actioned in future years.</p> <p>We have consulted with 100% of local authorities on our current and future investment programmes and shared priorities. In particular, we have contributed to the delivery of the York and North Yorkshire Local Area Energy Plans and the development of the Calderdale Local Area Energy Plan. Extending this, we have developed close collaborative relationships with local and combined authorities and Local Energy Partnerships, contributing regularly to their net zero policy development, as well as project design and delivery through dedicated meetings and attendance at regional panels, including in West Yorkshire, York & North Yorkshire, and Greater Lincolnshire.</p>	<p>We'll continue to develop additional learning and education materials, as well as grow the breadth and depth of our Regional Insight team to support bespoke conversations with local authorities and industry clusters.</p> <p>This will also mean using the expanded team capacity to build increasingly strong relationships with local and combined authorities across the whole of our geography and engage with our stakeholders on the topic of the Regional Energy Strategic Plans and the benefits they can bring to net zero plan delivery if the impact is maximised.</p>
SE4 Continue to mature the skills, processes, infrastructure and capacity of communities, customers and our own teams to ensure engagement is two-way, measurable and transparent.		<p>We have grown our Regional Insights team from three colleagues to five to support additional bespoke conversations. This ensures we are able to effectively use of external expertise to ensure continuity of service during dips in internal resource.</p> <p>We completed our internal management report for Northern Powergrid AA1000 Stakeholder Engagement Management System Assessment 2023</p>	<p>We are growing the Regional Insights team to deliver additional intelligence into the business and we have commissioned the AA1000 stakeholder engagement management system assessment in 2024.</p> <p>We will also increase our use of measures and metrics to ensure that evidence and data drives service improvements.</p>

Openness & Transparency - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
<p>OT1 Develop our DSO business unit to stimulate flexibility markets, procure flexibility and govern our internal investment appraisal processes, openly publishing and reporting on outcomes.</p>		<p>We published our Flexibility First policy in October 2023. This details our commitment to employ flexibility services as a solution in preference to network reinforcement wherever it is the most efficient and economical overall outcome for Customers.</p> <p>We continue to publish our flexibility services procurement statement and outcomes reports on our website to describe how we are bringing more opportunities to provide flexibility services at more locations and our recent procurement successes.</p> <p>We have published our DNOA methodology on our open data portal which details the process for assessing network development choices and for sharing our plans to be open and transparent about investment decision-making.</p> <p>Our DSO Review Panel, established in August 2023, is providing independent scrutiny and challenge of our network development decision-making process.</p>	<p>We will continue to publish our flexibility service procurement statements and outcome reports on a regulatory year basis.</p> <p>Feedback from our DSO review panel on topics including financial, technical, economic, and environmental decisions, will be continually monitored and acted on as appropriate.</p>
<p>OT2 Enhance our corporate governance and sustainability frameworks, making them even more transparent.</p>		<p>We have continued to utilise the Customer Engagement Group, now renamed our Independent Stakeholder Group (ISG), to keep track of our progress against our ED2 commitments. The ISG meets every quarter to discuss progress and provide an expert stakeholder challenge. In 2023-24 we have developed a scorecard to update them on each of the 18 sections of our ED2 plan.</p> <p>Our annual DSO, Major Connections, Vulnerability, and Environment report were all published in 2024 to cover the 2024 regulatory year.</p> <p>We have continued the roll-out of the Responsible Procurement Charter with all new contract awards requiring a sign up to the charter. For those already in place, we have retrospectively approached all suppliers to ask them to sign and agree to the Charter. Currently 80% of suppliers have done so.</p> <p>We invited our trade unions representatives to our January 2024 board meeting to allow them to share the views and needs of their members directly to our executive team. Designated executive members are also directly involved in pay reviews with unions for collectively bargained pay scales.</p>	<p>We will continue to utilise our ISG group to provide an expert stakeholder voice. In 2024-25, we will evaluate the effectiveness of our scorecards and feedback methods to find the most efficient way to keep the ISG informed.</p> <p>As part of our ongoing external website rebuild, we will improve the functionality of our document library, making it easier for our customers and stakeholders to locate our annual reports.</p> <p>Development of a new Supplier Reporting System is underway to collect, manage and report on performance data on our suppliers against a set of sustainability metrics. We expect to go live with this in Q3 2024 and we will then start a roll-out programme to get suppliers registered on the system and providing regular reporting.</p> <p>We will continue to invite trade unions to our board meetings once a year to maintain an open dialogue between our board and industrial representatives. The next meeting is planned for January 2025.</p>
<p>OT3 Enable fair and open competition.</p>		<p>We continue to facilitate fair and open competition so that our customers have a choice in who delivers their connection by publishing guide prices and monthly performance metrics, as well as providing clear cost breakdowns in connections quotations.</p> <p>We have started a trial with an IDNO for the self-fill of LV Bilateral Connection Agreements to further minimise input services and speed up applications for major connections projects.</p>	<p>Once the trial of LV Bilateral Connections Agreements is complete, we aim to roll this out to all IDNOs</p> <p>We are currently reviewing whether there is necessary demand from ICPs and IDNOs to justify providing a bespoke Autodesign platform for ICPs and IDNOs with non-contestable costs.</p>

Our Communities

It is our goal to be a force for good in our region, going beyond simply keeping the power flowing, to make a positive contribution to the communities we serve.

Considering the social impact in everything we do

Support for our communities is a principle that we applied to our thinking across all areas of our ED2 business plan. We have long worked closely with our communities and in ED1 we developed and established strong programmes and initiatives to improve the lives of the more than eight million people who we serve.

To build on this, we are working to integrate our approach further by developing social programmes that simultaneously improve both the network and our communities, with our goal to deliver a tailored social impact programme alongside at least 50% of our major investment schemes by the end of ED2.

In 2023-24 we developed a standardised framework for implementing social impact schemes across the business and have begun to test this framework through two pilot schemes in Teesside and our South Yorkshire and North Lincolnshire region. As these reach completion, we will evaluate their effectiveness and use what we have learned to plan further projects, with the aim of having two social impact schemes planned for each of our six operational regions by the end of 2024.



Supporting our communities on the path to decarbonisation

At Northern Powergrid we believe that all customers, notwithstanding their personal circumstances and their environment, should participate in and benefit from the transition to Net Zero. We recognise that some household, particularly those who are vulnerable, will struggle to engage with the changes needed to incorporate net zero technologies and our Decarbonising Homes programme is designed to help remove the barriers that these customers face.

Working with partners from Citizens Advice, Yes Energy Solutions, Communitas, and the National Energy foundation, this programme offers support and advice that is tailored to each household's individual circumstances. This support can range from providing simple lower energy devices, such as energy efficient lightbulbs, to finding trusted installers for new technology, and even assisting customers with applying for government grants for insulation and low carbon devices.

Much of our time in 2023/24 was spent building the programme and training new facilitators, but our partners were able to reach 714 households in the year, delivering an NPV social value of around £320,000 to our communities. Satisfaction for our service is high, with customers scoring the support they received at an average 9.3 out of 10. We will continue to ramp up this programme throughout ED2. Already, since April 2024 we have onboarded three new Citizens Advice Hubs and reached a further 2,400 customers.



Supporting our communities to promote careers in STEM subjects and the Net Zero roles of tomorrow





The difficulties faced by families due to the rapid recent increases in the cost of living is well documented and we have found such considerations becoming an increasingly large part of our thinking when it comes to delivering a social impact in our communities. Our fuel poverty support programme has the potential to help vulnerable households make immediate savings, however we also aim to make a difference long term.

As a major employer in our region, we recognise that preparing school children for the jobs of the future can have benefits both on their financial future and our own future workforce needs. To this end, we have worked with Ahead Partnership to deliver our Net Zero schools programme, designed to increase awareness, interest, and understanding of STEM skills and how these can lead young people to the STEM careers of tomorrow.

Through this programme, we engaged 2,964 pupils they year, double our original target. This takes the total since we launched the programme in 2021 to over 5,500 young people. To further promote future opportunities within our region, our team facilitated six career panels for young people in 2023-24, where volunteers meet with students to answer questions about career opportunities and student aspirations, and speed networking events designed to help students to practice their networking skills with businesspeople from a wide range of sector.



Our Communities - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
CO1 Deliver tailored social impact programmes for 50% of our major investment schemes.		<p>NPg framework for implementing social impact programmes has been developed, tested and finalised with two pilot programmes implemented in Teesside and our South Yorkshire and North Lincolnshire region.</p> <p>Once completed and evaluated, we will replicate these over a wider rollout, aiming to deliver a tailored social impact programme alongside at least 50% of our major investment schemes by the end of ED2.</p> <p>Key foundation work undertaken to identify mechanisms for triggering social impact funding for key projects.</p>	<p>Complete pilot programmes and evaluate effectiveness; implement any improvements needed and roll out across all regions.</p> <p>Identify two social impact programmes for each region by the end of 2024.</p> <p>Continue to support regional and major project colleagues in operationalising framework approach. Launch dedicated resource for this support by Q1 2025.</p>
CO2 Support our communities to promote STEM subjects and careers		<p>Our Net Zero Schools programme, in association with Ahead Partnerships, is designed to increase awareness, interest, and understanding of STEM skills and how these can lead young people to the STEM careers of tomorrow. It has reached 2,964 new young people in ED2-to-date. Coupled with the work completed in the last two years of ED1, this takes the total number of students supported to over 5,500.</p> <p>The Net Zero Schools programme facilitated 6 careers panel and speed networking events to further promote careers in STEM & the wider electricity industry.</p> <p>We also donated to a summer school at Durham University ran by the OneUkraine charity to help them to facilitate a once-in-a-lifetime experience for 200 Ukrainian evacuee children. The summer camp saw the teenagers take part in STEM-focused teaching and practical experiments, as well as visiting local points of interest.</p> <p>A pilot programme has been ongoing throughout 2023/24 to test a colleague volunteering app (On Hand). We now plan to roll this out across the business in late 2024 to help colleagues sign up to skills-based volunteering, to provide education on energy careers as well as opportunities within Northern Powergrid.</p>	<p>Launch On Hand volunteering app companywide to enable colleagues to easily source and manage their own volunteering opportunities.</p> <p>Engage with the wider business on volunteering via a two-phase comms plan; launch and momentum building to embed a culture of volunteering.</p> <p>Continue to build the reach of the Energy Heroes! and Net Zero Schools programmes.</p>
CO3 Offer community energy advice to support our communities on the path to decarbonisation.		<p>We have signed up four partner organisations (Citizens Advice, Yes Energy Solutions, Communitas, and the National Energy foundation) to deliver our decarbonisation support within our region. The programme is now fully deployed and began delivering in late 2023. By the end of 2023/24 they had supported 714 households to begin decarbonising their homes, delivering £320,000 in social value in the process. This scheme is now ramping up with three more Citizens Advice Hubs signed up to support and over 2,400 more households supported since April.</p> <p>Our programme of community energy work has begun to be delivered by our partner Regen, who are currently working to train more advisors who can be a benefit the community. These partners will work alongside our internal team of Community Energy Advisors once they are recruited in 2024/25.</p>	<p>Work with partners to increase reach and net present value of LCT services.</p> <p>Establish new partnerships with Citizens Advice Bradford, North Yorkshire and Stockton to deliver LCT advice.</p> <p>Enhance our current community energy provisions by recruiting a team of in-house Community Energy Advisors to work alongside our existing partners.</p>
CO4 Maintain our position as an anchor institution in our region, working collaboratively with our organisation to have a greater positive impact.		<p>We completed our first Inclusive Anchors Progression Framework in 2023/24, scoring on five dimensions (employment, procurement, environment & assets, service delivery and corporate & civic) for benchmarking and future progress tracking.</p> <p>A Northern Powergrid lead has been assigned to each of the Leeds Anchor Network subgroups to attend working groups and gather insights from other anchors in the region.</p>	<p>Fold actions from Joseph Rowntree Framework into our Sustainability Delivery Group.</p> <p>Complete the progression framework review and begin second progression framework in Q4 2024.</p>

Our People

Our people ensure that customers' lights are kept on each and every day, and our long-term strategy ensures our business is resourced with the future skills we'll need to lead the transition to a decarbonised future.

Working to recruit a future proofed workforce...

Recent PwC analysis suggested that the energy transition will be constrained by the green skills gap of around 200,000 workers in the UK. Demand for new skills and capabilities will only accelerate so it's vital we attract and build a diverse pipeline of talent. That creates a raft of new opportunities for roles and functions within our industry and we require a workforce that has the skillset to aid this transition and the knowledge of the emerging technologies that will take us there.

As such, we are focused on delivering on our promise to create over 1,000 new job opportunities during the 2023-28 period, and we've created more than 320 in the first year alone. This trajectory is set to continue for the remainder of the period as we look to the challenge of facilitating decarbonisation in our region.

...and that doesn't just mean new workers, but creating opportunities for existing ones...

Of course, not all our future needs will be met by new recruits. We already have a workforce of almost 3,000 people - capable and talented people who are being given access to the training and development they need to take them to the next stage of their career.

We are increasing the range of our apprenticeship opportunities, going beyond our traditional industry standard apprenticeships for operational colleagues, and opening up apprenticeships across a range of business units such as customer service, data analytics, procurement, supply chain management, and finance. Many of these opportunities straddle a range of levels within our business including all the way to senior leadership apprenticeships.

... and preparing to meet the challenges of the future through a diverse and inclusive workforce.

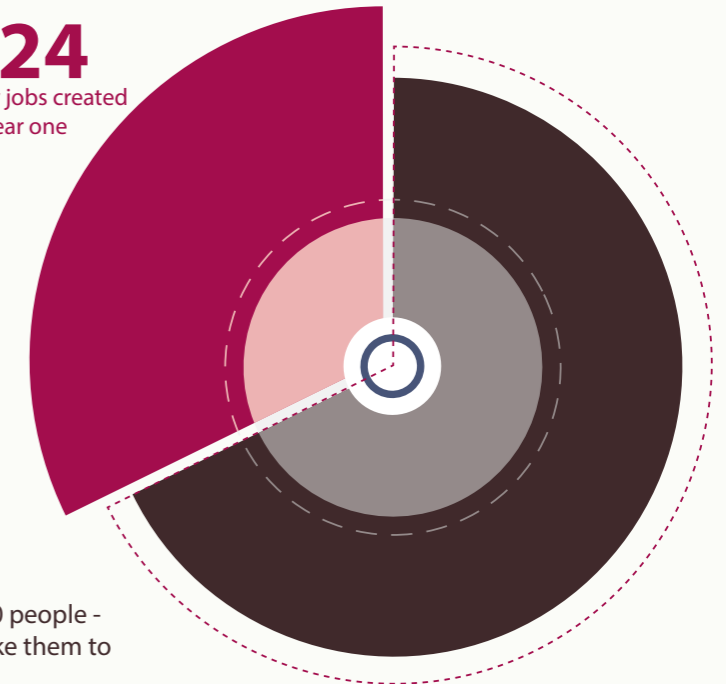
Historically, very few energy industry roles have been held by women or ethnic minorities and this needs to change. That starts with helping young people across our region, which we cover in more detail on the "Our Communities" section on page 35, but also creating job opportunities that improve social mobility and training programmes help them reach their full potential.

Our Diversity, Equity & Inclusion (DEI) plan sets out the ambitious set of actions we are undertaking now and in the coming years to improve our position, shaped by priorities we heard through colleague and stakeholder engagement.

In 2023-24, we have put many elements of this plan into action. Our Colleague Panel has been established with four clear principles covering DEI training for managers and colleagues, DEI communications, workplace accessibility, and continuous improvement.

We have also established a new location at Riverside House in Sunderland which has given us an excellent opportunity to put wider diversity and accessibility goals at the forefront of our office design, as well as widening our attraction to some of the most deprived areas in our region.

324
new jobs created
in year one







On top of **1,300** new jobs
between 2015-23...

...and more than **600** of those through our
workforce renewal scheme

98% retention rate on
workforce renewal



Workforce Resilience - Commitment Summary

Commitment	Status	How are we doing?	What's Next?
WR1 Create more than 1,000 high-quality job opportunities and attract talented people to the energy sector		<p>In 2023-24 we created 324 job opportunities where someone new joined our business.</p> <p>We have also commenced work on establishing our future skills strategy, working with EU Skills, Skills Partnerships and trade bodies on developing a long-term plan to grow the skills required in the UK to facilitate decarbonisation.</p> <p>We have also enhanced our existing relationships with key universities in our area including Newcastle and Leeds, as well as with Strathclyde university.</p>	<p>We will continue to establish a long-term recruitment and training strategy with our contract partners that develop Net Zero skills in our region.</p> <p>This will be combined with a focus on establishing links to universities across the UK to underpin graduate recruitment and pipeline talent through our graduate programs.</p>
WR2 Upskill and multiskill our workforce to provide rewarding career paths and develop the new capabilities required for managing our future energy network.		<p>We have implemented our CORE programme designed to identify talented individuals and develop their leadership and management skills - 66 people have graduated from this leadership programme so far, many of which have gone on to leadership roles within the company.</p> <p>We have developed a wide range of apprenticeships from level 3 apprenticeships, equivalent to A-levels, to level 7 apprenticeships, equivalent to a Masters degree. We have enrolled 100 people on apprenticeships within Northern Powergrid in the last 18 months.</p> <p>We implemented an Executive Coaching programme for identified talent to continue to progress their skills and move towards a senior/Executive role, as well as 360 feedback tool to support senior leaders' self-awareness and development of their behaviours and skills aligned to our leadership expectations.</p>	<p>Continue to drive further apprenticeships in the data and leadership space, with a focus on identification of, and development of, key talent to develop, retain and promote from within.</p> <p>Implementation of a Senior Leadership Development Programme to develop the skills of our most senior leadership team.</p> <p>Implementation of an internal mentoring platform to leverage the experience that exists amongst our workforce and connect colleagues to promote knowledge sharing.</p>
WR3 Increase workforce engagement and strengthen partnerships with trade unions to become an even better, safer and rewarding place to work for our employees.		<p>Working groups have been established with the trade unions for both individual collectively bargained units and cross-group collaboration. Examples include work being done on Industrial Multiskilling and the Fatigue working group. These workstreams have brought the business and TU together to work on constructive and progressive pieces of work, fostering stronger relations.</p> <p>We continue to run and attend the information and consultation forums, 'Issues and Resolutions' and the related councils. A review of appropriate attendees has taken place and a review of the content to ensure we are meeting our consultation obligations. We have extended consultation within these forums on matters such as DEI and accountability frameworks.</p> <p>Activities have commenced for the second half of 2024, now finalising the wellbeing strategy for 2025 and beyond. Working group established.</p>	<p>Trade Union working groups will continue into the rest of ED2, as will the regular consultation forums which will strengthen our relationships with both the trade unions and employees.</p> <p>Continue improvements to Employee Relations casework with additional coaching and training for HR team and a line manager training programme to be rolled out early 2025.</p> <p>Establish wellbeing working group and deliver wellbeing strategy in 2025.</p>
WR4 Increase the diversity of our workforce and develop a more inclusive workplace culture, supported by increasingly effective data insights.		<p>We established a colleague panel with clear Terms of Reference and set clear priorities to move forward in this area and created a continuous listening survey for feedback specific to DEI.</p> <p>The four key principles of the panel cover DEI training for managers and colleagues, DEI communications, workplace accessibility, and continuous improvement.</p> <p>Ahead of the opening of our new Riverside House office the Colleague panel consulted on ways to make the office accessible and inclusive and came up with 6 key recommendations which will be followed in the final build.</p> <p>In the first quarter of 2024, focus groups were held to gather qualitative data on DEI within the organisation. We also introduced our 'Take Five' survey to collect quantitative data about all new starters.</p> <p>We have also built a new leadership toolkit that aims to equip leaders with the knowledge and tools to lead inclusive teams.</p>	<p>We will increase our focus on social mobility within our region given it has some of the lowest income areas in the country.</p> <p>We will consider approaches to extend the 'Take Five' data collection survey to our existing workforce.</p> <p>Continue to embed the work already done on the leadership toolkit across the organisation.</p> <p>Complete accessibility elements of Riverside House build and collaborate with our property team on retrofitting solutions into renovated sites.</p>

Data & Digitalisation

Rapidly changing customer needs, as we transition towards a decarbonised future, means that digital improvements, and an increase in the data made available to both our teams and our stakeholders, form a significant part of our ED2 plans.

2021

We published our data & digitalisation plan in 2021 - It outlined the types of data-focused roles Northern Powergrid intends to create, as well as our plans to improve access to critical information for customers that will help them connect devices to the network through a new website and self-service capability, powered by AI and open data.

But we didn't wait to begin improving things, during that year we deployed a more resilient online power cut logger that could hold up to 30,000 concurrent users, rolled out M365 across the organisation and began work on new improved back office systems which form the backbone of any organisation.

2022

We built the foundations of our 2023-28 business plan working in key areas to deliver improvements for customers and stakeholders:

- We deployed a modern, cloud-based telephony system that is significantly more resilient than traditional telephony systems.
- Began the use of robotics process automation which allows us to automate key processes and become more efficient.
- Went live with our connections enduring solution which allows customers to self-serve on connections quotations.
- Replaced our legacy asset management systems better able to track assets and inform investment plans.
- Rolled out Windows 10 and removed or replaced legacy equipment which makes our people and systems more efficient, as well as reducing cyber vulnerabilities

2023

We made significant steps forward in our data & digitalisation journey, particularly in establishing distribution system operation capabilities and improving the accessibility and availability of data:






- We established our open data platform which allows customers and stakeholders to access a host of useful information on our network. This is particularly useful for those wishing to build and install low carbon technologies in our area.
- We deployed an improved power cut map that has been developed through stakeholder feedback to ensure that our customers are able to access the information they need when they need it most.
- We introduced new contact channels for our customers that allows them to choose the way they get in touch with us. Those include WhatsApp, web chat and video calling - we also established a dedicated team to ensure that our people are trained and equipped to use this technology to it's best.
- We continued to improve our connections systems to speed up quotations and give customers access to more information without having to go through a full quote. When combined with other improvements in this area, this has resulted in a 5.5% improvement in customer satisfaction.

2024 so far

We have continued to improve our digital technology to ensure that our customers and our people are able to have the right information at their fingertips:

- We delivered an improvement to our connections website in conjunction with stakeholders and customers which creates a better user experience and streamlines the application process.
- We have further enhanced the power cut map as we continue to take onboard customers and stakeholder feedback on what information they need available when they have a power cut.
- In conjunction with the power cut map we have been developing a new application to roll out to our field operatives that allows them to update customers easier and faster - ensuring that more high quality information is put in the hands of customers when they need it
- We now have seven processes with robotic automation which has saved over 6,000 hours of work within the business.
- We have further developed our Autodesign system, which forms the basis of our connections online self-service tool, to enable it to be used by customers who wish to install low carbon technologies at home.

Data & Digitalisation - Commitment Summary (1 of 2)

Commitment	Status	How are we doing?	What's Next?
DD1 Provide high-quality open data to a wide audience so that stakeholders are empowered to become active participants in a deep and liquid energy market.		<p>Significant investment has been made during this period to enable data best practice compliance within the Company. We have increased our data team competence by hiring three new roles, including a lead on data governance, which completes our new data governance structure to include security, privacy and compliance.</p> <p>We have introduced a new 'open data triage' assessment process to systematically and consistently identify, address, and mitigate issues with a dataset that limits their potential openness.</p> <p>We have also explored several proof-of-concept (PoC) initiatives to help enable asset and Energy System data integration. This includes the development of a DSO Dashboard, which demonstrated the value of data accessibility and management of network planning systems by visualising Seasonal Firm Capacity, seasonal headroom, & utilisation of Grid Supply Point & Primary substation. We have also developed a tactical PoC cloud analytics platform to support DSO regulatory reporting.</p>	<p>Continue to invest and refine our technology and processes aligned to data availability, including deployment of a strategic analytics platform to enable further integration across out asset, customer and energy system data holdings.</p> <p>Work to further enhance interoperability across the energy sector will continue with the development of a CIM compliant Long Term Develop Statement, through engaging with the ENA led working group.</p>
DD2 Upgrade technology and tooling to improve network management, planning and investment to increase efficiencies in operating the power network		<p>We have made progress in this area by initiating the implementation of the Inter Control Centre Protocol (ICCP) link with the ESO. Although this is not due to be delivered until 2026-27, we are exploring how we expedite this.</p> <p>The process has started to enable procurement of an Enterprise Active Network Management system. This will improve network management through enabling the local administration of flexible connections.</p>	<p>In 2024 we are upgrading all of our power system design tools, which will represent a significant milestone in our digital improvements.</p> <p>We will progress the design and implementation of the ICCP link, as well as continue procurement activities regarding Enterprise Active Network Management.</p>
DD3 Introduce data and applications at the point of need in order to improve colleague efficiency and effectiveness.		<p>Started the development of a mobile application that takes real time updates from colleagues in the field specifically to inform the unplanned power cuts status. This app is designed to improve the quality and timeliness of updates from field colleagues during unplanned faults; make tasks easier to complete no matter where a colleague finds themselves; and drive performance improvement and accountability. The development of this app has been driven through colleague engagement and best-in-class benchmarking.</p> <p>A trial of phase 1 functionality began in May 2024. Functions in this roll out include a 'My day' planner, with integrated push notifications for new jobs; the ability to update power cut information in real time and receive updates from our network control and contact centres; and instant visibility of the latest customer satisfaction scores for work completed.</p>	<p>Continue the trial of phase 1 functionality in our Humber and Teesside regions, assess feedback, and address changes.</p> <p>Train all other field colleagues and roll out phase 1 app to all other regions.</p> <p>Develop further phase 2 functionality within the app to integrate colleague location services, timesheet recording, and incorporate the same functionality into planned power cuts.</p>
DD4 Continue to invest in advanced cyber controls and tools to maintain a robust cyber-security posture, aligned to the threats emerging from increased digitalisation.		<p>In 2023-24, we successfully maintained our ISO 27001/19 certification and are on track to migrate to the new version of the standard in 2024-25.</p> <p>Market research, to understand the technologies that can enable a resilient mobile voice communication system capability, has taken place and the solution that best serves Northern Powergrid's needs has been identified. As this capability is used when there is a disturbance on the mobile phone network or if engineers are in a low signal area, work is underway to engage the broader business to collect all the appropriate use cases.</p>	<p>Migrate to the new version of the ISO 27001 standard in 2024-25.</p> <p>Complete request- to-tender documents once all business requirements are captured and begin procurement process to find a new technology partner for our resilient mobile voice communications.</p>
DD5 Modernise the back-office environment to reduce risk, secure information and improve colleague experience.		<p>In 2023 project resources were on-boarded to form the Back-Office Programme and start business requirements gathering. Throughout 2023-24, process mapping of current processes, and the to-be processes, relating to the HR, Finance and Supply chain elements of the Back-Office progressed.</p> <p>The cloud infrastructure design that will host the evergreen solutions has also been achieved and options have been explored to deliver HR capability early in the deployment, offering process efficiencies around recruitment.</p>	<p>In Q4 2024, the programme will seek consultation from experienced roll out partner to assess deployment options, sequencing for the functionality to be implemented, and design the change adoption approach for the business to ensure the appropriate skill set and teams are engaged at the right time.</p>

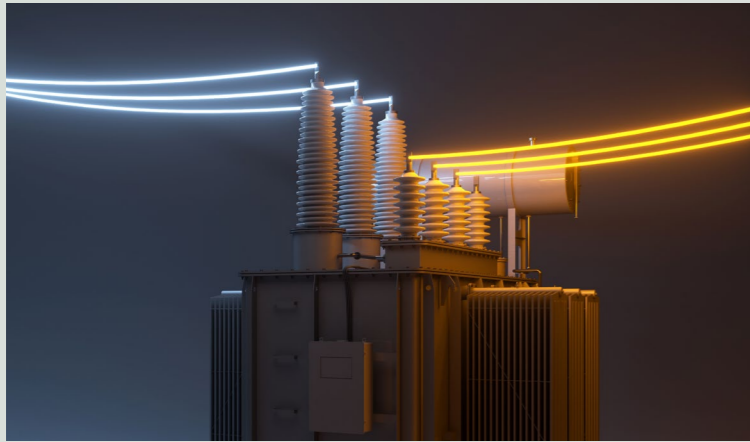
Data & Digitalisation - Commitment Summary (2 of 2)

Commitment	Status	How are we doing?	What's Next?
DD6 Introduce improved field-force, work and asset management processes to improve operational performance.		<p>Activity is yet to start on this commitment as it will form part of the Oracle Field Services road map, a deliverable for later in ED2.</p>	<p>Work to start to build the capability allowing for connections work to be available via a mobile application will begin in Q1 2025.</p> <p>The initial focus for Oracle Field Services is the automated scheduling of maintenance work.</p>
DD7 Deploy robotics and automation to reduce the cost of low-value, high-volume tasks and improve customer and colleague experience.		<p>We currently have seven active Robotic Process Automations (RPAs) across Finance, Field Operations, IT, and People Services.</p> <p>Out of the total 32 processes we have assessed for consideration for entry into the RPA programme, seven are now active, eight have a roadmap planned for their deployment active, and fifteen are in the pipeline to receive detailed assessments going forward.</p> <p>Whilst our main focus remains on targeting processes that drive efficiency, and return hours to the business, we have also identified processes where we can enhance cyber security.</p>	<p>As part of the roadmap to future automation, we will target improvements to internal data and processes which will make them easier to automate in the future.</p> <p>We have begun digitising the few remaining paper-based processes in our business to digital forms, which will significantly improve our automation capabilities going forward.</p>
DD8 Implement self-serve, personalised web technologies to be ready for greater customer demand, providing insight and interaction portals to improve customer experience and reducing cost to serve.		<p>Work to deliver our new, modern, and easier to navigate external website are well underway. We have completed the procurement process, having seen pitches from several Digital Transformation companies and have selected our preferred provider. They have completed requirement gathering and are currently building definition documentation and design concepts to define what the new website will look like and how the customer journey would look.</p> <p>The expansion of our Autodesign capability is currently underway to include customers who want to install Low Carbon Technologies (LCTs) to existing connections, due to complete summer 2024. We are also part of a collaborative project run by the ENA, looking to introduce an industry wide standardised, digital interface for customers looking to carry out a LCT connection.</p>	<p>We expect to continue our expansion of the Autodesign tool to improve our ability to handle LCT requests in bulk.</p> <p>Work is underway to re-engage stakeholders to understand what a one-stop-shop solution for vulnerable customer engagement on LCTs would look like and what it will entail. This will help shape our next steps for that deliverable.</p>
DD9 Enable advanced analytics and real-time visibility of our assets to improve the operation of the power network		<p>We have developed our requirements regarding a data analytics platform and are exploring different solutions to ensure we get the best value for money as well as offer us the capabilities we will need in the more data-driven world of the future.</p>	<p>We will finalise our choice of a data analytics platform and begin building our favoured solution for deployment later on in the regulatory period.</p>
DD10 Provide future-proofed, agile solutions in order to be flexible enough to adapt to the change in the energy sector.		<p>Building on the growth in cloud platforms in our data and customer product space, we have now established a fully deployed DevOps capability to support the most advanced cloud technologies we use to support our customer facing website and our field mobile application.</p> <p>Whilst we have seen great benefit in this new capability, we are taking the time to learn how best to expand this capability, and how we resource this on an enduring basis.</p> <p>A redesign of the organisational model, completed in 2024, saw the recruitment of a new senior lead who is accountable for transitioning emerging products into the fully operationalised capability and will be routinely assessing this capability to ensure it continues to be fit for purpose.</p>	<p>We will grow our DevOps capability in the remainder of the period, and consider whether we will we expand into DevSecOps.</p>

Innovation (1 of 2)

Our innovation strategy incorporates six key strands, covering key areas of our business plan, and includes future project planning, current trials, and successful completed trials that have now been scaled up.

Identify opportunities to accelerate the benefits of flexibility



Current innovation:

Artificial Forecasting is investigating the use of machine learning/AI to provide fast, accurate load forecasting for DSO. The project is developing innovative AI-based approaches to augment load forecasting capability, helping flexibility become more realistic as a reinforcement option.

Deploying innovation into business as usual

After a successful trial, our programme of **LV monitor** installations on our ground-mounted secondary distribution substations is being rolled out across the network.

The monitors allow us to utilise **Active Network Management** and analyse network demand and demand-growth, which in turn allows us to make informed investment decisions around where demand can be managed by active flexibility, and where further network reinforcement is needed

Future innovation plans

Our flagship **DSO for Smart Local Energy Schemes** project spans the full five years of RII0-ED2 (2023-28) and will help us unlock the use of Low Voltage flexibility, enabling communities to make best use of locally produced energy.

Develop sophisticated data management and analytics to inform energy system forecasting, planning and real-time decision making



Current innovation:

Readi aims to develop a common framework that is intended to facilitate analysis and application of appropriate climate data among all stakeholders to enhance the planning, design, and operation of the power sector. A number of datasets and publications have already been issued through the project.

Future innovation plans

The **Scenario Analysis for Non-domestic Network Decarbonisation (SANND)** project will seek to develop a software tool to visually display forecast scenarios of additional demand on electricity distribution networks. It will model the propensity for individual large energy users to take different decarbonisation routes and build into a whole network model.

The **Fractal Flow project** will look to develop a tool which provides clear visibility of fractal network power flow to bind data-streams to a virtual network structure. This system will help unlock additional capacity by providing clearer status visibility and explore integration of machine learning analysis and targeted data exchange across Grid Supply Points.

Enhance the connections process to facilitate higher volumes and different types of connection



Current innovation:

Inform aims to develop AutoDesign for large public sites such as hospitals, council and military facilities, allowing high voltage (HV) connections customers to self-serve and enabling more focused allocation of our engineering resources.

Deploying innovation into business as usual

Our **AutoDesign** project has created a web-based, self-service design tool that is live for our customers, providing those looking to connect EV chargers access to high-quality designs at a lower cost.

Further work is being done to enable capabilities to apply for LCT installations en-masse for larger projects.

Future innovation plans

The **Diversified Flexible Queue Management** project will enable us to explore the extent that diversity and flexibility data can enable faster connections, including for those with innovative approaches that could be deployed to manage and mitigate constraints.

Maintain the dependability of the energy system as seen by the customer during the energy system transition and decarbonisation



Current innovation:

The **Resilient Customer Response** project has identified a technical solution to utilising behind-the-meter (BTM) assets for resilience at a local scale. The solution identified uses a microgrid at the secondary substation level, with a grid-forming battery to re-start the microgrid and BTM assets during power cuts. We are exploring different technical approaches that could be used to support BTM assets, providing power to other customers.

Deploying innovation into business as usual

Our **Foresight** fault prediction project represents a revolution in LV cable fault management. So far, the project has made hundreds of thousands of pre-fault identifications prior to them becoming permanent faults. This project has now transferred to business-as-usual operations and the aim is to use the technology to target network repairs before faults occur.

Future Innovation Plans

Our **MicroResilience** beta phase project will build on our prior successful trials. It will allow us to keep customers on supply even after faults have taken out higher voltage circuits. Installation and commissioning is already underway and data collection will commence thereafter.

Remove barriers preventing access to the energy system, particularly for those that are vulnerable or less advantaged



Current innovation:

Resilient Homes is a key initiative for vulnerable customers. The project utilises a domestic battery solution for ensuring that medically electrically dependent customers remain on supply if a fault occurs on the network. 30 units have been installed and initial results have been positive with users not experiencing disruption of supply during wider power cuts.

The framework for implementing our **Social Impact** programmes has been developed, tested and finalised. Two pilot programmes have been implemented in Teesside and South Yorkshire. These trials aim to ensure that we leave a lasting social legacy alongside major projects and look for opportunities to engage vulnerable customers in the energy transition.

Create capabilities to deliver a next generation local energy network that links up whole system energy sources and vectors



Current innovation:

The **Community DSO** project, launched in April 2023, is exploring relationship between energy communities and the distribution network, exploring how energy communities can support the DNO transition to DSO and vice versa.

Future innovation plans

The **Cross Vector Hub** project will seek to design and implement a Multi-Vector (Gas+ Electricity) Energy Hub that optimises devices across a truly whole system solution to increase network resilience and operating efficiency.

Annex

Northern Powergrid (Northeast) plc

Performance in 2023/24

Safety

Our long-term safety performance is strong and places us amongst the strong performers in our industry. However in 2023-24 we missed our annual headline safety target for Northern Powergrid as a whole, measured by the Occupational Safety and Health Administration (OSHA) rate – 0.34 against a target of 0.18 - representing nine reportable incidents in a workforce of around 2,850. We maintained full compliance with all HSE measures.

Environmental impact

We published our [Annual Environment Report](#) alongside this report on the 31st October 2024. We have continued to make progress towards achieving net zero operations by 2040.

Community outreach

Our 2023/24 aggregated customer satisfaction score for our fuel poverty support programme stood at 9.6 out of 10 and for low carbon technology support was 9.3 out of 10.

Vulnerability

Our [Annual Vulnerability Report](#) for 2023/24 was published on 31st July 2024.

We had 440,609 PSM customers registered, meaning we have reached 66.7% of our eligible Northeast vulnerable customers with our PSM service.

Distribution system operation

We published our first [DSO Performance Panel Submission](#) - our performance panel score for 2023-24 was 6.6 out of 10 and our stakeholder satisfaction score was 7.8 out of 10.

Innovation

At a Northern Powergrid level, we spent £2.9m across 34 dedicated innovation projects. These projects are expected to deliver benefits to our customers of £250m in ED2 and beyond.

		Actual	Status	Trend
Network	Number of customers	1.6 million		
	Total network length	42,908km		
Reliability & Availability	Customer interruptions (including exceptional events)	51.5	●	◀▶
	Customer minutes lost (including exceptional events)	55.2	●	▲
Customer Satisfaction	Broad measure of customer satisfaction	9.0 out of 10	●	▲
Connections	Time to quote	4.1	●	▼
	Time to connect	31.1	●	▼
	Number of completed connections	9,018		
	Customer satisfaction	8.9 out of 10	●	▲
	Major connections satisfaction	7.9 out of 10	●	-
Financials	Unrestricted domestic tariff charge	£91.73		
	Total expenditure	£165 million		
	Percentage of allowed expenditure	76%		

Northern Powergrid (Yorkshire) plc Performance in 2023/24

Safety

Our long-term safety performance is strong and places us amongst the strong performers in our industry. However in 2023-24 we missed our annual headline safety target for Northern Powergrid as a whole, measured by the Occupational Safety and Health Administration (OSHA) rate – 0.34 against a target of 0.18 - representing nine reportable incidents in a workforce of around 2,850. We maintained full compliance with all HSE measures.

Environmental impact

We published our [Annual Environment Report](#) alongside this report on the 31st October 2024. We have continued to make progress towards achieving net zero operations by 2040.

Community outreach

Our 2023/24 aggregated customer satisfaction score for our fuel poverty support programme stood at 9.2 out of 10 and for low carbon technology support was 8.1 out of 10.

Vulnerability

Our [Annual Vulnerability Report](#) for 2023/24 was published on 31st July 2024.

We had 584,100 PSM customers registered, meaning we have reached 61.9% of our eligible Yorkshire vulnerable customers with our PSM service.

Distribution system operation

We published our first [DSO Performance Panel Submission](#) - our performance panel score for 2023-24 was 6.6 out of 10 and our stakeholder satisfaction score was 7.8 out of 10.

Innovation

At a Northern Powergrid level, we spent £2.9m across 34 dedicated innovation projects. These projects are expected to deliver benefits to our customers of £250m in ED2 and beyond.

		Actual	Status	Trend
Network	Number of customers	2.3 million		
	Total network length	55,686km		
Reliability & Availability	Customer interruptions (including exceptional events)	57.2	●	◀▶
	Customer minutes lost (including exceptional events)	55.0	●	▲
Customer Satisfaction	Broad measure of customer satisfaction	9.0 out of 10	●	▲
Connections	Time to quote	3.4	●	▼
	Time to connect	29.3	●	▼
	Number of completed connections	14,679		
	Customer satisfaction	9.1 out of 10	●	▲
	Major connections satisfaction	7.9 out of 10	●	-
Financials	Unrestricted domestic tariff charge	78.12		
	Total expenditure	£248 million		
	Percentage of allowed expenditure	84%		

Item	Abbreviation	Description
Anchor organisation	-	an institution that has an important presence in a place, usually through a combination of being a largescale employer, the largest purchasers of goods and services in the locality, controlling large areas of land and/or having relatively fixed assets; and one that is tied to a particular place by its mission, histories, physical assets and local relationships.
Assets	-	physical electricity network infrastructure, such as cables, power lines, poles, substations and other equipment, digital assets (e.g. IT systems) as well as others such as financial assets.
Biodiversity	-	a measure of the number of different species of living organism that are present within a given area, also including the number of representatives of each species, and the variety of habitats within the area.
Connections	-	the term for connecting to the electricity network. Types of connection can include new buildings, EV chargers, or small- and large-scale electricity generation such as solar panels.
Customer Interruptions	CI	a measure used to show how many customers are impacted by power cuts. It is calculated by taking the number of people impacted by faults and dividing by the total number of customers and multiplying by 100 - basically it shows the average number of interruptions experienced per 100 customers.
Customer Minutes Lost	CML	a measure used to show how much power cuts impact customers. It is calculated by taking the number of people impacted by faults, times by the restoration time of those faults, and then divided by the total number of customers - basically, it is the average time an average customer can expect to be off supply in a year.
Customer relationship management	CRM	processes and systems that compile, manage and analyse customer data across multiple channels, such as website, telephone, live chat, direct mail, marketing materials and social networks.
Data	-	facts and figures collected for statistical analysis, which may include customer data (names and addresses), network data, financial data.
Decarbonisation	-	the reduction, and ultimately elimination, of greenhouse gas (GHG) emissions
Digitalisation	-	focused digital and technology agenda that supports the integration of digital technologies to improve everyday business activities.
Distributed generation	-	these are generators connected to ("embedded" in) the distribution system, rather than the transmission system.
Diversity, Equality and Inclusion	DEI	separate but interlinked issues. Equality refers to treating everyone fairly, challenging discrimination and removing barriers to create equal opportunities. Diversity refers to different values, abilities, and perspectives, and creating environments that welcome and value diverse backgrounds, thinking, skills and experience. Inclusion refers to equal access to opportunities and resources, and making reasonable adjustments to facilitate participation.
Distribution Future Energy Scenarios	DFES	distributed forecasting scenarios undertaken by every Distribution Network Operator to enable the organisations to picture possible energy futures and explore the issues they raise. Inputs include variable predictions on low carbon technology (LCT) uptake, generation and energy efficiency, with assumptions informed by government policy, stakeholder engagement, regional knowledge and market information.
Distribution Network Operator	DNO	DNOs own, operate and maintain the electricity distribution networks.
Distribution System Operation	DSO	DSOs securely operate and develop an active distribution system comprising networks, demand, generation and other flexible DER.
Distribution Use of System	DUoS	distribution network charges.
RIIO-ED2	ED2	the regulatory price period, set by Ofgem, which runs from 1 April 2023 to 31 March 2028.
Extra high voltage	EHV	electricity conveyed at 33,000 or 66,000 volts.
Energy Networks Association	ENA	the industry body representing energy network operators in the UK and Ireland.
Energy networks	-	for electricity this is also referred to as 'the grid'. Energy networks are the wires and pipes that carry electricity and gas to properties – they differ from the energy supplier, which sells consumers the actual electricity and gas consumed.
Energy transition	-	the shift from fossil fuels-based energy production and consumption, such as oil, natural gas and coal, to renewable energy sources such as wind and solar, and the use of batteries, as part of global economic decarbonisation.

Item	Abbreviation	Description
Environmental Action Plan	EAP	the assessment and profiling of environmental impacts and designing strategic interventions to mitigate and address those impacts, and report on the progress.
Electric Vehicle	EV	a vehicle powered by electricity.
Flexibility	-	the ability to increase or decrease the production or consumption of energy at a given or requested time to support the wider electricity network and optimise capacity available for customers
Fuel poverty	-	there are different definitions of fuel poverty and metrics for measuring the extent and depth of the problem. In England, the government has refined the way in which it measures fuel poverty and uses a Low Income Low Energy Efficiency indicator (LILEE). Under LILEE a household is considered to be fuel poor if they are living in a property with a fuel-poverty energy efficiency rating of band D or below (E,F,G) and when they spend the required amount to heat their home they are left with a residual income below the official poverty line. The three important elements in determining whether a household is fuel poor are household income, household energy requirements, and fuel prices.
Heat pump	-	electrical heating, working somewhat like a refrigerator in reverse.
Local Area Energy Plan	LAEP	an approach for local and sub-regional institutions to explore different future local energy scenarios to help inform and support local authorities, distribution network operators, business and communities to plan for a cost effective low carbon transition.
Low carbon technologies	LCTs	technologies that have the ability to reduce carbon dioxide emissions traditionally associated with energy consumption (e.g., electric vehicles, electric heat pumps, solar panels).
LV cables	-	low voltage power cables less than 1,000 volts.
LV network	-	low voltage network – network less than 1,000 volts.
Major connections	-	connections to the network requiring substantial work on the network, "upstream" of the point of connection.
Megawatt hour	MWh	a measure of electrical energy equivalent to a power consumption of one thousand kilowatts for one hour.
National Cyber Security Centre	NCSC	UK government organisation providing advice and support on cybersecurity threats for the public and private sector.
Net zero	-	legally binding greenhouse gas emissions target which requires the UK to reduce its net emissions by 2050. Net zero by 2050 was enshrined into UK law in June 2019
Network Investment Strategy	-	Ofgem says this "sets out the process for the cost benefit analysis undertaken to provide understanding of the interventions that can be efficiently applied to manage losses."
Office of Gas and Electricity Markets	Ofgem	independent energy regulator governed by the Gas and Electricity Markets Authority (GEMA).
Open Data Institute	-	UK non-profit working with companies and governments to build an open, trustworthy data ecosystem.
Priority Services Membership	PSM	a database of customers who may need additional support or be more vulnerable, due to medical dependence on electricity, poor mobility, age or other needs. Previously known as the Priority Services Register.
Resilience	-	the Intergovernmental Panel on Climate Change (IPCC) defines resilience as "the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity of self-organisation, and the capacity to adapt to stress and change." In the context of ED2, resilience refers to Northern Powergrid's asset resilience (ability of the company's assets to withstand age-related risks and the increase in electricity usage due to decarbonisation), climate resilience (ability of the company, its assets and the network to withstand the impacts of climate change), and physical and cyber resilience (ability of the company's IT and OT assets to withstand the impacts of climate change, physical threat, and cyber-attacks).
Science-based targets	-	clearly defined and measurable targets for companies to limit greenhouse gas emissions. The Science Based Targets initiative (SBTi) defines targets as "science-based" if they are in line with what the latest climate science deemed necessary to meet the goals of the Paris Agreement."

Item	Abbreviation	Description
Scope emissions	-	Scope 1 emissions are direct greenhouse gas emissions that occur from sources that are controlled or owned by an organisation (e.g., emissions associated with fuel combustion in boilers, furnaces and owned or leased vehicles and equipment). Scope 2 emissions are indirect emissions associated with the purchase of electricity, gas, steam, heat, or cooling. Scope 3 emissions relate to wider footprint such as emissions from the production of goods procured by the organisation, business travel (other than in company-owned vehicles), and employee commuting.
Sulphur Hexafluoride	SF₆	a greenhouse gas used as an electrical insulating material.
Social return on investment	SROI	a method for measuring values that are not traditionally reflected in financial statements, including social, economic, and environmental factors. They can identify how effectively a company uses its capital and other resources to create value for the community.
Stakeholder	-	a party that has an interest in a company and can either affect or be affected by the business.
Stakeholder engagement	-	the identification of stakeholders, and communication and consultation with them for research and input – in the case of Northern Powergrid’s business plan, stakeholder engagement took the form of phone calls, panels, webinars, roundtables and surveys with a variety of stakeholders, from other utilities and local authorities to vulnerable customers and expert panels.
Substations	-	a key part of the grid, substations transform voltage from high to low, or the reverse, between electricity generating stations and customers’ properties.
Totex	-	ties together capital spend (capex) and operational spend (opex), over a long-term whole-of-life view of total expenditure (TOTEX).
Ultra-low or zero emission vehicles	ULEVs or ZEVs	low emission vehicle that emits 75g/km CO ₂ or less.
Vulnerable customers	-	Ofgem defines vulnerability “as when a consumer’s personal circumstances and characteristics combine with aspects of the market to create situations where he or she is: significantly less able than a typical domestic consumer to protect or represent his or her interests; and/or significantly more likely than a typical domestic consumer to suffer detriment or that detriment is likely to be more substantial.”
Whole system	-	a cross-sector coordinated approach that incorporates more than the electricity system or energy system, but considers all sectors, industries, stakeholders and participants, joining up elements such as generation, transmission, distribution, buildings and customers with electricity, heat and transport, together with physical, digital and marketing systems, and policy.
Worst-served customers	WSC	customers who experience more frequent and longer interruptions. Ofgem’s definition of worst-served customers for ED2 is those that experience 12 HV interruptions (power cuts) over a threeyear period, with a minimum of two per year. This definition currently only includes power cuts where the fault was at high or extra high voltage.

