# Our Collaboration Plan

## Smart Optimisation Output

May 2024

# Contents

# Foreword

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**Electricity networks are central to reaching net zero carbon emissions in line with government targets and regional ambitions. Heat and transport energy vectors will shift to electrical alternatives and generation will move to smaller scale, distributed renewable solutions. This will lead to increased electricity demand on the distribution network served by localised generation. Our system will need to be more flexible to balance demand against more generation, requiring greater collaboration between us, our stakeholders and the wider energy industry.**

Decarbonisation requires a joined-up approach to planning as we transition to net zero and in operating a more flexible, coordinated system going forward. We must work with all energy stakeholders, engaging vertically, horizontally and across vectors in order to establish the most efficient, optimised overall energy solution for our region. A smarter and more flexible distribution network, by definition, means we will be working with energy users more closely to coordinate the use of our network.

We recognise both the challenge and opportunity of coordinating many parties and as such have created this Collaboration Plan. This plan will bring together the set of actions that will drive collaborative working. Our plan is set out across three themes; data sharing, collaborative partnerships and digitalisation, and sets out the channels for collaboration that are in place and our future plans to deliver further tools and processes to increase collaboration.

Over the first year of ED2 we have experienced a significant increase in engagement with stakeholders, both driven by us and through stakeholders contacting us. This demonstrates the changing landscape we are in and how important collaboration is and will be.

We are continually developing our plans in response to feedback, so we encourage engagement with us on this plan; tell us what will deliver greatest value to you and your organisation, or what should be developed upon to drive more benefit. We will use the information to develop our network going forward and feedback the results.

# Introduction

**In one of the most ambitious national responses to the threat of climate change, the UK government enshrined the target for net zero by 2050 in law in 2019, and accelerated it to 2035 in response to the advice of the Climate Change Committee (CCC) in setting the Sixth Carbon Budget.**

Electricity networks are at the heart of this change, and for our region to meet this national commitment we need to design and manage our network by utilising smart approaches to optimisation, so that it can play a major part in decarbonising the whole energy system, including transport, heat and industry.

To meet this net zero target, large fossil fuel generators are being replaced by smaller distribution network connected renewable generators, referred to as Distributed Energy Resources (DERs), including wind, solar and energy storage systems. Simultaneously, energy demand will significantly rise as consumers adopt Low Carbon Technologies (LCTs) such as electric vehicles and heat pumps. We face the challenge of facilitating an unprecedented increase in demand for electricity, whilst also managing greater volumes of intermittent generation connected directly to our network.

Our vision, developed collaboratively with our customers and stakeholders, is to deliver a smarter and more flexible energy system for our customers to decarbonise efficiently. To achieve this, we are implementing Distribution System Operation (DSO) functionality to develop our network and commercial approaches to manage the increasingly complex power flows on our network, defer costly network reinforcement via flexibility procurement and effective intervention measures, and ensure that the transition to net zero is efficient and affordable.

Our DSO strategy for 2023-28 details £92m of investment in new information and operational technology to enhance digitalisation capabilities, upskill our workforce and build on successful innovation opportunities in order to achieve our RIIO-ED2 objectives.

Collaboration with customers and cooperative network planning with other energy system parties (e.g. the Electricity System Operator (ESO), gas networks and energy suppliers) and stakeholders outside the energy sector (e.g. in transport and industry), will be pivotal to achieving whole system optimisation to deliver greater emissions reductions, lower costs and improve the quality of the energy services our customers receive.

Our Collaboration Plan sets out the channels, deliverables and initiatives that will enable an effective, engaged and cross-vector approach to optimising a decarbonised energy system.

# Our Region

## We are the company responsible for the electricity distribution network that powers everyday life for 8 million customers across 3.9 million homes and businesses in the North East, Yorkshire and northern Lincolnshire.

These regions are served by our two licence areas - Northern Powergrid Northeast and Northern Powergrid Yorkshire. Our electricity network spans around 25,000 square kilometres and consists of 96,000 kilometres of overhead power lines and underground cables, and more than 63,000 substations.

Northern Powergrid proudly serves 36 local authorities or combined authorities, and geographically sits adjacent to three other Distribution Network Operators: SP Energy Networks to the north, Electricity North West to the west and National Grid Electricity Distribution to the south.

As we transition into a new energy landscape and adapt our network to facilitate the evolving demands in electricity usage, we recognise that collaboration with all of our regional stakeholders is vital. This includes working closely with users of our network and key regional facilitators of decarbonisation, such as local authorities, to understand the pathway that we need to enable, and working with the wider energy industry of network and system operators to ensure the most efficient whole system enablers to that pathway are deployed.


**8m**
people served

**2,600**
people in our workforce

**3.9m**
homes and businesses

**25,000**
km² of network

**63,000**
substations

**96,000**
km of overhead lines and underground cables

# Overview of Our Collaboration Plan

## An efficient, low-cost transition to net zero and integrated energy networks will require enhancements in data and digitalisation to achieve a greater level of coordination across all energy stakeholders.

This will involve:

- Packaging and providing network data in a way that is accessible, transparent and interoperable, such as via our Open Data Portal.
- A greater dependency on data capture and forecasting capability to increase visibility of our network and allow stakeholders to make more informed investment decisions.
- Our Regional Insights team improving the coordination and sharing of data to incorporate local stakeholder plans into our strategic network development.
- Participating in cross-sector and cross-vector network planning so that investment decisions benefit the whole energy system.
- Implementing industry-established digital platforms to assist stakeholders on the journey to becoming a Flexibility Service Provider, including tendering and dispatch services.
- Creating collaborative partnerships with other network operators, industry experts and regulators to ensure our approach to network planning is consistent and transparent.

Collaboration is central to both creating this energy system and operating it on a long-term basis. We must work with our stakeholders and other energy system participants to deliver new processes, systems and infrastructure that meet all participants' net zero ambitions in the most efficient and economic way. Simultaneously, we must also create an energy system that operates on a more integrated and coordinated basis going forward.

Our Collaboration Plan is here to provide a gateway into Northern Powergrid by reflecting the existing collaboration, future plans and our ambitions. We continue to appreciate your views and engagement.

**Our plan is arranged around the following themes:**

| | |
|---|---|
| Data sharing | Share data openly with stakeholders to support their net zero planning and investment decisions. Also, creating channels to include stakeholder data, information and insight into our network planning. |
| Collaborative partnerships | Actively engage with the whole energy system to promote whole system optimisation, including adjacent licensees, embedded IDNOs, other utilities e.g. water, gas networks, electricity Transmission Owners (TOs) and the Electricity System Operator (ESO). |
| Digitalisation enabling collaboration | Utilise digitalisation to enable improved collaboration and a more efficient transition to net zero through enhanced planning and flexibility procurement. |

# Collaboration underpins many of our existing strategies and enables more optimised investment

**Collaboration underpins many of our existing strategies. Through these strategies we will deliver a more collaborative approach to planning and operating our network, leading to more efficient network decision making and whole system investments. This will directly result in optimised Load Related Expenditure outcomes and achieving a decarbonised grid at lowest cost for our customers.**

**The following sections give a short overview of the underlying strategies and plans that have been brought together.**


## DSO Strategy

Our strategy for delivering our DSO objectives has been assigned to 5 outcome areas:

1. **Data capture.** Increased visibility of network; installation of 10,000 additional monitors; improve information exchange with stakeholders.
2. **Analysis capabilities.** Transform our analysis capabilities to enable data-driven decision-making; use analytics & machine learning to emulate granular time-series datasets.
3. **Open data & joint planning.** Unlocking new capabilities and benefits for customers through provision of open data, and engaging in joint planning with our stakeholders.
4. **System operation & optimisation.** Enhance processes and systems to optimise our network with increasing customer and network flexibility; implement enterprise Active Network Management solutions; create effective coordination with ESO for dispatch of flexibility services.
5. **Customer flexibility.** Enable a significant uptake of customer flexibility and facilitate development of new markets for customers providing services to the networks.

## Digitalisation Strategy and Action Plan

Objectives outlined in our DSAP cover open data, new and upgraded digital tools and increased insight of network operations.

Our data and digitalisation vision can be summarised into five key outcomes:

1. **Open and transparent data:** enabling innovation and development of new markets while delivering net zero solutions at lowest costs.
2. **Whole system efficiency:** preparing for both a cost and carbon optimised whole energy system.
3. **Service excellence:** delivering seamless, efficient service with more choice and personalisation.
4. **Cyber secure:** responding to and mitigating the cyber threats of increased digitalisation.
5. **Reduced cost:** driving lower cost, efficient operations, front and back office.

These outcomes will be enabled by 10 core areas in the DSAP, the outcomes relevant to collaboration are:

1. The journey to open data, 2. Network Management capability to enable net zero, 8. Enabling customers to self-serve, and 9. Advanced Analytics.

## Whole System Strategy

Underpinned by our network investment plans and DSO transition, our Whole System Strategy focuses on how we are working with customers, other energy system parties and stakeholders outside the energy sector (e.g. heat and transport) to develop a net zero plan which benefits the whole energy system.

Our Whole System Strategy is based on of four specific outcomes:

1. Remove barriers for customers to use their equipment to support the whole energy system.
2. Ensure our customer's future needs are met through cross-sector and cross-vector planning.
3. Develop the blueprint for the next generation network by rolling out proven innovation.
4. Exchange knowledge with those specifying future LCT and low carbon use cases.

## Connections Plan

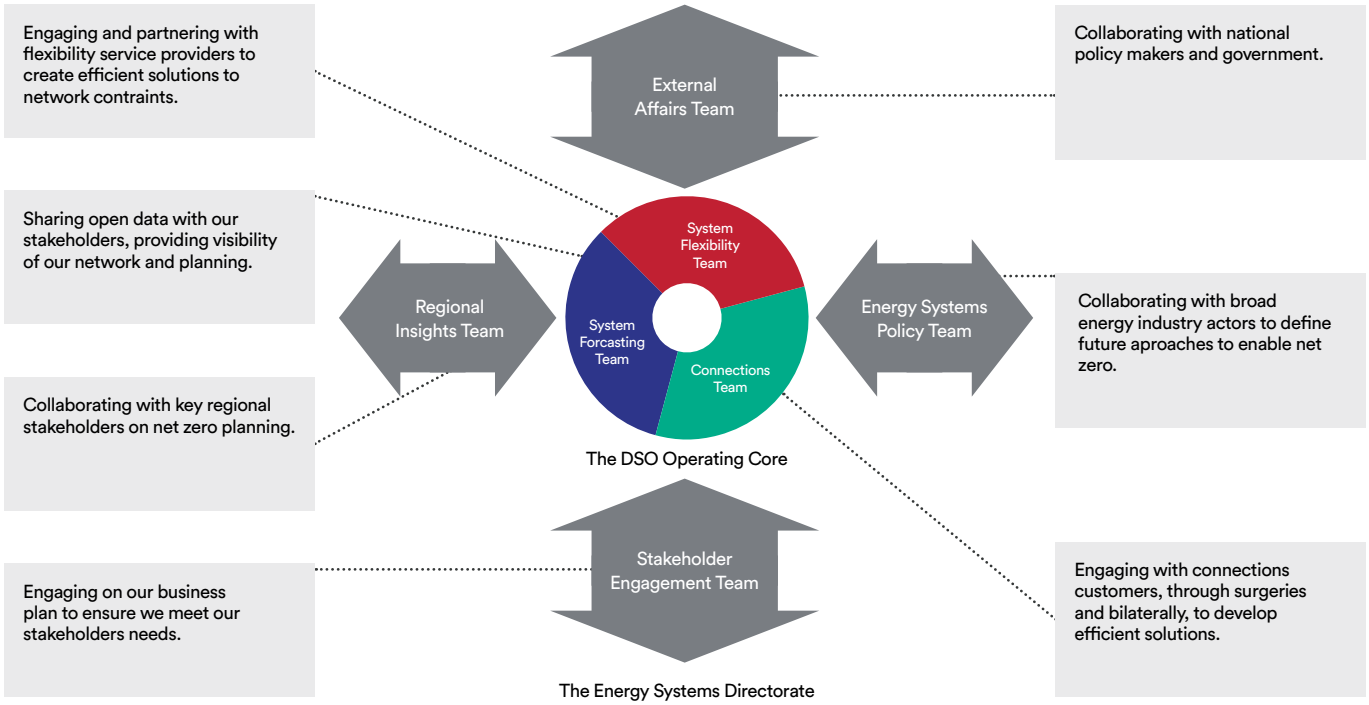
Our Connections Plan outlines how we will deliver an efficient and cost-effective connections service with smarter, more flexible solutions that support our region's net zero ambitions. It is summarised by five key objectives:

1. Help our small works customers to get connected quickly by providing more self-service options, greater support and more flexibility over delivery.
2. Facilitate the mass uptake of LCTs, flexible connections and network flexibility to support the drive to net zero.
3. Empower our customers to make more informed decisions about how and where to connect by expanding the scope of network information.
4. Continue to facilitate fair and open competition so that our customers have a choice in who delivers their connection.
5. Deliver an efficient connections service for all our customers, providing more technical advice to customers on smart and more flexible solutions.

## Responsibility within Northern Powergrid for delivering a collaborative energy system

In order to create a focal point for collaboration with our stakeholders, system users and broader engagement with industry, we have created our Energy Systems directorate. This has drawn together important existing functions such as Stakeholder Engagement and External Affairs and aligned them with the newly created Distribution System Operation functions (System Forecasting, System Flexibility, Regional Insights and Energy System Policy). Importantly, we have integrated our Major Connections business within the Energy Systems directorate, recognising the intrinsic role that we have in enabling net zero by getting LCTs, generation and large-scale decarbonising industry connected to our network.

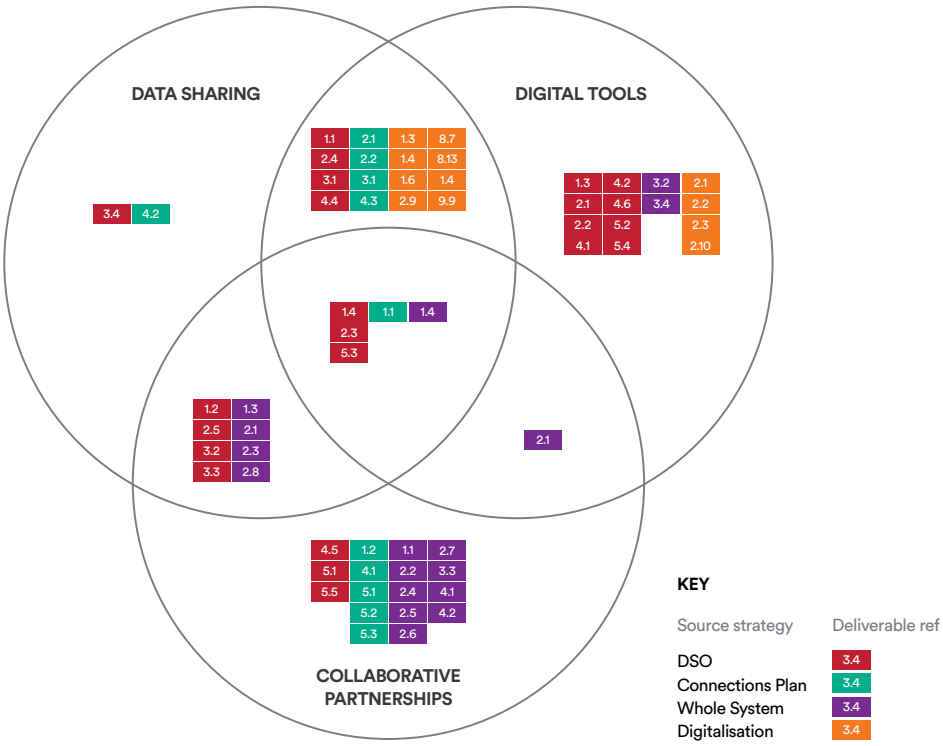
Each team plays a vital role, operating interdependently from one another to create a key business unit, equipped to effectively navigate an efficient and affordable net zero transition for our stakeholders and customers. Energy Systems centralises and coordinates Northern Powergrid's engagement and collaboration with all net zero stakeholders, to create efficient physical and market solutions to the challenges net zero brings.




## Mapping actions to themes

The adjacent graph shows, at a high level, how the deliverables and initiatives from across the DSO Strategy, Connections Plan, Whole System Strategy and Digitalisation Strategy and Action Plan map to the objectives of our Collaboration Plan. This demonstrates how across multiple areas we are addressing the need to share data, create channels and tools to collaborate to optimise our energy system.

References to deliverables and initiatives in the diagram to the right are described in detail in the Annex, providing an overview of the progress made and future commitments against each.



# Our Collaboration Action Plan

**The following section provides details of the areas of our plan that we are currently prioritising delivery of, setting out progress made and key next actions. The full list of deliverables is available in the Annex, on page 19 onwards.**

# Theme 1: Data sharing

**Our ability to share data with stakeholders to enable collaborative planning and provide network visibility is key to the implementation of regional decarbonisation plans and whole system optimisation. We recognise that high quality, user-friendly and accessible data and information provision will be required for customers and stakeholders to effectively participate in a more dynamic and integrated system.**

## Our approach to data sharing

In line with the joint commitment to open data through the Energy Networks Association (ENA), we see open data as a vital tool to enable a more efficient approach to whole system network planning. Our Open Data Portal delivers a central gateway for us to deliver asset, network, operational and other data to our stakeholders, providing them with a deeper understanding of our network and enabling real collaborative planning. Recognising the need for more tailored approaches in some areas, we have established our Regional Insights team who support collaborative planning discussions with bespoke datasets.

Beyond the sharing of data, our Collaboration Plan extends to delivering self-service tools for stakeholders, allowing them access to insights on our network – a step beyond data sharing.

We are actively reviewing our data provision, listening to stakeholder needs and seeking new ways of meeting them. As such we are constantly developing our plans and delivering new functionality, for example delivering the Connections GSP Pipeline lookup tool in Q1 2024.

Highlights of the new **datasets and products** released in the past year:

- LV demand heatmaps
- Included secondary reinforcement data in our Network Development Plan (NDP)
- Long Term Development Statement (LTDS) visualisations and updates
- DSO dashboard – providing half-hourly data for GSPs
- Third party data including a national Embedded Capacity Register (ECR)
- Low Voltage monitoring data
- Functionality for data re-use through case studies on the Open Data Portal
- An Open Data Portal glossary

DATA SHARING

# Open Data Portal

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — 56 datasets available including our Long Term Development Statement (LTDS), Network Availability Heat Maps, DFES, NDP and substation utilisation list.<br>— Industry first national Embedded Capacity Register showing all distribution connected generation in GB.<br>— Industry-first publication of aggregated smart meter data allowing highly granular understanding of electricity usage. | We have developed a clear Open Data Portal roadmap informed by our stakeholders and will deploy the following:<br>— Third party low carbon technology uptake data integrated into our Open Data Portal.<br>— Demand heatmaps of our low voltage distribution network.<br>— Real-time power visualisations of our primary network. |
| Benefits | — Customers empowered to make informed decisions on how and where to apply for connections to our network.<br>— Stakeholders with an interest in local planning, such as local authorities, able to access rich data to inform and support their planning assumptions. | This will allow stakeholders to do the following:<br>— Utilise data to make granular planning assumptions and identify specific locations on our distribution network appropriate for large scale LCT deployment.<br>— Understand the utilisation of our network in more granular and real-time terms. |

**Our Open Data Portal (System Visualisation Interface) is a core enabler of the net zero transition, facilitating an integrated and transparent way of providing tools that our customers and stakeholders need to self-serve energy system data, undertake collaborative network planning, and get LCTs connected.**

## Open Data Portal

Our Open Data Portal is a vast online portal that offers customers and stakeholders easy access to data and information about our distribution network. User-friendly analytical tools allow customers to generate customised maps providing visibility of generation and demand in specific locations, self-serve to assess the availability of connections opportunities, and access information to support investment decision-making.

Going forward we will continue to introduce data products onto our Open Data Portal to provide our stakeholders with upmost levels of transparency and accuracy to our network data, including tools for real-time power visualisations, power cut maps, LV demand heatmaps and Primary & Secondary reinforcement data. We also plan to enhance our regulatory publications (such as LTDS and NDP) with visuals and tools to bring them beyond datasets, and give users a visual representation of the data.

In order to maximise the benefits of open data, we aim to collect a pool of 're-uses' from users to post on our Portal, demonstrating what the data is being used for and allowing new users to apply these examples to their own unique application. Allowing stakeholders to showcase their projects using our open data will encourage a collaborative and community-based approach and drive value from the data shared.

To enhance user navigation on our Open Data Portal we will continue to collaborate with specialists and experts to make data accessible and useable. We have completed a review, including stakeholder interviews, to gain insight on how accessible our data was; we will use this stakeholder feedback and research to reshape the entry to our platform. We are developing templates of specific page types dedicated to i) user types, ii) data themes, and iii) datasets, which will create a more customised approach for users when navigating the Portal and enable them to meet specific needs and access bespoke information. Collaboration with data specialists will shape the content of these pages, translating current industry level descriptions into more stakeholder friendly and informative language.

## Network planning transparency

Our Distribution Future Energy Scenarios (DFES) is one of the key datasets shared via the Open Data Portal. Our DFES provides a range of credible pathways for the uptake of Low Carbon Technologies (LCTs) in our region, models their impact on the Distribution network and signals locations where we may need to develop intervention options to avoid network constraints. Implementing a bottom-up approach allows us to incorporate the latest network and customer information, and providing transparency over our network plans encourages further stakeholder input. Combining this with a top-down approach, which includes cooperation with the ESO, and processing data from sources such as the GB Future Energy Scenarios and the Climate Change Commission (CCC), our aim is to produce increasingly accurate and granular forecasts of our network to be able to make the most efficient investment decisions, and decarbonise in the most cost-effective way for customers on our net zero journey.

We also share our Network Development Plan (NDP) where we set out the details of our planned network interventions ten years in advance to provide our stakeholders with information on plans for new infrastructure and flexibility services, as well as providing details of demand and generation network headroom across our region. To transparently inform our stakeholders of the investment decisions we plan to make, we will publish Distribution Network Option Assessment reports each year. This will provide stakeholders with the chance to scrutinise and provide feedback so we can incorporate their views into our final decisions for network development, whilst making sure we align with our Flexibility First approach.

DATA SHARING

# Regional Insights Team

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — Team of four established and deployed to support regional stakeholders with net zero planning, and provide data to support specific queries.<br>— Local Authority Data Portal established to allow bilateral data sharing. | — Regional Insights team growth to enable greater reach to support more stakeholders with the use of data.<br>— Dedicated programme of tutorials and explainers to support stakeholders with the use of our open data and highlight notable use-cases.<br>— Development of the Local Authority Data Portal to increase bilateral data sharing. |
| Benefits | — Bespoke datasets providing insight into specific queries, improving the quality of stakeholder net zero plans.<br>— Two-way sharing of data allowing stakeholder plans to directly influence Northern Powergrid network development plans. | — More stakeholders who feel empowered to utilise Northern Powergrid data to drive regional net zero planning, developing robust pathways and plans for our region. |

**Delivering a team of Local Area Energy Planning advisors was a commitment we made for ED2. This has been delivered as our Regional Insights team, who work closely with local authorities, housing associations, EV charging network operators, and other stakeholders looking to define decarbonisation plans for our region. The team provides expert knowledge of our network, access to data, guidance navigating the rest of our business and, critically, supporting local authorities with the development of their Local Area Energy Plans (LAEPs). Central to this role is the use and sharing of data. Our Regional Insights team support stakeholders with the use of open data, deliver bespoke datasets to meet specific needs and also utilise stakeholder data to support our own planning.**

The Regional Insights team also play a major role in developing our forecasting capabilities by acting as a medium for data sharing between our stakeholders (and their local plans) and our System Forecasting team. The Regional Insights team bolster the DFES approach, drawing in more regional stakeholder data on their upcoming plans. We have identified the most important stakeholder types, with local authorities topping the list due to their wide-reaching direct and indirect impacts on decarbonisation pathways and delivery. In 2023, we created a Local Authority Portal, via SharePoint, to allow individuals within different organisations to share data directly with us in a secure manner. The portal includes dedicated guides, tools and links to important online resources, and also allows Regional Insights team members to share personalised datasets for stakeholders based on their specific requests. We are continuing to develop the Local Authority Portal to involve more participants and broaden the use-cases and value.

CASE STUDY

## Bradford Council

A good example of the value of sharing data with our stakeholders is our collaboration with Bradford Council to determine the likely impact of their local infrastructure plan. Our Regional Insights team are supporting them by mapping their plans to our network and providing high-level intelligence on the likelihood of causing load-related network constraints, which may impact speed of delivery. Better coordination regarding data sharing and increased data capture of load behaviour on our network will continue to drive collaborative efforts with stakeholders to implement their local plans and decarbonise efficiently.


# Theme 2: Collaborative partnerships

**An efficient transition to a low-carbon energy system will require coordination across stakeholder boundaries and interfaces, such as between local and national government, network operators, energy suppliers, businesses, and individual consumers. Regional decarbonisation plans will consider the entire energy system – heat, electricity, water, transport and the supply chain from energy generation to transporting it into homes and businesses. There is a clear need for collaborative partnerships between stakeholders across all local and regional levels.**

### Our approach to collaborative partnerships

The Energy Systems directorate has been created to centralise external relationships, encourage whole system collaboration and adopt a more coordinated approach to the sharing of data with other networks and stakeholders. Cross-sector and cross-vector engagement will play an important role in developing forecasts and network plans which benefit the wider system, including heat, gas and water networks. We have made a deliberate shift to promote an outward facing culture, embrace partnerships and actively nurture collaboration.

Our Regional Insights team engage with stakeholders to ensure regional decarbonisation plans are coordinated and cohesively designed across the whole energy system. New architecture and systems will be implemented to enable near real-time two-way data exchanges with the ESO and provide efficient, short-term market operation which will support both the transmission and distribution network. We will collaborate with other DNOs, transmission network parties and regulatory bodies (such as Ofgem and DESNZ), as part of ENA Open Networks, to undertake a consistent approach to providing important network solutions to achieve our net zero target, such as conflicts of interest management regarding flexibility dispatch and transmission network access for LCT connections.

Highlights of **collaborative projects** enabling strategic planning:

- Support of Local Area Energy Plans across our Local Authority stakeholder group
- Direct membership of many Local Authority and Local Energy Partnership steering groups and collaborative forums
- Input to specific local decarbonisation plans such as ports and industrial areas
- Support to the East Coast Hydrogen project with focus on Tees Valley and Humber freeport
- InTEGReL project collaboration led by Northern Gas Networks
- Partnering with Cadent on the Scunthorpe Hydrogen Town project
- Regional Energy Strategic Modelling (RESM) innovation project

COLLABORATIVE PARTNERSHIPS

# Close collaboration with key regional stakeholders

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — Our Regional Insights team have held over 250 engagements with key regional net zero stakeholders over the past year.<br>— We have held two net zero conferences, covering our Yorkshire and Northeast region bringing together over 200 stakeholders.<br>— We have held six regional workshops focussed on reaching local stakeholders, ensuring we collaborate at a highly local level.<br>— We have held over 25 events and webinars on forecasting and planning. | — 2024 DFES to include input and insight from all 36 local authorities in our region.<br>— Continued schedule of events throughout the year to maximise opportunities to engage with and collaborate with our stakeholders.<br>— Expanded Regional Insights team to provide bandwidth and ensure maximum engagement with key regional net zero stakeholders. |
| Benefits | — Creating a platform for regional partnerships and collaboration to develop joint solutions to our region's challenges.<br>— Fostering relationships and establishing new possibilities for collaboration.<br>— Creating clear outward facing channels to encourage engagement and input. | — Broader and more interactive collaborative planning with stakeholders across our region.<br>— Cross vector approaches to solving the region's energy needs in the most efficient way. |

**We lead conferences, workshops and bilateral engagements to join up actions across our region. There are specific events to improve network planning data, particularly forecast load profiles, and partner with other whole system stakeholders, including other DNOs, energy suppliers, fuel suppliers, aggregators, town planners, highways agencies and others, to improve our understanding of mobile loads (primarily EVs). Our aim is to inform the DFES pathways to more fully reflect all vectors, and layer on the impacts of technological development in other sectors.**

The Regional Insights team is acting as a 'front door' to the business for our stakeholders to encourage a collaborative approach to developing net zero roadmaps and strategic regional projects. This includes providing one-to-one support for specific council-led net zero projects, such as large scale solar projects being developed by authorities including Wakefield District Council and City of York Council. Where local authority boundaries cross our license area boundaries, we are collaborating with National Grid Energy Distribution to ensure we are offering coordinated support for LAEP development.

## Whole system planning

The DFES 2024 engagement plan focuses on gathering Local Plan data on expected future developments through stakeholder engagement with our Regional Insights team. It is expected that the Regional Insights team will be able to gather and feed in this intelligence from every local authority area we cover. We will also be gathering intelligence on projects that will have a large influence on our network, including mass rollout of domestic-level LCTs (e.g. social housing decarbonisation programmes) and estate-wide decarbonisation (e.g. industrial cluster decarbonisation programmes). This intelligence will be used to check the assumptions made by the models in DFES with more granularity.

We will engage regularly with ESO and other network operators, in particular through the Future Energy Scenarios (FES) Networks Forum and DFES feedback loop, which ensures national and regional projections are aligned regularly and encompass a whole systems view into forecasting. Network decision-making policies will need to accommodate system balancing and constraint issues on both the transmission and distribution networks going foward. We plan to collaborate across the whole energy system to better understand the technical characteristics of different cross-vector storage options, and how that technical capability might best be used to address both long-term and short-term storage needs.

## Cross-vector engagement on regional energy planning

As we move along the pathway to decarbonisation, the future options narrow as the optimum solution emerges. We are committed to working closely with our gas counterparts and taking a multi-vector approach to engaging with our shared stakeholders collaboratively in order to find the optimal solution to our region's energy needs.

Our joint LAEP charter with Northern Gas Networks demonstrates our commitment to jointly engage with Local Authorities on local area energy plans. We also apply this principle beyond LAEPs, ensuring that electricity and gas representatives are both involved in all major regional engagements. Through this joined up engagement approach we establish a clear understanding of the region's energy needs, and develop efficient and economic whole system solutions. Central to this is the Regional Energy Strategic Modelling innovation project (RESM) - a whole systems modelling study exploring how all gas, water and power networks can work better together through strategic planning to support regional decision-making and constraint management of the electricity network.

## Collaborative innovation

We are supporting the Northern Gas Network led InTEGReL (Integrated Transport Electricity and Gas Research Laboratory) project in Gateshead. This is a test-bed facility which encourages innovative strategies and new technologies to be trialled for whole energy systems development and to find solutions to integrate electricity, gas and transport services. As part of InTEGReL, we will incorporate our MicroResilience project which aims to provide commercially-viable improvements to network resilience via microgrid deployment as power flows become increasingly dynamic on our network. The InTEGReL project will provide an opportunity for future-proofing our microgrid strategy, assessing the impact within the context of the whole energy system, and facilitate the roll out of our initial 2 micro grids by 2025.

Furthermore, we are anticipating a collaborative project with Cadent as plans progress for Scunthorpe Hydrogen Town. This project will explore the multi-vector impacts of the possible transition to hydrogen.

# Optimisation through flexibility services partnerships

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — Extensive engagement with potential flexibility services providers to educate and inform.<br>— Direct engagement with flexibility aggregators to understand how we can better work together.<br>— Collaboration through the ENA Open Networks programme to develop consistent approaches to flexibility. | — Continued engagement with potential flexibility service providers to develop the flexibility market in our region.<br>— Targeted collaboration with service providers, aggregators and OEM manufacturers to understand the behaviours and capabilities of different flexible loads.<br>— Deliver the Community DSO innovation project through collaboration with local communities and delivery partners. |
| Benefits | — Creating a flexibility market with liquidity and high participation, fulfilling future flexibility needs and encouraging competition.<br>— Developing flexibility services processes that meet the needs of potential providers. | — Creating further value from flexibility services in our region and maximising the use of existing assets.<br>— Communities empowered to manage and balance their own energy needs, reducing reliance on the grid. |

**The use of flexibility services on our network requires new, collaborative relationships between us and our energy community to identify and communicate our needs, and to find market solutions to those needs. A large focus of our System Flexibility team is engaging with the potential flexibility market in our region, to understand their aspirations and drivers, and find ways that we can develop our systems and processes collaboratively to drive participation in flexibility – realising the value of flexibility services.**

## Developing flexibility markets

Our System Flexibility team has carried out tailored and comprehensive market engagement. Over the past year we have delivered a programme of engagement tailored to our FSPs and flexibility market participants, with the objective to minimise barriers to full and effective market participation.

Our programme was tailored to maximise FSP participation in our tender rounds; first informing our stakeholders of our flexibility landscape at a high level, and then providing more focussed information as tenders approach. Flexibility engagement starts with the procurement statement, which outlines our plans and tender requirements at the very start of the year to provide customers with visibility of our requirements, and clarity on our plans. For example, following the announcement of our tender requirements in October, our team outlined in detail the participation process for our FSPs. A live demonstration and Q&A with representatives from Piclo ensured that barriers to participation were minimised.

Our System Forecasting team has grown to create more capacity to engage directly with both contracted and potential flexibility service providers, creating bandwidth to have more collaborative conversations about how we can develop our processes to maximise the value of flexibility for both us and FSPs.

In the future we will carry out collaborative studies to better understand the behaviour of flexible loads, engaging with potential providers of flexibility to do so. In particular we will focus on understanding how responsive different types of loads are, differentiating between loads with flexibility built in (e.g. hybrid heat pumps, domestic heat batteries) and loads with flexibility potential (e.g. EV charging). We plan to work with other networks, in particular the gas networks and transport networks, to identify interactions created between networks through flexibility, and how best the impacts of these interactions can be managed.

Peer-to-peer trading will be a key tool to manage flexibility across organisations and we will enable this by leading engagement with stakeholders, such as Ofgem, DESNZ, suppliers, customers and relevant trading platforms (e.g. Elexon) to address commercial and regulatory barriers.

## A standardised approach

Stakeholder engagement under the ENA's Open Networks group is key to delivering network options assessments in an open manner and with consistency amongst other network operators. We will continue to collaborate in the Open Network's Common Evaluation Methodology (CEM) working group and proactively contribute to assist in the improvement of the CEM tool, which provides transparency and standardisation between network operators for their decision-making to solve network needs, including flexibility procurement.

We will also cooperate closely with the ESO to ensure clear and transparent rules are in place to coordinate flexibility dispatch instructions when there are constraints on both the transmission and distribution network. Collaboration under the Open Network's Primacy working group will ensure a standardised decision-making framework is formed so that conflicts of interest over network needs are clearly defined. We aim to enhance the data exchange process with NGESO to increase visibility of week-ahead markets to optimise decision-making for flexibility dispatch across the whole system.

## Community DSO: Flexibility at consumer level

Our Community DSO innovation project is testing the potential of localised flexibility at the consumer level, with the aim of developing a new framework for integrating Smart Local Energy Systems - the creation of localised community-level flexibility services.

Community DSO involves close working relationships between us, community groups and project delivery partners. The project generates value for our participating customers by giving them broader agency and a clearer role in contributing to the energy transition. This reflects our belief in the importance of generating wider buy-in to the transition and driving the necessary customer-network collaboration which lies at the heart of a distributed energy future.

We believe that 'the community' will play a larger role in network operation as DSO progresses, and the insights drawn from this project will be crucial not only for our license area, but for the UK energy system as a whole. Our first trial is due to commence in September 2024.

# Whole system partnerships to accelerate transmission network access

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — Revised technical limits scheme established in collaboration with the whole industry.<br>— Revised offers issued to customers utilising new visibility and control solutions.<br>— Stalled or speculative projects removed from the queue through close working between us, ESO and customers. | — Working with the ESO and NGET to improve project progression processes.<br>— Developing and implementing dynamic queue management processes in collaboration with the broader industry. |
| Benefits | — Connection lead times reduced by 6.5 years on average.<br>— Greater levels of renewable generation enabled to connect to our network faster. | — >300MW expected to be released from the connections pipeline, allowing other connections projects to proceed. |

**New projects critical to net zero, such as renewable generation and battery storage, are currently facing delays of up to 15 years to connect to our distribution system due to reinforcement being required on the transmission system. Finding solutions with the other DNOs, TOs and ESO to overcome this transmission congestion is a significant focus within our Energy Systems directorate so that pathways to decarbonisation via connection of LCTs are not blocked.**

## Strategic Connections Group

Our involvement in the ENA Strategic Connections Group (SCG) provides us with opportunities to collaborate with the other network companies and policy makers (Ofgem and DESNZ).

We already have close working relationships with the ESO and National Grid Electricity Transmission and hold joint quarterly planning and operational meetings to discuss and plan responses to issues that occur at the boundary of our networks. This includes long-term planning and shorter-term operational issue. However, over the past year there has been an increased need for close collaboration across the transmission-distribution boundary as transmission congestion has impacted distribution connected projects.

Through the Strategic Connections Group we are collaborating closely with the transmission network owner and the ESO to develop solutions. We are implementing changes to the connections process, including recycling capacity from the queue for projects ready to proceed and using delegated technical limits and local queue management to promote projects in the pipeline that are able to make use of flexible access.

## Transparency over the connections process

We are hosting routine quarterly customer connections webinars alongside the transmission parties – system operator and transmission owner - to provide our stakeholders with clear and transparent updates on our approach as we implement solutions and develop new methods. At these webinars we are informing stakeholders of existing sources of digital information to help them while also seeking ideas for what other developments would be useful. This collaboration has led to improvements in 2023/24 with more information now available on our website as a result.

# Theme 3: Digitalisation enabling collaboration

**It is widely recognised in the energy sector that modern data management principles will underpin the move to a more flexible, net zero energy system. Enhanced data capture and analytical capabilities will lead to more efficient network decisions and assessments on the need for flexibility services in constrained areas. The anticipated penetration of more DER and LCTs, as well as the introduction of more flexibility services, instigates a need for additional system integration and the collection and efficient management of additional data.**


### Our approach to utilising digitalisation to enable collaboration

At the foundation of DSO functionality are enhancements in data and digitalisation which are outlined in our DSAP. We are investing significantly in LV monitoring, smart metering and analytics capabilities to increase visibility of network performance and understand load-related behaviour. Improvements in digital tools, coupled with more granular, accurate forecasting, will enable efficient and targeted investment in flexibility procurement and reinforcement upgrades, which are reflected in our Network Development Plan and Distribution Network Options Assessment reports. We are implementing new digital platforms and infrastructure to stimulate flexibility market development and perform optimal flexibility dispatch services through the integration of network management systems and real-time data exchange.

Highlights of new **digital tools** to support collaboration:

- Open Data Portal established and continually developing
- Local Authority Portal established to enable secure bilateral data sharing
- Inter-Control Centre Communications Protocol (ICCP) link with ESO in development
- Enterprise Active Network Management to allow efficient control of DER
- Flexibility market and dispatch platforms established
- Interim mass LCT assessment tool delivered, with enduring solution in development

# Data capture

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — LV monitoring deployment strategy established.<br>— 3,400 LV monitors installed on our ground mounted distribution substations.<br>— LV monitoring data platform established to store and analyse high volume data. | — Further deployment of monitors across our ground mounted transformer asset base.<br>— Deployment of monitors targeting highly utilised LV circuits.<br>— Open sharing of LV monitoring data on our Open Data Portal.<br>— Capture of Flexibility Market and operational data. |
| Benefits | — Targeted deployment of monitors to produce data of the greatest value for planning purposes.<br>— Granular data showing local and temporal utilisation of our network. | — Greater visibility of our network allowing us to make more informed planning decisions.<br>— Ability to understand the operation of flexibility on our network, informing nearer to real-time dispatch merit order. |

**To optimise network planning and operation, we are enhancing our level of data capture to increase the visibility of assets. By the end of RIIO-ED2, we plan to install an additional 10,000 LV monitors (creating a total of 12,700) and have 50% of our ground mounted substation network directly monitored, giving us granular visibility of the distribution network for 80% of our customers. As we transition to a decentralised system with locally connected renewable generation and rapidly increasing load from LCTs, monitoring of our Low Voltage network will become increasingly important to provide us the visibility needed to make more timely and efficient investment decisions.**

## Data capture strategy

We have developed a deployment strategy for LV monitoring installations to maximise the value of data captured. The strategy is informed by asset utilisation, LCT penetration including known stakeholder plans and projects, and number of customers covered by our monitoring equipment.

We have implemented a new cloud-based data analytics platform to significantly enhance our data analytics capability and ability to deal with the increasing volumes of data associated with LV monitoring as we expand our data capture

Furthermore, we are capturing and leveraging smart meter data alongside our LV monitoring data to enable analysis of individual, or aggregated, customer profiles to estimate demand on LV feeders, and distribution substations that are not monitored.

## Benefits of increased data capture

Our data capture initiative will deliver many benefits, such as:

— increased network capacity due to efficient investment decisions and use of assets,

— network data for sharing and creation of flexibility markets, and

— improved condition of network assets and reduced network losses.

# Improving analytics capabilities

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — Bottom-up revision to Distribution Future Energy Scenarios (DFES) forecasting approach.<br>— Recruitment of Data Specialists into our System Forecasting team.<br>— Established our cloud-based data platform for high volume analytics processes. | — Integration of Artificial Forecasting innovation project learnings into BAU to establish closer to real-time forecasting.<br>— Replacement of all legacy network design tools with more advanced software, enabling improvements in analysis.<br>— Continued enhancement of our data platform to enable greater analysis. |
| Benefits | — Enhanced core customer needs forecasts through our DFES leading to network planning decisions rooted in more sound insight.<br>— Increased capability in systems and people to enable analytics of complex datasets. | — Closer to real-time forecasting allowing the use of dispatchable flexibility service products on our network.<br>— Enhanced design capabilities leading to internal efficiencies and allowing greater optioneering of our network. |

**Data and information will form the backbone of many collaboration approaches, and as we collect and share greater amounts of data we must also build the capability to analyse that data. This means improving capabilities of systems, people and processes in order to maximise the value of data and gain the greatest insight.**

## Our data specialists

We have recruited a team of data specialists to work alongside our System Forecasting Engineers. These specialists are recruited from a range of backgrounds with a focus on data and analytics skills rather than specific electrical engineering knowledge. Through working together with our System Forecasting Engineers we leverage domain specific knowledge with highly specific data capabilities in order to deliver the greatest insight from our data.

## Upgrading data analytics tools

We are establishing more advanced systems and tools for data and analytics including our cloud-based data platform. This allows complex analysis to be carried out on high volumes of data in a short amount of time. This facility, alongside the people capabilities we are building, allows us to carry out much more complex analysis of our data leading to more insight and consequently better decision making.

We are delivering our Artificial Forecasting innovation project, alongside UKPN, to develop AI-based approaches to increase the frequency of load forecasting. Our plan is to increase the frequency of data we receive on our LV network from a monthly basis to weekly, and eventually a daily basis. This will allow us to make more accurate, time-sensitive forecasts of load, and thus more informed operational decisions, such as flexibility dispatch, within shorter timescales.

We will improve our planning and operational forecasting capabilities by investing in systems and people to refine our load models and integrate LV, HV, EHV and 132kV network data as well as data from third parties such as local authorities and central government (e.g. demographic data). This will support medium and long term planning and improve the production of Demand Load Estimates (DLEs) and Distribution Future Energy Scenarios, as well as real-time and short term operational decision making by control engineers. Key to this is the replacement of our legacy design tools which will be completed within 2024.

# Digital flexibility platform and system optimisation

| | Progress to date | Future development |
|---|---|---|
| Deliverables | — Flexible Power service dispatch platform implemented and utilised to manage flexibility services contract dispatch.<br>— Piclo Flex market platform established to advertise our flexibility services needs and allow DERs to register their assets with us. | — Enterprise Active Network Management to dynamically manage DERs with flexible connections.<br>— Establish an Inter-control Center Communications Protocol (ICCP) link with the ESO.<br>— End to end integration of flexibility services infrastructure from procurement to dispatch. |
| Benefits | — Convenient efficient dispatch infrastructure, minimising inputs from us and flexibility service providers.<br>— Digitalised processes for registering assets and tendering for flexibility services leading to efficient contracting. | — Enhanced ability to control customer assets connected to our network to enable optimised operation.<br>— Ability to coordinate dispatch of flexibility services with the ESO.<br>— Convenient single digital solution for flexibility service providers to engage through. |

**As flexibility services, flexible connections and network flexibility are increasingly utilised to optimise the utilisation of our network, we are relying on digital infrastructure to coordinate these services between us, Distributed Energy Resources (DERs) and the Electricity System Operator (ESO).**

## Systems for data integration

We are implementing new infrastructure for the effective deployment and operation of flexibility services across transmission and distribution networks. To facilitate a wider effective dispatch of flexibility services, we will deliver tighter integration between DERs, Flexibility Service Providers (FSPs) and ESO, as well as an agreed operational framework across the industry. Integration and enhnanced digital architecture allows the dispatching of DER and FSPs to address local issues, but also enable the ESO to procure services for wider system issues (e.g. ancillary services) through the DSO advanced voltage optimisation flexibility service.

We are deploying an Inter-control Centre Communications Protocol (ICCP) link which will enable real-time data exchange between DSO and ESO, and manage conflicts of interests, allowing customers to stack revenue whilst meeting the transmission and distribution system technical requirements. Such protocol standardises the data exchange between network management systems from different vendors. We plan to make data accessible by formatting via the Common Information Model (CIM) which will allow ESO and IDNOs to incorporate our data into their systems.

## Whole system balancing

Whole system benefits will be provided through voltage optimisation, whereby adjusting the voltage received by customers will yield demand reduction. With the implementation of smart meters, providing real-time monitoring, and smart grid enablers to perform active voltage management, we will deliver the DSO voltage optimisation flexibility service which will leverage the capability of network assets to provide voltage and frequency response services to the ESO. This will cover both active power and reactive power services; the control of active power can provide a frequency service to the ESO, and the control of reactive power can provide a voltage service to the ESO.

## Key channels into Northern Powergrid

Our customers and stakeholders must have clear points of contact within Northern Powergrid, now more than ever, in order to ensure close collaborative working. The following table provides contact details and engagement channels for key functions across the business:

| | |
|---|---|
| The **Open Data Portal** provides access to a wide range of asset, network and planning data. | northernpowergrid.opendatasoft.com |
| Our **open data team** are always keen to hear from our stakeholders with requests for new data or suggestions – get in touch via email or via the 'contact us' page within the Open Data Portal. | opendata@northernpowergrid.com |
| The **Regional Insights team** has been established specifically to support stakeholders with regional net zero planning – whether you work for a local authority, Housing Association, or major energy user we'll be happy to speak with you. | northernpowergrid.com/local-area-energy-systems<br>laep@northernpowergrid.com |
| **Flexibility Services** will be a key tool to collaboratively develop our network efficiently. Find out more on our website, the Piclo Flex market platform or email the team. | northernpowergrid.com/flexibility-services<br>picloflex.com/dashboard<br>flexibility@northernpowergrid.com |
| If you are looking to make a **new connection** to our network there are a number of options to learn more.<br>There is a wealth of information on our **get connected website** including contact details for our Connection Engineering teams; and<br>You can book onto one of our **connections surgeries** to discuss your requirements and see what options you have; or<br>You can **ring** our dedicated connections enquiries line or **email** us.<br>We have a dedicated team assisting with **transmission network access**. | northernpowergrid.com/get-connected<br>northernpowergrid.com/contact-our-connections-engineers<br>northernpowergrid.com/customer-events-and-surgeries<br>CONNECTIONS ENQUIRIES<br>0800 011 3433 (8am-8pm Mon-Fri, 9am-5pm Sat)<br>getconnected@northernpowergrid.com<br>dsotransmissioninterface@northernpowergrid.com |
| If you would just like to learn more and help shape our service to you, we run a continual engagement programme of events. Find out more on our 'engage' website, or get in touch with our stakeholder relations team. | engage.northernpowergrid.com<br>stakeholder.relations@northernpowergrid.com |

# Moving forwards together

**Our Collaboration Plan outlines our commitment to working cohesively with all our stakeholders and customers. We believe that cooperation and collaborative network planning is at the heart of an effective transition to net zero. Therefore, we highly encourage you to engage with us, such as through our Open Data Portal, in-person events, webinars or via our contact details above to discuss how we can collaborate to achieve our joint aim of net zero. Your feedback and opinions are highly valuable and will play a critical role in the reshaping and development of our business plans. We recognise that the inclusion of stakeholder voice is imperative to the improvement of our network planning and investment decision making, and to achieve a decarbonised grid in the most efficient and economical way for everyone involved.**

# Annex

Annex 1

# Collaboration Plan Deliverables

NORTHERN POWERGRID

# Collaboration Plan Deliverables

NB: some deliverables from our 4 Strategy documents have been excluded if not directly relevant to collaboration.

| STRATEGY | OUTCOME | DELIVERABLE | | MEASURE OF IMPACT/ SUCCESS | APPLICABLE TO | | | Deliverable timeline - RIIO-ED2 period | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DATA SHARING | COLLABORATIVE PARTNERSHIPS | DIGITAL TOOLS | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| Digitalisation Strategy & Action Plan | DSAP 1 - The journey to Open Data. | 1.3 | Implement data integration platform using standard data formats (i.e. CIM) and API driven to implement a hybrid solution of on-premise and cloud capabilities to integrate data across our own landscape and provide access to data with ease from outside our organisation. | — data integrations<br>— asset data integrations<br>— cloud data platform (inc. Open Data)<br>— cloud data platform) | ✓ | | ✓ | ◇ | ○ | | | → |
| | | 1.4 | Build integrations between existing systems (e.g. APIs) where integration of data is required to provide Open Data services. | — data cleanse<br>— cloud analytics platform | ✓ | | ✓ | ○ | | | | → |
| | | 1.6 | Asset data surfacing and integration – connecting eAM spatial data to the new integration platforms to surface asset data on the data platform for open sharing of this information. | — asset data platform | ✓ | | ✓ | ◇ | | | | → |
| | DSAP 2 - Network management capability to enable net zero. | 2.1/2.2 | Enhanced management solution for energy resources connected to our distribution network (DERMS for DSO). | — network operations forecasting & analytics<br>— flexibility customer platform<br>— connections CRM | | | ✓ | ◇ | | ○ | | → |
| | | 2.3 | Expand current DMS capability to Advanced DMS (ADMS) capabilities within the control room to enable DSO roles to be fulfilled. | — DERMS implementation | | | ✓ | ◇ | | | ● | |
| | | 2.9 | Build an ICCP link to improve connection to the ESO. | — ICCP link implementation<br>— data exchange with ESO" | ✓ | | ✓ | ◇ | | ● | | |
| | | 2.10 | Expand technology capability for flexibility customer interaction (information provision and engagement platform/service management – settlement and reconciliation). | — Flexibility dispatch services | | | ✓ | ◇ | | | | → |
| | DSAP 8 - Enabling customers to self-serve. | 8.13/8.14 | Deploy automation and self-service for all connections quotations (AutoDesign). | — AutoDesign user experience<br>— easier, faster connections service | ✓ | | ✓ | ◇ | | | | → |
| | | 8.7 | Open Data Portal - integrate website with cloud analytics to provide stakeholder easy access to Open Data and insights. | — number of users on our Open Data Portal<br>— stakeholder feedback on user experience | ✓ | | ✓ | ○ | | | | → |
| | DSAP 9 - Advanced analytics. | 9.9 | Define technical architecture for system operations and network planning (modelling/development of a digital twin). | — enhanced network modelling | ✓ | | ✓ | ◇ | | ○ | | → |
| DSO Strategy | DSO 1 - Data capture. | 1.1 | Build on existing information management capabilities to expand network data and integrate datasets delivering capabilities by the end of 2025-26. Capture more detailed data more regularly, purchase data to enhance network visibility, and cleanse, structure and store data more effectively. | | ✓ | | ✓ | ◇ | | | | → |
| | | 1.2 | Work with stakeholders to improve information exchange and understand flexibility service requirements. | | ✓ | ✓ | | ◇ | | | | → |
| | | 1.3 | Deliver targeted installation of LV load monitoring equipment to significantly enhance network visibility. | — % ground mounted substation network directly mointored (50%)<br>— number LV load monitors installed (12,700) | | | ✓ | ○ | | | | ● |
| | | 1.4 | Develop our internal capability to continuously monitor developments in the market for flexibility services and keep track of the anticipated growth in the volume of market data available during the period. | | ✓ | ✓ | ✓ | ◇ | | | | → |

**KEY:** ◇ ACTION STARTS ····· FORECAST TIMESCALE FOR COMPLETION ● DELIVERABLE COMPLETED ○ INTERIM DELIVERABLE COMPLETED → CONTINUE TO ED3

# Collaboration Plan Deliverables

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| STRATEGY | OUTCOME | DELIVERABLE | | MEASURE OF IMPACT/ SUCCESS | APPLICABLE TO | | | Deliverable timeline - RIIO-ED2 period | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DATA SHARING | COLLABORATIVE PARTNERSHIPS | DIGITAL TOOLS | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| DSO Strategy | DSO 2 - Analytics capabilities. | 2.1 | Use analytics and machine learning to emulate high quality and granular time-series data sets for LV networks. | | | | ✓ | ◇ | | | | → |
| | | 2.2 | Utilise analytics engines and machine learning to enhance and verify time-series data sets for HV and EHV networks. | | | | ✓ | ◇ | | | | → |
| | | 2.3 | Refine power flow models, and supplement forecasting and scenario modelling (such as DFES), using analytics engines to predict future power flows under different scenarios and therefore improving network planning and gaining operational insights. | — standardised DFES inputs by 2024<br>— accurate forecasting of network needs: reconciliation of outturn vs forecast (report annually) | ✓ | ✓ | ✓ | ○ | | | | → |
| | | 2.4 | Create a static strategic planning model of the network which integrates historical and real-time data from various OT/IT systems delivering a complete set of capabilities by the end of 2025-26. | — Historical operational and outage planning data ESO/DSO (>90% shared)<br>— Planning and operational network forecasting stakeholder feedback survey and report (annually) | ✓ | | ✓ | ◇ | | ● | | |
| | | 2.5 | Improve the format and consistency of our forecasting information, in collaboration with other DNOs, and publish this via our network development plans, and expanded LTDS we share with stakeholders. | | ✓ | ✓ | | ◇ | | | | → |
| | DSO 3 - Open data and joint planning. | 3.1 | Build enhanced functionality on top of our open data platform to unlock additional customer benefits. This will include a set of free analytical tools to help processing data and enhance self-service delivering capabilities by the end of 2026-27 CVP | — availability of energy system data products (+70%)<br>— New network asset data self-service (by 2026/27)<br>— Network asset data stakeholder feedback survey and report (annually) | ✓ | | ✓ | ○ | | | ● | |
| | | 3.2 | Provide assistance and expertise to support the design of LAEPs in collaboration with local authorities and the wider energy sector, utilising knowledge of the network, loading projections, customer activity and the wider environment to provide feedback, feeding insights into our own plans. | — number of LAEP engagements reported (annually) | ✓ | ✓ | | ◇ | ○ | ○ | ○ | → |
| | | 3.3 | We will provide opportunities for stakeholders, via a stakeholder panel, to comment on and challenge our major investment decisions, including both traditional reinforcement and flexibility. We will also ensure that we publish the results and underlying assumptions of CBAs and that our flexibility services development and procurement process is transparent and participatory. | | ✓ | ✓ | | ◇ | | | | → |
| | | 3.4 | We will implement the Common Information Model (CIM) identified through the ENA Open Networks programme as the preferred industry standard for data exchange with the ESO and other DNOs for network planning purposes. | | ✓ | | | ◇ | | ● | | |
| | DSO 4 - System operation & optimisation. | 4.1 | Create a customer flexibility system with network operation processes that enables us to automatically dispatch flexibility services by integrating systems (such as Power on Fusion) with our flexibility platform (Flexible Power Platform). Planned to deliver capabilities by the end of 2025-26. | — error corrections issued for dispatch (<10%)<br>— late issuance of dispatch data (<10%) | | | ✓ | ○ | | ● | | |
| | | 4.2 | Enhance our ANM coordination and control to manage thermal, voltage and fault level constraints using a central and/or local management system to control flexible customer assets. Planned to deliver capabilities by the end of 2025-26. | — ANM flexibility capacity connected to our network (reported annually)<br>— number of connections with ANM agreements (reported annually) | | | ✓ | ◇ | | ● | | |

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# Collaboration Plan Deliverables

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| STRATEGY | OUTCOME | | DELIVERABLE | MEASURE OF IMPACT/ SUCCESS | APPLICABLE TO | | | Deliverable timeline - RIIO-ED2 period | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DATA SHARING | COLLABORATIVE PARTNERSHIPS | DIGITAL TOOLS | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| DSO Strategy | DSO 4 - System operation & optimisation. | 4.4 | Collaborate with the wider energy industry (via the ENA) to establish flexibility processes, communication and architecture to avoid conflicting operations. | — operational data exchange ESO-DSO (>90% system up-time)<br>— constrained data exchange ESO-DSO (>90% system up-time)<br>— common flexibility dispatch principles by 2025/26 | ✓ | | ✓ | ◇ | | ○ | | ● |
| | | 4.5 | Upskill and recruit engineers to use whole energy system thinking to provide increasingly complex solutions to address decarbonisation. | | | ✓ | | ◇ | | | | ➡ |
| | | 4.6 | Offer flexibility services to the ESO to support system-wide decarbonisation. | | | | ✓ | ◇ | | ○ | | ● |
| | DSO 5 - Customer flexibility. | 5.1 | Collaborate with the wider energy industry (via the ENA) to facilitate non-DSO services and network access rights. | — network access amendments (report annually)<br>— re-adjust of existing connections agreements (report annually) | | ✓ | | ○ | | | | ➡ |
| | | 5.2 | Develop, cost and procure flexibility products that are fit for purpose, taking a 'flexibility-first' approach. | — EHV substation areas in flexibility market evaluations (80 by end of ED2 period)<br>— common registration process by 2024/25 | | | ✓ | ○ | ○ | | | ● |
| | | 5.3 | Develop a flexibility services communication, engagement and trading platform that allows third parties such as flexibility providers and aggregators to keep track of flexibility services related information such as service requirements, procurement methods, contracts and outage visibility. | — flexibility provider registration acceptance time (< 30 days)<br>— procurement events response time (< 3 months)<br>— local flexibility stakeholder engagements (120)<br>— efficient dispatch of flexibility audit (report annually)<br>— procurement stakeholder feedback survey and report (annually) | ✓ | ✓ | ✓ | ○ | | | | ● |
| | | 5.4 | Create a system to automatically validate flexibility service provision, calculate remuneration and issue relevant invoices or compensation. | | | | ✓ | ◇ | ● | | | |
| | | 5.5 | Create a team of knowledgeable Flexibility Relationship Managers to actively engage with customers (such as service providers, aggregators etc.) to facilitate and support flexibility market development. | — dispatch stakeholder feedback survey and report (annually) | | ✓ | | ○ | | | | ➡ |
| Connections | CN 1 - Help our small works customers to get connected quickly by providing more selfservice options, greater support and more flexibility over delivery. | 1.1 | Develop our digital platforms for customers who want to self-serve and provide enhanced upfront support for those who prefer to talk to us before making an application. | — BMCS connections<br>— average connections lead time<br>— time to quote LVSSA<br>— time to quote LVSSB<br>— time to deliver LVSSB<br>— time to deliver LVSSB<br>— connections guaranteed standards % compliance | ✓ | ✓ | ✓ | ◇ | | | | ➡ |
| | | 1.2 | Provide a free advice and application checking service for small works customers and community energy groups, including for low carbon technologies (LCTs) and generation. | | | ✓ | | ◇ | | | | ● |
| | CN 2 - Facilitate the mass uptake of LCTs, flexible connections and network flexibility to support the drive to net zero. | 2.1 | Develop AutoDesign functionality to enable customers to self-serve and generate quotations for LV demand connections, load increases for existing LV connections and budget estimates for new LV generation connections. Go-live planned for 2025/26. | — major connections satisfaction (overall)<br>— major connections satisfaction - quotations<br>— major connections satisfaction - delivery | ✓ | | ✓ | ◇ | | ● | | |
| | | 2.2 | Utilise AutoDesign technology to develop an LV network availability heat map that utilises LV monitoring and smart meter data to enable real-time system planning. Go-live planned for 2024/25. | | ✓ | | ✓ | ◇ | ● | | | |

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| STRATEGY | OUTCOME | | DELIVERABLE | MEASURE OF IMPACT/ SUCCESS | APPLICABLE TO | | | Deliverable timeline - RIIO-ED2 period | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DATA SHARING | COLLABORATIVE PARTNERSHIPS | DIGITAL TOOLS | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| Connections | CN 3 - Empower our customers to make more informed decisions about how and where to connect by expanding the scope of network information. | 3.1 | Make improvements to our HV and EHV network capacity heat maps to include the provision of an integrated LTDS and information that can forecast changes in capacity availability. | — HV and EHV heat map upgrades - Go-live | ✓ | | ✓ | ◇ | ● | | | |
| | CN 4 - Continue to facilitate fair and open competition so that our customers have a choice in who delivers their connection. | 4.1 | Work with ICPs and IDNOs to further minimise input services and extend the scope of contestable works. | — Introduction of customer satisfaction survey for IDNO and ICP customers | | ✓ | | ◇ | | | | ➡ |
| | | 4.2 | Publish guide prices and monthly performance metrics as well as providing clear cost breakdowns in connections quotations. | | ✓ | | | ○ | ○ | ○ | ○ | ● |
| | | 4.3 | Develop a bespoke AutoDesign platform for ICPs and IDNOs with non-contestable costs. Go-live planned for 2024/25. | | ✓ | | ✓ | ◇ | ● | | | |
| | CN 5 - Deliver an efficient connections service for all our customers, providing more technical advice to customers on smarter and more flexible solutions. | 5.1 | Provide an enhanced 'ask the expert' technical advice service. Go-live planned for 2023/24. | — connections guaranteed standards % compliance - major works<br>— % of major connections appointments met | | ✓ | | ● | | | | |
| | | 5.2 | Up-skill our LV/HV design engineers to facilitate better and more frequent discussions with customers on flexible connections at EHV, HV and LV. | | | ✓ | | ◇ | | | | ➡ |
| | | 5.3 | For EHV connections, where a flexible solution could avoid the need for additional network reinforcement, we will have a detailed discussion with the customer and provide them with the information they need to make an informed choice on the options available. | | | ✓ | | ◇ | | | | ● |
| Whole Systems Strategy | WS 1 - We will remove barriers for customers to use their equipment to support the whole energy system. | 1.1 | We will work with relevant stakeholders to understand the potential for inter-seasonal storage on the system, as well as identifying what else we need to do to facilitate and enable this future market. | — innovation project findings published (by March 2028) | | ✓ | | ◇ | | | | ● |
| | | 1.2 | We will set up an internal database and take an active role in matching connection parties that could have complementary energy needs, helping realise synergies in connection cost and speed. | — matchmaking scheme live (2025-26) | | ✓ | ✓ | ◇ | | ● | | |
| | | 1.3 | We will lead work engaging with Ofgem, BEIS, suppliers, customers and relevant trading platforms to identify any network-specific barriers to peer-to-peer trading, and options for solutions. In particular we will identify the information required by market participants to ensure safe network operation. | — innovation project findings published (by March 2028) | ✓ | ✓ | | ◇ | | | | ● |
| | | 1.4 | We will explore opportunities to use our existing ANM system to allow customers to provide services to third parties. In particular, the ANM system could potentially be used to allow customers to provide balancing services, by allowing aggregators or the ESO to call off flexibility using these systems. | — number of customers providing service (>10) | ✓ | ✓ | ✓ | ○ | | | | ● |
| | | 2.1 | We will lead annual workshops and bilateral engagement to improve network planning data – particularly forecast load profiles. The aim will be to improve the DFES planning scenarios, to more fully reflect decarbonisation pathways across more vectors, and layer on the impacts of technological development in other sectors. | — workshops held (annual) | ✓ | ✓ | | ○ | ○ | ○ | ○ | ● |
| | WS 2 - We will ensure our customers' future needs are met through cross-sector and cross-vector planning. | 2.2 | We will partner with other whole systems stakeholders, including other DNOs, energy suppliers, fuel suppliers, aggregators, town planners, highways agencies and others, to improve our understanding of mobile loads (primarily EVs). For example, we will explore what the key drivers of mobile loads are, how they are likely to react to certain triggers, and what this means for the range of potential load profiles. This improved understanding will then feed into more sophisticated modelling and network planning. | — new network planning tool implemented (2025-26) | | ✓ | | ◇ | | ● | | |
| | | 2.3 | We will undertake an innovation project to understand how technological changes and consumer behaviour is likely to impact seasonal loads in the future. This will allow us to add to today's existing telemetry information, allowing us to provide more accurate and granular load forecasts, enabling effective planning and investment in inter-seasonal storage. | — innovation project findings published (by March 2028) | ✓ | ✓ | | ◇ | | | | ● |

**KEY:** ◇ ACTION STARTS ····· FORECAST TIMESCALE FOR COMPLETION ● DELIVERABLE COMPLETED ○ INTERIM DELIVERABLE COMPLETED ➡ CONTINUE TO ED3

# Collaboration Plan Deliverables

NB: some deliverables from our 4 Strategy documents have been excluded if not directly relevant to collaboration.

| STRATEGY | OUTCOME | DELIVERABLE | | MEASURE OF IMPACT/ SUCCESS | APPLICABLE TO | | | Deliverable timeline - RIIO-ED2 period | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DATA SHARING | COLLABORATIVE PARTNERSHIPS | DIGITAL TOOLS | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| Whole Systems Strategy | WS 2 - We will ensure our customers' future needs are met through cross-sector and cross-vector planning. | 2.4 | Building on previous innovations, we will collaborate with NGN and other partners to better understand the technical characteristics of different cross-vector storage options, and how that technical capability might best be used to address both long-term and short-term storage needs. | number of cross-vector innovation projects over the period (>2) | | ✓ | | ○ | | | | ● |
| | | 2.5 | We will carry out work to better understand the commercial case for microgrid technology. For our early microgrid trials, we will partner with individual generation/ storage providers that are willing to connect to the microgrids. We will work closely with them to understand the commercial barriers and challenges they face. We will also carry out work to help inform the commercial decisions taken by generation/storage providers, such as how frequently microgrids are likely to operate autonomously. | commercial requirements identified and initial solutions in place (2025-26) | | ✓ | | ◇ | | | ● | |
| | | 2.6 | We will carry out a study to better understand the behaviour of flexible loads, engaging with potential providers of flexibility to do so. In particular we will focus on understanding how responsive different types of loads are, differentiating between loads with flexibility built in (e.g. hybrid heat pumps, domestic heat batteries) and loads with flexibility potential (e.g. EV charging). | innovation project findings published (by March 2028) | | ✓ | | ◇ | | | | | ● |
| | | 2.7 | We will work with other networks, in particular the gas networks and transport networks, to identify interactions created between networks through flexibility, and how best the impacts of these interactions can be managed. | innovation project findings published (by March 2028) | | ✓ | | ◇ | | | | ● |
| | | 2.8 | We will recruit a team of LAEP advisors who will provide useful input and feedback to local authorities on their plans using knowledge of the network, customers and the wider environment. These advisors will also support our network planning by generating better and more comprehensive local insights. To ensure a requisite level of granularity and local knowledge, we will employ one advisor in each of our six operations regions. | number of LAEP engagements reported (annually) | ✓ | ✓ | | ○ | ○ | ○ | ○ | ● |
| | WS 3 - We will develop the blueprint for the next generation network by rolling out proven innovation. | 3.1 | Roll-out of microgrid technology to enhance system resilience, particularly for remote customers. | number of microgrids rolled out on LV networks (30) | | ✓ | | ○ | | | | ● |
| | | 3.2 | Building on our Boston Spa Energy Efficiency Trial (BEET) project, in the 2015-23 period, which is currently seeking to trial voltage optimisation technology at a larger scale at three primary substations; we will seek to roll this out across the network, should this project prove successful. Around 80% of the network is expected to be appropriate for this approach, and 30% of the total LV customer base will be done during the 2023-28 period. This project will deliver whole system benefits by reducing customers' energy usage. | percentage of LV customers benefitting from voltage optimisation (30%) | | | ✓ | ◇ | | | | ● |
| | | 3.3 | We will carry out an innovation project to identify and address regulatory and market barriers to microgrid rollout. We will partner with other DSOs, policy makers and relevant third parties. | regulatory barriers identified and initial solutions in place (2025-26) | | ✓ | | ◇ | | ● | | |
| | | 3.4 | During the 2023-28 period we will work with the ESO to understand how we can best deliver value through the lessons learnt from CLASS (Customer Load Active System Services, an ENW innovation that uses voltage management to reduce electricity consumption at peak times). We will seek to provide this form of load reduction as an ancillary service to the ESO if we establish that it will deliver value. | regulatory barriers identified and initial solutions in place (2025-26) | | | ✓ | ○ | | | | ● |
| | WS 4 - We will exchange knowledge with those specifying future low carbon technology (LCT) and low carbon use cases. | 4.1 | We will collaborate with designers and manufacturers of industrial and commercial equipment, and their trade bodies. We will provide input on how equipment can be designed for optimal performance of the equipment itself, and our network. Our aim is to ensure that standards for both future equipment, and our network infrastructure, are specified for optimised performance and costs. | number of manufacturer stakeholders engaged (>15) | | ✓ | | ◇ | | | | ● |
| | | 4.2 | As above, we will collaborate with designers and manufacturers of equipment, and their trade bodies – however here the focus is on domestic customers' equipment in particular to improve energy efficiency. | number of manufacturers engaged (>15) | | ✓ | | ◇ | | | | ● |

**KEY:** ◇ ACTION STARTS ····· FORECAST TIMESCALE FOR COMPLETION ● DELIVERABLE COMPLETED ○ INTERIM DELIVERABLE COMPLETED ➡ CONTINUE TO ED3

Annex 2

# Engagement Log

NORTHERN POWERGRID

| Unique ID | Engagement format (e.g. bilateral meeting, event) | Collaborating licensees and other stakeholders | Description of the coordination/ cooperation activity | Status | Coordination activity initiation date | Stakeholder feedback | NPg action required |
|---|---|---|---|---|---|---|---|
| CP-1 | DSO Quarterly Forum | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | Virtual event to update our stakeholders on latest developments in DSO and obtain stakeholder feedback on our performance | Completed | Jul-23 | Interest in flexibility services and an appetite for more information | Generate more awareness and guidance on how to participate in flexibility tenders |
| CP-2 | DSO Quarterly Forum | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | Virtual event to update our stakeholders on latest developments in DSO and obtain stakeholder feedback on our performance | Completed | Jul-23 | Wanting to know if we are pursuing options for stackability regarding flex services | Seek potential for this with other network operators |
| SVI-1 | NPg Stakeholder Panel - Open Data consultation | senior leaders across multiple stakeholder groups wanting to collaborate with NPg | Keep stakeholders informed on NPg activity and understand their changing needs and expectations - covered our Open Data journey & introduced our Open Data Portal | Completed | Jul-23 | Request for a deep dive on how to navigate our Open Data Portal | Carry out webinar / event to educate stakeholder on how to use our Open Data Portal |
| CP-3 | Bilateral meeting with West Yorkshire Mayor | West Yorkshire Mayor | Mayor requested the meeting to talk about power blips impacting industrial customers, decarbonisation projects and transmission network access | Completed | Jul-23 | Need to continue to explain clearly for CAs and LAs how we are helping, what the nature of the grid congestion problem is and how these issues will be managed | Carry out engagement wit stakeholder to spread awareness of activity to reduce congestion in the transmission system connections queue |
| CP-4 | Transmission System Congestion webinar with NGET and the ESO | Any/all stakeholders affected by congestion in transmission system connections queue | Providing transparency on our collective approach to address congestion issues on the transmission network and facilitate new connections in our | Completed | Jul-23 | Stakeholders keen to see reduced delays for getting connections completed | Engaging in ENA Strategic Connections Group to implement queue management changes |
| CP-5 | Bilateral engagement | Piclo Flex | Developing a data sharing approach to inform stakeholders of flexibility tenders | Completed | Aug-23 | - | - |
| CP-6 | Bilateral meeting | Tees Valley Combined Authority | Discussion to understand the plans for the Tees Valley area initiating discussion around collecting intelligence | Completed | Aug-23 | Provide an easy way to share data | Implement Local Authority Portal |
| CP-7 | NPg online event - Transmission Distribution Technical Delegated Limits | Stakeholders involved in connections process | Informing stakeholders of change to connections queue management process, offering connections to certain projects earlier | Completed | Sep-23 | Customers would like more information on application eligibility | Provide clear and accessible information on application eligibility |
| SVI-2 | NPg online event - Transmission Distribution Technical Delegated Limits | Stakeholders involved in connections process | Informing stakeholders of change to connections queue management process, offering connections to certain projects earlier | Completed | Sep-23 | Attendees voiced a need for half-hourly data for GSPs | Communicate this data to customers via Open Data Portal |
| CP-8 | Oxford Energy Innovation Forum | The ENA brought networks and innovators together to run the first Energy Innovation Forum. | Partnering with SSEN to explore Project LEO; present on Community DSO | Completed | Sep-23 | DNOs shared lessons so far on flexibility services and disseminated information on impacts of innovations projects | Progress Community DSO project towards tender stage |
| CP-9 | NPg Regional Decarbonisation Conference | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | In-person event to update our stakeholders on latest developments in DSO and obtain stakeholder feedback on our performance | Completed | Sep-23 | Interest raised in the idea of more online self-serve opportunities for connections at other voltage | Allow budget estimates for HV connections via AutoDesign |
| CP-10 | NPg Regional Decarbonisation Conference | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | In-person event to update our stakeholders on latest developments in DSO and obtain stakeholder feedback on our performance | Completed | Sep-23 | Questions on improved processes for LCT applications for Local Authorities | Provide info and tools to assist in mass LCT installation |
| CP-11 | Bilateral engagement | York & North York LEP | Understand needs & requirements for Local Area Energy Plan | Completed | Sep-23 | - | - |
| SVI-3 | Open Innovations Open Data Showcase | All stakeholders interested in DSO & connecting to our network | Presenting on importance of data sharing in our net zero journey and improvements to Open Data Portal | Completed | Sep-23 | Many encouraged us to share more open data recognising the opportunities that standardised open data can offer | Add more products to Open Data Portal |
| CP-12 | Meeting with local authorities in Humber & Tees Valley region | Darlington, East Riding, Hartlepool, Hull, North Lincolnshire, North East Lincolnshire, Stockton, Middlesborough and Redcar & Cleveland | Collection local intelligence on latest infrastructure & LCT developments to enhance DFES | Ongoing | Sep-23 | Local authorities onboard with project and willing to cooperate | NPg to set up individual meetings with local authorities |
| CP-13 | North East & Yorkshire Net Zero summit | stakeholders across whole energy system, including Energy Systems Catapult, NGN & stakeholders from local authorities | Informing stakeholders of LAEP journey | Completed | Oct-23 | Stakeholders found it useful to understand more about what Northern Powergrid do around Local Area Energy Plans | Increase engagement with local authorities to educate on how NPg can assist Local Area Energy Plan process |
| CP-14 | Flexibility webinar | stakeholders interested in providing flexibility services | Launching new market platform, Piclo Flex, to stakeholders - demonstration of how potential FSPs can participate in flex tenders | Completed | Oct-23 | stakeholders found the webinar very useful and wanted readily available access to this information | Make recording of webinar readily available for stakeholders |
| CP-15 | York City's Local Area Planning Hackathon | local authorities to understand LAEP journey | detailed presentations of LAEP implementation | Completed | Oct-23 | Stakeholders found it useful to understand more about what Northern Powergrid do around Local Area Energy Plans | Increase engagement with local authorities to educate on how NPg can assist Local Area Energy Plan process |
| CP-16 | National Grid Electricity Transmission (NGET) Pathway to Net Zero Stakeholder (Hybrid) Workshop | NGED, NGET, ESO & NPg in attendance | Showcasing whole systems collaborative approach | Completed | Oct-23 | stakeholders voicing concerns on timescale for connections | inform stakeholders with improvements we can make to connections process |
| CP-17 | Transmission System Congestion webinar with NGET and the ESO | Any/all stakeholders affected by congestion in transmission system connections queue | Providing transparency on our collective approach to address congestion issues on the transmission network and facilitate new connections in our region. | Completed | Oct-23 | Stakeholders keen to see reduced delays for getting connections completed | NPg to accelerate connections through Technical Delegated Limits |
| CP-18 | Teesside Network Development Plans roundtable | Combined authorities and local authorities | Exploring connections and capacity requirements | Completed | Oct-23 | Continue to support visibility of connections & capacity availability | Continue to enhance accessibility of digital tools and information of our network |
| CP-19 | Climate, Energy and Environment Committee | Committee set up by West Yorkshire Combined Authority include representatives from local authorities across Yorkshire (Leeds City Council, Wakefield City Council) as well as representatives form utilities companies, such as Northern Gas Networks & Yorkshire Water | Meeting provides a collaborative approach to making decisions, setting policies and ensuring robust scrutiny of decisions. | Completed | Oct-23 | - | - |
| SVI-4 | Competition in Connections seminar | Primarily ICPs & IDNOs and customers seeking connections. | Demonstration of Open Data Portal showing ICPs & IDNOs how they can self-serve in terms of capacity on our network | Completed | Nov-23 | - | - |
| SVI-5 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | Provide visualisations - Aerial photography would be better suited to larger geographical areas, allowing them to see what is in the area or their holding. | Seek opportunities to implement visualisations |

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|---|---|---|---|---|---|---|---|
| SVI-6 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | The ability to select a local authority or statutory body layer would be useful. | Add a local authority shapefile onto Open Data Portal |
| SVI-7 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | A specific location is best for individuals and platforms. Substation based location would be easiest. | Plans to build a location based page to pull information from certain datasets based on a selected substation |
| SVI-8 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | Substation RAG rating (red/amber/green indicating how much interest there is). users are interested in info about specific locations to make informed decisions | Implement RAG ratings on substations |
| SVI-9 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | Demand Map – show the location of the business and the demand and capacity of the connection and the direction of the cables | Provide functionality to show this |
| SVI-10 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | Show how many people are looking at a substation, shows where high interest is. Show the number of applications for each substation. | Add this data to LTDS |
| SVI-11 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | Show areas that are going to be upgraded, creating opportunities for businesses. | The Network Development Plan and the Distribution Network Options Assessment coming to the portal (Feb and May) will better indicate areas where reinforcement / flex will free up headroom within the network |
| SVI-12 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | The biggest issue is how up to date the data is e.g., the headroom is no longer available, the capacity accepted and capacity still available. | Add updated times to descriptions which are visible to stakeholders |
| SVI-13 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | In some cases the heat map is too high level for what is needed. | Implement LV heatmap once LV feeder utilisation work has been completed by System Forecasting |
| SVI-14 | Phase 1 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Completed | Nov-23 | Replace all references and links from the NPg website with one single point of entry to the Open Data Portal. Includes notice to inform users of new entry point, which can be re-worded after agreed notice period expires. | Discussions started on who we need to discuss this with in terms of removing sections off the NPG external webpage |
| SVI-15 | Open Data Plan workshop | Stakeholders interested in using our network data | Committed to our principles of transparency, accessibility and interoperability, we are sharing how we have recently updated our Open Data Portal and checking that our plans for future development meet your needs to maximise stakeholder value | Completed | Nov-23 | Continue to consider how to effectively "train" stakeholders to use and optimise the Open Data Portal. | Produce video tutorials/guides |
| SVI-16 | Open Data Plan workshop | Stakeholders interested in using our network data | Committed to our principles of transparency, accessibility and interoperability, we are sharing how we have recently updated our Open Data Portal and checking that our plans for future development meet your needs to maximise stakeholder value | Completed | Nov-23 | Ensure there is an effective method in place to log data requests, and assess appetite for these more broadly. | Implement data mailbox for the collection of data requests |
| SVI-17 | Open Data Plan workshop | Stakeholders interested in using our network data | Committed to our principles of transparency, accessibility and interoperability, we are sharing how we have recently updated our Open Data Portal and checking that our plans for future development meet your needs to maximise stakeholder value | Completed | Nov-23 | Interest in dataset for MDI load data for primary substations | Assess stakeholder appetite for the following datasets - MDI load data for primary substations |
| SVI-18 | Open Data Plan workshop | Stakeholders interested in using our network data | Committed to our principles of transparency, accessibility and interoperability, we are sharing how we have recently updated our Open Data Portal and checking that our plans for future development meet your needs to maximise stakeholder value | Completed | Nov-23 | Keep stakeholders informed in regards to CIM developments on Open Data Portal | Implement CIM model to data |
| CP-20 | North East Chamber of Commerce - Performance through Net Zero | Stakeholders participating in the net zero transition | We presented on#: 1) our forecasts of future energy use, 2) delivering the necessary capacity cost effectively - flexibility including Community DSO, 3) providing connection | Completed | Nov-23 | - | - |
| CP-21 | NPg Stakeholder Panel - Collaborative Whole System Planning | senior leaders across multiple stakeholder groups wanting to collaborate with NPg | Discuss how our activity on open data journey, network planning, LAEPs and transmission network congestion could be improved through collaborative planning | Completed | Dec-23 | Stakeholders asking for better insight into network plans and future investment decisions (where assets will be placed) | Publish DNOA reports and provide Regional Insights support |
| CP-22 | DSO Quarterly Forum - online event | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | Virtual event to update our stakeholders on latest developments in DSO and obtain stakeholder feedback on our performance. Introducing our Implementation Plan (first version) | Completed | Dec-23 | Stakeholders wanting Implementation Plan to highlight customer benefits more and include a glossary for technical terms | Implement stakeholder feedback and update Implementation Plan |
| SVI-19 | NPg Open Innovations Net Zero Data Hack - warm up event | Stakeholders interested in using NPg open data & gaining understanding of our network | We want to encourage people to sign up to this so that we can curate the teams before the main event | Completed | Dec-23 | This warm up event gave us great insight to what is needed for a successful data hack planned in January. We heard that participants want to learn more about NPg data and what further opportunities which may arise from the event. | Provide interested participants with list of our published datasets so attendees can request further datasets to add to Open Data Portal |

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|---|---|---|---|---|---|---|---|
| CP-23 | Social Housing Decarbonisation Roundtable event | Social housing providers | Quarterly engagement session with social housing providers to provide useful information on latest processes and tools to help them decarbonise efficiently | Completed | Dec-23 | Attendees voiced having difficulty motivating major developers to share information into DFES; NPg need to communicate the benefits of this more clearly | Regional Insights team to clearly communicate to stakeholders on the benefits of providing local intelligence for our network planning process |
| CP-24 | 2023 Flexibility tender survey | Participants in flexibility tenders during 2023 | Obtain feedback from stakeholders on the tender process for providing flexibility services | Completed | Dec-23 | NPg only tendered for the Sustain product, which isn't easy to deliver for commercial or industrial demand response assets | Provide more flexibility products so more stakeholders are able to offer flexibility services |
| CP-25 | 2023 Flexibility tender survey | Participants in flexibility tenders during 2023 | Obtain feedback from stakeholders on the tender process for providing flexibility services | Completed | Dec-23 | Tight timescale to go through pre-qualification & sign up steps to be able to participate in tender | Create more streamlined, efficient sign up process to qualify for the tender |
| CP-26 | NPg Transparency in Network Planning online event | All stakeholder types interested in network planning | Flexibility First principles to network planning; inaugural DNOA report | Completed | Jan-24 | Stakeholders interested in how ANM plays a part in the decision making process, particularly the DNOA | Include this analysis in DNOA report |
| CP-27 | NPg Transparency in Network Planning online event | All stakeholder types interested in network planning | Flexibility First principles to network planning; inaugural DNOA report | Completed | Jan-24 | Illustrate scale of area connected i.e. number of connections split out by domestic / commercial? | We are working on this for our future DNOAs |
| CP-28 | NPg Transparency in Network Planning online event | All stakeholder types interested in network planning | Flexibility First principles to network planning; inaugural DNOA report | Completed | Jan-24 | Could you add links to the heat maps to the DNOA Reports where applicable? | Add links to associated reports |
| CP-29 | Flexibility Strategy webinar | stakeholders interested in providing flexibility services | Outline the Northern Powergrid Objectives, Flexibility Roadmap and Engagement for 2024-2026. | Completed | Jan-24 | Stakeholders interested in scope of flex procurement going forward | Include sites on Secondary network as well as EHV & Primary in future tender rounds |
| CP-30 | Quarterly Customer Connections Webinar | Stakeholders involved in connections process | What we are doing across distribution and transmission to get customers connected & providing information on implementation of connections initiatives | Completed | Jan-24 | stakeholders interested in receiving accelerated connections offers due to Technical Delegated Limits | Continue to provide customers with accelerated connections offers |
| SVI-20 | NPg Net Zero Hack at Open Innovations | stakeholders interested in open data & understanding our network | How open data can support decarbonisation in our region, including our Open Data Portal | Completed | Jan-24 | stakeholders desire for wording to be changed on dataset definitions so easier to understand | Update wording on Open Data Portal |
| CP-31 | Government's Plan for Drivers event | Series of workshops with OZEV and DfT | Topic: Charge point operators across UK. Education on UKPNs EV development which has progressed furthest of all DNOs | Completed | Feb-24 | - | - |
| CP-32 | West Yorkshire Climate, Energy and Environment Committee | Committee members | discussion on connection delays and regulatory change (focus on RESP) | Completed | Feb-24 | asked about smaller batteries to help in power cuts. | We informed them of our MicroResilience project and agreed to improve network resiliency going forward |
| CP-33 | West Yorkshire Climate, Energy and Environment Committee | Committee members | discussion on connection delays and regulatory change (focus on RESP) | Completed | Feb-24 | Would like to see data on the major connections network congestion problem to show how we resolving it through time | Make data on this more open and accessible |
| CP-34 | NPg DFES webinar | Any stakeholders interested in learning about our DFES | learn more about DFES approach and our extensive engagement to enable our stakeholder's plans to directly influence our forecasts and investment decisions. | Completed | Feb-24 | Poll showed more than 50% stakeholders interested in DFES to understand what net zero means for them | DFES on our Open Data Portal; continue to improve DFES forecasts annually |
| CP-35 | Energy Savings Trust LEVI NPg-LA Forum | Local authorities | A webinar set up by Energy Savings Trust for Northern Powergrid to present to Local Authorities who have applied for or are due to apply for LEVI funding. Session to provide an overview of things like connections process, key considerations, indicative costs and timelines. | Completed | Feb-24 | stakeholders asked whether we had a guide on the exact installation requirements/standards for installing EV chargers on street lights. | Regional Insights team to create a guidance document due to high interest in EV chargers |
| CP-36 | Bilateral meetings with flexibility aggregators | Swarm, Flexitricity, Octopus, Banks Energy, Swarm Energy | Gain more awareness for future flex tenders, e.g. where are constraints? what sites are available? | Completed | Feb-24 | Provided critique on Piclo Flex & Flexible Power | Taken feedback onboard and working to streamline process for stakeholder's flexibility journey |
| CP-37 | Bilateral meeting | Elexon - preferred candidate for Market Facilitator role | Sharing our flexibility journey with them and spreading awareness of our future plans | Completed | Mar-24 | - | - |
| CP-38 | Bilateral meeting | Ofgem Head of Flexibility | Sharing our flexibility journey and spreading awareness of our future plans | Completed | Mar-24 | - | - |
| CP-39 | Social Housing Decarbonisation Roundtable event | Social housing providers | Quarterly engagement session with social housing providers to provide useful information on latest processes and tools to help them decarbonise efficiently | Completed | Mar-24 | attendees reported a drastic increase in knowledge levels on looped services, service upgrades and costs and timescales associated with preparing a home's electrical supply for LCTs. | Respond to queries around the rationale for not allowing external organisations to carry out works on fuses |
| SVI-21 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Use stakeholder feedback to improve Open Data Portal | Completed | Mar-24 | We would like to have benefits of signing up/creating an account for the datasets. | Develop re-use feature at an individual dataset level |
| SVI-22 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Use stakeholder feedback to improve Open Data Portal | Completed | Mar-24 | Develop Data Pages to introduce the data, show insights and tools, and provide a route to datasets through summary cards at the bottom of each Data Page. | Implement new page types for easier user experience |
| SVI-23 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Use stakeholder feedback to improve Open Data Portal | Completed | Mar-24 | Include Q&A at the level NPg can support. Ideally provide Q&A for each User/Theme | Implement Q& section for users |
| SVI-24 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Use stakeholder feedback to improve Open Data Portal | Completed | Mar-24 | New icons for themes have been uploaded to the portal as well as new themes themselves. The icons for Users have been made and are ready for the user pages | Implement new icons for visual continuity |
| SVI-25 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Use stakeholder feedback to improve Open Data Portal | Completed | Mar-24 | Design templates to provide the ability for 'novice' users to be presented with an introduction, ideas, best practise etc, whilst 'expert' users will have the ability to directly access the background datasets. | Implement templates for easier access for new users on Open Data Portal |

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|---|---|---|---|---|---|---|---|
| SVI-26 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Use stakeholder feedback to improve Open Data Portal | Completed | Mar-24 | Encourage users to share existing use cases and promote reuse to cement the benefits of logging in versus working a 'guest' (not logged in). | Provide ways for encouraging re-use feature |
| SVI-27 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Use stakeholder feedback to improve Open Data Portal | Completed | Mar-24 | Sharing of real time data could be brought forward as a trial to give an indication of what could be provided in the future | Assess opportunity to trial real time data products |
| CP-40 | NPg Regional Decarbonisation Workshop - York | All stakeholder types in our region | To provide a local engagement platform for stakeholders to share their views on how Northern Powergrid could better serve the region; focussing on the journey to net zero | Completed | Mar-24 | the difficulty of contacting NPg was raised a few times | improve access to NPg, including how to contact the right people and find the right information |
| CP-41 | NPg Regional Decarbonisation Workshop - Leeds | All stakeholder types in our region | To provide a local engagement platform for stakeholders to share their views on how Northern Powergrid could better serve the region; focussing on the journey to net zero | Completed | Mar-24 | Concern raised over the resilience of an electrified energy system. Need for improved resilience | Implement methods for improving network resilience |
| CP-42 | NPg Regional Decarbonisation Workshop - Hull | All stakeholder types in our region | To provide a local engagement platform for stakeholders to share their views on how Northern Powergrid could better serve the region; focussing on the journey to net zero | Completed | Mar-24 | Difficulty accessing the right people at NPg | improve access to NPg, including how to contact the right people and find the right information |
| SVI-28 | NPg Regional Decarbonisation Workshop - Sheffield | All stakeholder types in our region | To provide a local engagement platform for stakeholders to share their views on how Northern Powergrid could better serve the region; focussing on the journey to net zero | Completed | Mar-24 | constraint heat maps on Open Data Portal not always easy to access | Improve accessibility to heat maps on Open Data Portal based on stakeholder feedback |
| CP-43 | DSO Quarterly Forum - Net Zero in the North | All stakeholder types interested in our plans for decarbonisation in our region | Launch DSO Implementation Plan to enable regional decarbonisation. Gather stakeholder feedback; ensure they have confidence in our net zero plan | Completed | Mar-24 | Expressed the need to assure stakeholders that vulnerable customers are at the forefront of our decarbonisation plans | Maximise opportunities to partner with organisations already working with vulnerable customers to deliver LCT services |
| CP-44 | DSO Quarterly Forum - Net Zero in the North | All stakeholder types interested in our plans for decarbonisation in our region | Launch DSO Implementation Plan to enable regional decarbonisation. Gather stakeholder feedback; ensure they have confidence in our net zero plan | Completed | Mar-24 | Consider strengthening Northern Powergrid's role in fostering collaboration and best practice sharing between stakeholders in relation to community energy and vulnerable customers. | Continue to progress the Community DSO innovation project which will provide a new opportunity to cater for vulnerable customers and communities in net zero transition |
| CP-45 | DSO Quarterly Forum - Net Zero in the North | All stakeholder types interested in our plans for decarbonisation in our region | Launch DSO Implementation Plan to enable regional decarbonisation. Gather stakeholder feedback; ensure they have confidence in our net zero plan | Completed | Mar-24 | Continue to educate stakeholders about flexibility services and how they can participate | Carry out Flexibility webinar to educate stakeholders how they can participate in next tender round |
| SVI-29 | DSO Quarterly Forum - Net Zero in the North | All stakeholder types interested in our plans for decarbonisation in our region | Launch DSO Implementation Plan to enable regional decarbonisation. Gather stakeholder feedback; ensure they have confidence in our net zero plan | Completed | Mar-24 | Consider establishing a specific email newsletter to inform stakeholders when new datasets are added, showcase use cases, and notify when datasets have been changed or updated | Assess opportunity for producing newsletter on Open Data Portal updates |
| SVI-30 | DSO Quarterly Forum - Net Zero in the North | All stakeholder types interested in our plans for decarbonisation in our region | Launch DSO Implementation Plan to enable regional decarbonisation. Gather stakeholder feedback; ensure they have confidence in our net zero plan | Completed | Mar-24 | Consider making available datasets including: district network data, showing in demand scenarios, active network management data, EV charging data, and capacity and export levels for hospitals. | Assess opportunity for producing newsletter on Open Data Portal updates |
| CP-46 | DSO Quarterly Forum - Net Zero in the North | All stakeholder types interested in our plans for decarbonisation in our region | Launch DSO Implementation Plan to enable regional decarbonisation. Gather stakeholder feedback; ensure they have confidence in our net zero plan | Completed | Mar-24 | Consider customer journey mapping to identify pain points and opportunities for improvement in the connections journey | Assess potential for customer journey mapping |
| CP-47 | Flexibility webinar | Stakeholders interested in becoming a Flexibility Service Provider | Educating stakeholders on how to participate in the Spring 2024 tender round for flexibility services | Completed | Mar-24 | Commitment to providing flexibility services for required duration a barrier to participation | NPg emphasized several times that people can bid for part of a window (NPg are buying for long windows, but FSPs can tender for as little as 10kW in a single 30min settlement period.) |
| CP-48 | Flexibility webinar | Stakeholders interested in becoming a Flexibility Service Provider | Educating stakeholders on how to participate in the Spring 2024 tender round for flexibility services | Completed | Mar-24 | MPAN duplication for customers on Octopus EV tariffs could cause customer confusion if not addressed clearly by all parties | Engagement required to create clear system between all parties and make stakeholder journey easy |
| CP-49 | NPg Regional Decarbonisation Workshop - Middlesborough | All stakeholder types in our region | To provide a local engagement platform for stakeholders to share their views on how Northern Powergrid could better serve the region; focussing on the journey to net zero | Completed | Apr-24 | Awaiting feedback | |
| CP-50 | NPg Regional Decarbonisation Workshop - Newcastle | All stakeholder types in our region | To provide a local engagement platform for stakeholders to share their views on how Northern Powergrid could better serve the region; focussing on the journey to net zero | Completed | Apr-24 | Awaiting feedback | |
| CP-51 | Network Development Plan webinar | All stakeholder types in our region; particularly stakeholders interested in new connections and network planning activities | Learn more about our latest Network Development Plan which show forecasted network constraints and availability for connections in our region | Completed | Apr-24 | Awaiting feedback | |
| CP-52 | Quarterly Customer Connections Webinar | Stakeholders involved in connections process | What we are doing across distribution and transmission to get customers connected & providing information on implementation of connections initiatives | Completed | Apr-24 | Awaiting feedback | |
| CP-53 | Competition in Connections seminar | Primarily ICPs & IDNOs and customers seeking connections. | Demonstration of Open Data Portal showing ICPs & IDNOs how they can self-serve in terms of capacity on our network | Completed | Apr-24 | Awaiting feedback | |

**Key:** SVI - System Visualisation Interface CP - Collaboration Plan

Annex 3

# Change Log

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| Engagement Log ID | Engagement format (e.g. bilateral meeting, event) | Collaborating licensees and other stakeholders | Change request from stakeholder interaction | Improvements/changes implemented | Date of implementation |
|---|---|---|---|---|---|
| CP-1 | DSO Quarterly Forum | All stakeholder types; attendees across local authorities, transport, NGN, energy suppliers and more | Interest in flexibility services and an appetite for more information | Flexibility newsletters & webinars to provide information on flexibility tender process | Regular newsletters & webinars throughout 2023; continuing in 2024 |
| CP-2 | DSO Quarterly Forum | All stakeholder types; attendees across local authorities, transport, NGN, energy suppliers and more | Wanting to know if we are pursuing options for stackability regarding flex services | Engaging with ENA, WSP and other network operators about stacking environment for FSPs that also aligns with ESO | Oct-23 onwards |
| SVI-1 | NPg Stakeholder Panel - Open Data consultation | senior leaders across multiple stakeholder groups wanting to collaborate with NPg | Request for a deep dive on how to navigate our Open Data Portal | Presented Open Data Portal at Open Innovations Open Data Showcase dedicated | Sep-23 |
| CP-3 | Bilateral meeting | West Yorkshire Mayor | Need to continue to explain clearly for CAs and LAs how we are helping, what the nature of the grid congestion problem is and how these issues will be managed | Transmission System Congestion webinar with NGET and the ESO | Jul-23; continued on a quarterly basis |
| CP-6 | Bilateral meeting | Tees Valley Combined Authority | Provide an easy way to share data | Introduced the Local Authority Portal for data sharing and incorporating local intelligence into our DFES | Aug-23 |
| CP-7 | NPg online event - Transmission Distribution Technical Delegated Limits | Connections customers | Customers would like more information on application eligibility | Major Projects Pipeline Look-up webpage | Feb-24 |
| SVI-2 | NPg online event - Transmission Distribution Technical Delegated Limits | Connections customers | Attendees voiced a need for half-hourly data for GSPs | Directed stakeholders to GSP Operational Metering dataset on Open Data Portal | Sep-23 |
| CP-9 | NPg Regional Decarbonisation Conference | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | Interest raised in the idea of more online self-serve opportunities for connections at other voltage | Set up Inform project to learn about functionality to provide budget estimates for HV connections | 2023 onwards |
| CP-10 | NPg Regional Decarbonisation Conference | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | Questions on improved processes for LCT applications for Local Authorities | Provided mass LCT tool for stakeholder to use and assess availability for connections on our network | mid 2023 onwards |
| SVI-3 | Open Innovations Open Data Showcase | All stakeholders interested in DSO & connecting to our network | Many encouraged us to share more open data recognising the opportunities that standardised open data can offer | More datasets added, such as our LTDS and substation utilisation list & plan for data product implementation in future | Oct-23 onwards |
| CP-14 | Flexibility webinar | stakeholders interested in providing flexibility services | stakeholders found the webinar very useful and wanted readily available access to this information | Directed stakeholders to our webinar recording, 'Becoming a Flexibility Services Provider', on our website | Oct-23 onwards |
| CP-16 | National Grid Electricity Transmission (NGET) Pathway to Net Zero Stakeholder (Hybrid) Workshop | NGED, NGET, ESO & NPg in attendance | stakeholders voicing concerns on timescale for connections | Curtailment assessments providing better view if someone accelerates connection or gets non-firm connection, how much capacity they can anticipate – determines economic positioning. | Oct-23 onwards |
| CP-17 | Transmission System Congestion webinar with NGET and the ESO | Any/all stakeholders affected by congestion in transmission system connections queue | Stakeholders keen to see reduced delays for getting connections completed | NPg starting to provide accelerated connections offers through Technical Delegated Limits authority | Nov-23 onwards |
| SVI-5 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Provide visualisations - Aerial photography would be better suited to larger geographical areas, allowing them to see what is in the area or their holding. | Internal discussions on-going about using our bing spatial map layer on the portal to provide an aerial photography option on any of our maps | Ongoing |
| SVI-6 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | The ability to select a local authority or statutory body layer would be useful. | Added a local authority shapefile onto the portal, will look at adding this onto certain data sets. Engagement needed with regional insight to establish which datasets would benefit the most from this | Nov-23 |
| SVI-8 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Substation RAG rating (red/amber/green indicating how much interest there is). users are interested in info about specific locations to make informed decisions | LTDS appendix 8 on the portal that shows level of accepted and quoted design schemes down to primary substation level. Looking to provide RAG status in the future | Nov-23 |
| SVI-9 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Demand Map – show the location of the business and the demand and capacity of the connection and the direction of the cables | Heatmap gives indication of demand headroom already, LTDS map gives EHV cable routes and LV feeders are being added to the portal soon | Nov-23 |
| SVI-10 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Show how many people are looking at a substation, shows where high interest is. Show the number of applications for each substation. | Information added to LTDS appendix 8 | Nov-23 |
| SVI-11 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Show areas that are going to be upgraded, creating opportunities for businesses. | NDP & DNOA added to Open Data Portal | Mar-24 |
| SVI-12 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | The biggest issue is how up to date the data is e.g., the headroom is no longer available, the capacity accepted and capacity still available. | Added update times into descriptions to give stakeholders an idea of how often that information is updated | Nov-23 |

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| SVI-13 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | In some cases the heat map is too high level for what is needed. | We plan to add LV heat maps to our Open Data Portal mid 2024 | Apr-24 |
| SVI-14 | Project with third party data specialist to improve Open Data Portal | One-to-one interviews with current users of the Open Data Portal to obtain feedback on potential improvements | Replace all references and links from the NPg website with one single point of entry to the Open Data Portal. Includes notice to inform users of new entry point, which can be re-worded after agreed notice period expires. | Implemented feedback to re-shape entry to Open Data Portal, enhancing accessibility | Mar-24 |
| SVI-15 | Open Data Plan workshop | Stakeholders interested in using our network data | Continue to consider how to effectively "train" stakeholders to use and optimise the Open Data Portal. | Video tutorials/guides for the portal are planned | Nov-23 onwards |
| SVI-16 | Open Data Plan workshop | Stakeholders interested in using our network data | Ensure there is an effective method in place to log data requests, and assess appetite for these more broadly. | We now have an open data mailbox for the collection of data requests | Nov-23 onwards |
| SVI-17 | Open Data Plan workshop | Stakeholders interested in using our network data | Interest in dataset for MDI load data for primary substations | LTDS appendix 5 now gives load information for our EHV network (primary and above) | Nov-23 |
| SVI-18 | Open Data Plan workshop | Stakeholders interested in using our network data | Keep stakeholders informed in regards to CIM developments on Open Data Portal | CIM data on the Portal will come hand in hand with the transfer of the LTDS to CIM in the next 2 years or so | Nov-23 |
| CP-21 | NPg Stakeholder Panel - Collaborative Whole System Planning | senior leaders across multiple stakeholder groups wanting to collaborate with NPg | Stakeholders asking for better insight into network plans and future investment decisions (where assets will be placed) | First DNOA published in March 2024, Regional Insights team continue to develop relationships and share data | Mar-24 onwards |
| CP-22 | DSO Quarterly Forum | All stakeholder types interested in DSO; attendees across local authorities, transport, NGN, energy suppliers and more | Stakeholders wanting Implementation Plan to highlight customer benefits more and include a glossary for technical terms | Updated Implementation Plan, making it more focused on customer benefits and included glossary for technical terms. Final version published in March | Mar-24 |
| SVI-19 | NPg Open Innovations Net Zero Data Hack - warm up event | Stakeholders interested in using NPg open data & gaining understanding of our network | We heard that participants want to learn more about NPg data and what further opportunities which may arise from the event. | In response to a participant's request we have provided a list of our published data and now await requests for extra datasets. | Dec-23 |
| CP-24 | 2023 Flexibility tender survey | Participants in flexibility tenders during 2023 | NPg only tendered for the Sustain product, which isn't easy to deliver for commercial or industrial demand response assets | We have adopted new standard products and intend to introduce other use cases and products in the future | Mar-24 onwards |
| CP-26 | NPg Transparency in Network Planning online event | All stakeholder types interested in network planning | Stakeholders interested in how ANM plays a part in the decision making process, particularly the DNOA | Included in DNOA report that our models consider all power system aspects, including voltage & thermal parameters, for options assessments | Mar-24 |
| CP-28 | NPg Transparency in Network Planning online event | All stakeholder types interested in network planning | Could you add links to the heat maps to the DNOA Reports where applicable? | We added links to the relevant documents, link to the Network Development Plan (NDP) & LTDS which in turn provides links to the heat maps. | Mar-24 |
| CP-29 | Flexibility Strategy | stakeholders interested in providing flexibility services | Stakeholders interested in scope of flex procurement going forward | Started to procure and increase scope for flex procurement on Secondary network | Jan-24 onwards |
| SVI-20 | NPg Net Zero Hack at Open Innovations | stakeholders interested in open data & understanding our network | stakeholders desire for wording to be changed on dataset definitions so easier to understand | Updated dataset definitions with less industry jargon | Feb-24 |
| CP-33 | West Yorkshire Climate, Energy and Environment Committee | Committee members | Would like to see data on the major connections network congestion problem to show how we resolving it through time | Provided access to our GSP Pipeline Look-up Tool, an online webpage to assist stakeholders in connections process. Will make this data more open in the quarterly webinar updates | Feb-24 onwards |
| SVI-21 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | We would like to have benefits of signing up/creating an account for the datasets. | Implemented Re-use feature allowing users to save, reuse and share their work - promotes collaboration | Mar-24 |
| SVI-22 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Develop Data Pages to introduce the data, show insights and tools, and provide a route to datasets through summary cards at the bottom of each Data Page. | We are developing templates of specific page types dedicated to i) user types, ii) data themes, and iii) datasets, which will create a more customised approach for users when navigating the Portal and enable them to meet specific needs and access bespoke information | Ongoing |
| SVI-23 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Include Q&A at the level NPg can support. Ideally provide Q&A for each User/Theme | Implement Q&A section | Ongoing |
| SVI-24 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Introduce icons for the User and Theme templates to retain visual continuity across the portal. | New icons for themes have been uploaded to the portal as well as new themes themselves. The icons for Users have been made and are ready for the user pages | Mar-24 |
| SVI-25 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Design templates to provide the ability for 'novice' users to be presented with an introduction, ideas, best practise etc, whilst 'expert' users will have the ability to directly access the background datasets. | Implement templates for easier access for new users on Open Data Portal | Ongoing |

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| SVI-26 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Encourage users to share existing use cases and promote reuse to cement the benefits of logging in versus working a 'guest' (not logged in). | Reuse feature has been turned on, planning some communications to give benefits of users providing use cases and building a "community" within the portal | Mar-24 |
| SVI-27 | Phase 2 - Project with third party data specialist to improve Open Data Portal | Current & prospective users of our Open Data Portal | Sharing of real time data could be brought forward as a trial to give an indication of what could be provided in the future | Real-time GSP dashboard dataset to be uploaded to Open Data Portal | Ongoing |
| CP-41 | NPg Regional Decarbonisation Workshop - Leeds | All stakeholder types in our region | Concern raised over the resilience of an electrified energy system. Need for improved resilience | Using InTEGReL project to facilitate MicroResilience and implement first 2 microgrids | Ongoing |

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