Our DSO Implementation Plan for 2024/25

A plan fit for our region

Enabling net zero for Yorkshire, the Northeast and Northern Lincolnshire is a priority for Northern Powergrid. We will achieve this by effectively delivering distribution system operation (DSO) in close collaboration with our regional stakeholders, delivering an energy system that meets their needs.

Our DSO Strategy for RIIO-ED2 set out how we planned to deliver DSO over 2023-2028 and was informed by extensive stakeholder engagement. We are delivering on our plans and as we do we will ensure that we are guided by stakeholder input.

In November 2023 we published our "Advancing our DSO Implementation Plan" document that sought stakeholder input on the deliverables that we have planned for the 2024/25 regulatory year. Following feedback, this is now our DSO Implementation Plan – a deliverable plan that is designed to meet our region's needs.

Paul Glendinning,
Director of Energy Systems

"Following feedback, this is now our DSO Implementation Plan – a deliverable plan that is designed to meet our region's needs."

We have consulted on this plan broadly with our stakeholders to ensure that we are clear on our regions needs, and to confirm that our planned action addresses those priorities. Stakeholder input has helped mould and develop our plan so we can deliver maximum benefit.

Through the engagement carried out, we have developed DSO personas representing our stakeholders key priorities and we have used these to ensure our plan meets their needs. You will find our DSO personas in section 3.

Our plan moves us forward in forecasting, developing and operating our network in a smarter, more flexible way and delivering faster and more cost effective connections. We will continue to be an enabler of our region's net zero ambitions, whilst balancing the need for affordability and the impact of the cost of living crisis.

We have started the RIIO-ED2 period with strong momentum to deliver our DSO strategy and have already made great progress, delivering a solid foundation to build on – our progress to date is detailed further through this document.

The forward plan then builds on these foundations laid and pushed forwards in the areas that are key to enabling net zero for Yorkshire, the Northeast and northern Lincolnshire.

These are significant undertakings that can only be achieved through continued collaboration with our customers and stakeholders.

I thank everyone that has input into this plan and encourage you to continue to engage with us as we go on this exciting journey together.

Paul Glendinning,
Director of Energy Systems.

Introduction

Transitioning towards net zero

The world is constantly changing and we need to ensure that our business and our plans evolve to continually align to our stakeholders' needs.

The energy system is evolving as we transition towards net zero; electricity networks are critical to enabling this change.

For our region to meet the national commitment of net zero emissions by 2050, we need to be an enabler of whole energy system decarbonisation; our part in this is delivering an electricity distribution system that allows the electrification of energy demand in the most efficient and cost-effective way.

Our vision, which has been developed with input from our stakeholders over the past five years, is to deliver a smarter and more flexible energy system that enables our customers to decarbonise efficiently; enabling domestic users to adopt EVs, heat-pumps and rooftop solar; enabling industrial and commercial customers to decarbonise their businesses; and enabling renewable generation and storage to be added to the distribution network to meet increased demand.

To achieve this we are expanding our capabilities and taking on the functions of a DSO to actively manage the increasingly complex power flows on our network that result from decarbonisation, reduce the need for conventional reinforcement and ensure that the transition to net zero is efficient and affordable.

Our DSO strategy was published as part of our RIIO-ED2 business plan in December 2021, and since then we have made great progress, delivering at pace, as set out in more detail in this document.

> "Our vision is to deliver a smarter and more flexible energy system that enables our customers to decarbonise efficiently."

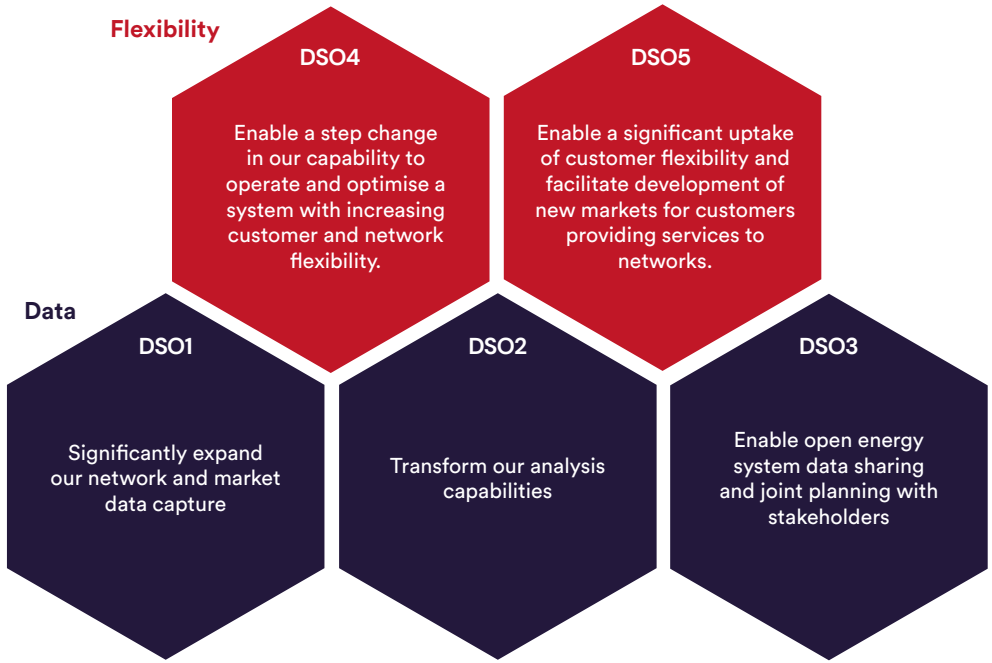
We have also integrated our Major Connections business into the DSO, recognising the intrinsic role that we have in enabling net zero by getting low carbon technologies, generation and large-scale industrial decarbonisation projects connected to our network.

The world is constantly changing and we need to ensure that our business and our plans evolve to continually align to our stakeholders' needs – our DSO Implementation Plan confirms our delivery priorities for the 2024/25 regulatory year and has been developed in conjunction with our stakeholders.

Evolving our plans

Our DSO Implementation Plan is a continuation of the work we have done over the past five years to shape distribution system operation for the Northeast, Yorkshire and northern Lincolnshire.

Our RIIO-ED2 DSO strategy is built on five outcomes. These still hold true and form the basis for our Implementation Plan and underpin Ofgem's DSO roles - Network Planning and Development, Market Development and Network Operation.



2018

DSO Emerging Thinking

Our early thinking on how we unlock the benefits of an energy system through DSO.

2019

DSO Development Plan

An updated vision and direction for DSO as we engaged on our RIIO-ED2 plans.

2021

RIIO-ED2 plan - DSO Strategy

Our RIIO-ED2 plan set out a clear strategy for delivering system operation for our region.

2023

Advancing our DSO Implementation Plan

We engaged on our DSO Implementation Plan and sought stakeholder feedback to ensure it meets your needs.

Stakeholder feedback

2024

DSO Implementation Plan

Our plan sets out how we will move DSO forward in 2024/25 and the actions we will deliver to meet our stakeholders' needs.

Progress to date

Our progress

Establishing distribution system operation functions is a priority at Northern Powergrid as we start the RIIO-ED2 period.

We have set up our Energy Systems directorate to create a focal point for distribution system operation functions - a growing team incorporates our Policy, System Forecasting, System Flexibility and Major Connections teams; and we have stuctured DSO alongside other key externally facing departments including Regional Engagement, External Affairs and Innovation.

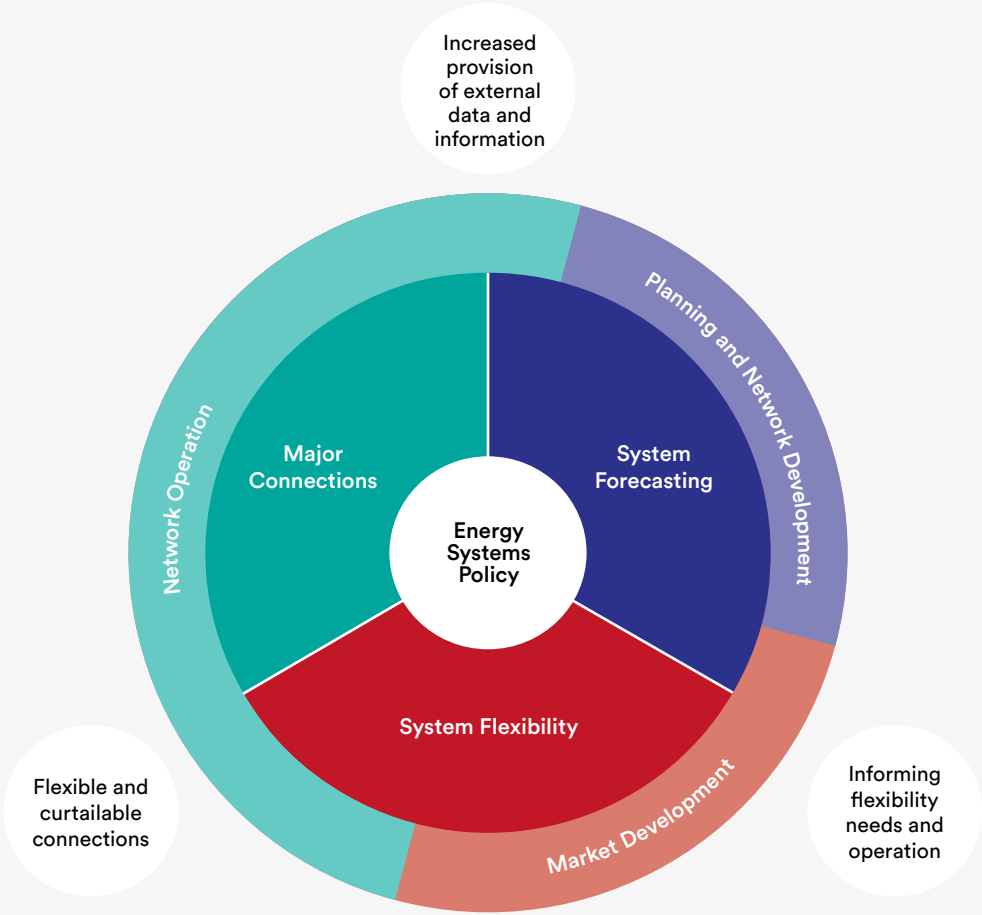
We are delivering significant benefit to our region and Ofgem's expectations of:

- Planning and Network Development
- Market Development
- Network Operation

We have embedded our major connections business in our DSO structure acknowledging the importance of connecting renewable generation to our network and providing connections to electrify and decarbonise industry. Many of these connections are being enabled by innovative, flexible solutions – thus there is a clear synergy of including Major Connections within DSO.

Major Connections is part of our core team delivering distribution system operation - getting customers connected quickly and economically is a key outcome of an effective energy system a and those same connections can provide flexibility to our network.

Our model to deliver on distribution system operation



Our core teams focussed on distribution system operation are delivering on Ofgem's defined roles.

£1.4m

of reinforcement deferred through the use of flexibility services

21,000

new homes reflected in our network planning

22

sites offered to the market for flexibility services

3,300

LV monitors installed on our network

Planning and Network Development

— **Enhanced DFES**
We have enhanced our 2023 DFES publication taking a ground up modelling approach and revising our assumptions in detail. This also involves the inclusion of detailed planning data from eight local authorities, where our Regional Insights team is working collaboratively with them to support their net zero and strategic goals. This data includes location specific data for 21,000 new homes, and 48 major projects. By doing this our network planning can more effectively deliver on our region's needs.

— **Open Data Portal**
Our Open Data Portal was launched at the start of 2023 and an unprecedented level of network data has been made available to our stakeholders, with Application Programming Interfaces (APIs) and visualisations making the data more available and insightful. There are over 2,500 unique users utilising our Open Data portal and significant activity via APIs showing automated use of our data.

— **Secondary Network Visibility**
We are now utilising Low Voltage (LV) monitoring and smart meter data to inform our secondary network forecasting, improving the granularity and accuracy of our understanding of our ~63,000 distribution substations on our network. We have installed 3,300 LV monitors on our network and are using the data to understand those substations in detail, and infer that understanding onto our wider network. By doing so we can make better forecasting decisions around where flexibility services can be used, or where and when is the most efficient to carry out reinforcement.

— **Decision Making Openness and Transparency**
We have established an independent panel to review our approach to decision making and provide openness and transparency to stakeholders.
We have published our 'flexibility first' policy, demonstrating our commitment to deploying flexible solutions wherever possible, ahead of carrying out traditional reinforcement works - giving confidence to flexibility service providers in our region as to how we identify and procure our flexibility needs. In March 2024 we published our first Distribution Network Options Assessment (DNOA) report providing stakeholders with clarity on the flexibility decisions we have taken on our network.

Network Operation

— **Flexibility services contracted**
Winter 2022/23 saw us operate our first flexibility service contract, with a biogas generator providing 1.4MW via the sustain product to help manage a winter peak and defer £1.1m of reinforcement. Over 2023/24 we have secured a further three flexibility services contracts, importantly contracting with flexibility aggregators providing LV flexibility, solving constraints on our LV network.

— **Flexible Power**
We are operating flexibility services through the Flexible Power platform, creating an efficient and automated way to dispatch, monitor and settle services - making our flexibility services market easy and convenient to operate in.

— **Technical limits**
We have worked extensively with our customers, Electricity System Operator (ESO) and the wider industry to develop an approach to delegated technical limits. We are issuing accelerated connection offers to customers under the technical limits scheme, and on average have reduced their lead time by 6 years.

Market Development

— **New market platform**
We have adopted the Piclo Flex market platform, providing Flexibility Services Providers (FSPs) with a familiar and convenient interface to view our flexibility requirements and participate in tenders. Using the Piclo platform, our Autumn 2023 tender round saw us double the number of parties that successfully prequalified.

— **Tendering at Primary and Secondary substation levels**
We are tendering for flexibility services to address both HV and LV constraints on our network, expanding the opportunities for network users to contract with us to provide flexibility services. In our Autumn 2023 flexibility services tender we sought services at 22 sites across our network, including 10 on our LV network.

— **Extensive engagement**
We are engaging extensively with potential FSPs across our region, to raise awareness of the benefits of flexibility and understand how we can enable maximum participation. Our engagement has been targeted around geographic areas where we are tendering for services, driving awareness of our needs.

A plan that responds to our region's needs

A plan that responds to our region's needs

The communities we serve all have their own unique characteristics, net zero ambitions and local networks that have developed over the years. Our DSO Implementation Plan must acknowledge these differences and set out a direction that is specific to our region, our networks and our stakeholders.

We have carried out in depth analysis of regional characteristics in partnership with Electricity North West (the DNO for the North West) which shows clear regional differences across the UK. The North East and Yorkshire has a strong industrial heritage and as heavy industry winds down, network capacity is being released. This deindustrialisation leaves useable capacity on our network, and coupled with other socioeconomic and technical factors identified, leads to network development planning and flexibility needs that are different to other GB networks.

Whereas for other distribution network operators flexibility is a necessary solution to address issues with capacity, for us flexibility is a tool we expect to use more in the future that we must invest in now to be ready.

Our market development activities are focussed on creating new processes and systems that make it as easy as possible for broad participation, whilst procuring targeted services for the areas of our network that really need it.

Our key challenge in the short term is to utilise our existing network capacity as efficiently as possible.

As such, leveraging data to understand and communicate what capacity is available to our stakeholders and collaboratively planning the network is high on our priorities. We have made our Major Connections business part of DSO at Northern Powergrid, finding flexible ways to deliver timely and cost-effective connections to help our customers and communities decarbonise more quickly. We are continually engaging on our plans, listening to stakeholder feedback and incorporating your views into our forward view.

REGIONAL INSIGHT

A plan shaped by stakeholder input

It is critical that our plan delivers an energy system that meets the needs of our stakeholders. We have carried out significant engagement to capture your views and ensure they shape and co- create our plans.

After publishing our "Advancing our DSO Implementation Plan" document in November 2023, proposing our plan, we have engaged through surveys, face to face and hybrid events to understand if our plan meets the needs of our region.

We have also run one to one engagement to test our understanding of stakeholders needs through our personas work.

We have received significant support for our plan and have listened to the feedback; shaping our priorities around the items that deliver maximum benefit for our stakeholders.

We have heard… access to individuals to discuss network planning and net zero planning is a priority. There is significant support for expanding our Regional Insights team.	We will prioritise the growth of the Regional Insights team to provide support and engage with our stakeholders net zero planning.
We have heard…continuing to deliver more network data through our open data portal is key, but also providing tutorials and support to understand that data will drive more value.	We will deliver tutorials and methodology explainers on our most used open data sets to support stakeholder use.

Our DSO Personas

It is key that our plan meets the needs of our stakeholders and network users.

Through the engagement we have carried out we have formed our nine DSO personas - these are representative customer and stakeholder types, based on real interactions we have had.

We are using our DSO personas to guide our decision making to test that our plan meets their needs.

Stakeholder Personas

John

Flexibility Aggregator

John works for an energy company that aggregates and optimises EV charging; pooling individual household's EVs to be one larger energy asset and participating in flexibility services. John wants to help individuals adopt low carbon technologies in the most cost-efficient way.

Priorities and needs

John needs to be able to build a critical mass of users in any given location in order to participate in flexibility services. As such, he needs an understanding of future flexibility services requirements in order to recruit customers in relevant areas. The flexibility services must be easy and straightforward to participate in and must be coordinated across GB and through transmission and distribution.

Our Commitments

- Broadening our use of flexibility services across our primary and secondary networks to increase the opportunities to participate.
- Maximising the value of flexibility services by finding solutions to stackability and developing short term forecasting for the primary network.

Patrick

Flexibility Service Provider

Patrick works for a large generation operator who operate in the flexibility markets. The company has gas generators and battery storage ranging from 5 to 50MW connected to distribution networks and plans to develop further projects in the Northern Powergrid licence area.

Patrick needs opportunities to operate flexibility in Northern Powergrid's licence area that are commercially viable and he needs the ability to bid for and operate these services in a simple way. To identify future opportunities to develop assets Patrick needs access to data and information regarding the network and forecast constraints.

- Broadening our use of flexibility services across our primary and secondary networks to increase the opportunities to participate.
- Maximising the value of flexibility services by finding solutions to stackability and developing short term forecasting for the primary network.
- Highlight opportunities for future flexibility services through our forecasting and open data processes.

Juliet

Distributed Generation and Battery Storage Developer

Juliet works for an international organisation who develop generation sites of renewable energy assets paired with battery storage, and standalone battery storage sites. They have plans to develop around 100 sites across the UK over a 3 year period to provide clean, local electricity sources helping the UK decarbonise. Juliet needs to be able to identify the best opportunities for development sites, to develop business cases that justify the large investment needed.

Juliet needs to be able to identify viable projects for investment; she needs sufficient information to make decisions on where to target investment and cost-effective connections to Northern Powergrid's network, with short lead times. The connection needs to provide sufficient access to the network to support a positive business case. Juliet needs to understand further revenue opportunities for the assets through flexibility services.

- Increased open data and information sharing will provide Juliet with more information to identify potential development sites both on a technical and commercial basis.
- Interim flexible connections and dynamic queue management will allow us to connect customers faster.
- Developing our enterprise Active Network Management system will allow us to connect customers faster and at lower cost.
- Maximising the value of flexibility services by finding solutions to stackability and developing short term forecasting for the primary network.

Stakeholder Personas

Hardeep

Commercial and Industrial Customer

Hardeep operates a pharmaceutical manufacturing plant that consumes large amounts of electricity that can vary significantly throughout the day. His organisation has goals for decarbonising their operations and supporting net zero. As part of his energy planning he is considering flexibility opportunities as well as decarbonising his fleet of vehicles.

Priorities and needs

Financial drivers including energy costs and connections costs are all key to Hardeep, these need to be balanced against his businesses net zero and sustainability goals. He is looking to Northern Powergrid to provide support to understand flexibility opportunities and to make it easy to participate. He also wants accessible routes into Northern Powergrid to support his decarbonisation plans and connect low carbon technologies (LCTs) quickly.

Our Commitments

- Broadening our use of flexibility services across our primary and secondary networks to increase the opportunities to participate.
- Maximising the value of flexibility services by finding solutions to stackability and developing short term forecasting for the primary network.
- Growing our Regional Insights team to support more stakeholders with their net zero plans and make navigating our processes easy.

Munaza

Vulnerable Customer

Munaza is 62 and lives alone in an assisted living rented property. She has several health problems. This means her core energy usage is higher as she needs to stay warm and has some medication that has to be kept in the fridge. She also struggles with using smart devices or apps due to dexterity issues. She relies on benefits and is worried she might owe money for electricity because she cannot easily access the meter to give readings. Her home always feels really cold but she's not sure what can be done or who can help her to sort all this out.

Munaza is experiencing all the key barriers (affordability, accessibility, usability and knowledge) to energy solutions. She needs holistic support and advice around affordability of her energy needs and money issues more widely, until her immediate financial needs are met and her meter issues resolved she does not want to talk about wider energy issues like efficiency or low carbon technologies (LCTs). Once her immediate issues are resolved she may be interested in hearing more other options which may help her to heat her home affordably.

- Scaling of affordability/fuel poverty advice and support services through trusted partners.
- Establishing, developing and scaling up our Decarboniation Homes support services through trusted partners.
- Developing our network efficiently and economically, utilising flexibility options to keep customer bills low.

Adele

Community Energy

Adele is leading a group at a North Yorkshire Church, seeking funding and support with the planning process for installing solar PV, thermally efficient windows and heat pumps in four churches across the district. They are keen that this project helps them to demonstrate that net zero is possible for church buildings in an efficient and affordable way. They also want to use their position in the community to offer advice on decarbonisation.

Adele is very interested but has limited knowledge around low carbon technologies. Beyond this, her biggest challenge is around securing funding to scope the feasibility of these projects. She needs support to navigate the planning system (including grid connections), and to find a viable and affordable solution. She would also like to build her knowledge to enable her to improve local resilience, address environmental concerns and help those that may be left behind in the energy transition in the future.

- Deliver our flagship Community DSO project, which aims to develop new frameworks that will allow local communities and stakeholders to deploy Smart Local Energy Systems.
- Expert (Regen) led Community Energy Engagement Programme including capacity and capability building and Community Energy Net Zero Fund.
- Deliver tutorials and explainers to our stakeholders, helping them to get greatest value from our available data.

Stakeholder Personas

Kamil

National Energy System Operator

Kamil works in the National Energy System Operator (NESO), balancing generation and demand on the transmission network in real time. He needs to understand what is happening on the distribution network; both how distributed energy resources are operating and how the DNO is operating flexibility for local needs.

Priorities and needs

Kamil and his colleagues need a close working relationship with Northern Powergrid and the other DNOs. They need data and information shared in a standardised way in order to understand the whole energy system and manage flexibility and distributed energy resources and maintain a resilient and balanced system.

Our Commitments

- Deploy an enterprise-scale Active Network Management (ANM) solution to deliver flexible connections and the visibility and control of DERs for ESO.
- Establish the Inter Control-room Communication Protocol (ICCP) to create links between DNO and ESO control rooms to achieve real-time coordination of DER dispatch.

Andrew

Local Authority

Andrew is a climate change officer working in a local authority in the North East. His role involves looking holistically at potential LCT uptake across his area, including EV charging networks, heat pumps and heat networks. He plays a key role in developing the Local Area Energy Plan (LAEP), along with a wider team of colleagues who specialise in areas including decarbonisation of business operations, social housing, micro-grids and more.

Andrew is working across a number of complex and long duration projects and is facing competing priorities. His level of expertise varies across the various elements of each project. Andrew needs engagement from Northern Powergrid on the Local Area Energy plan including provision of data and information and understanding where low carbon technologies can be deployed en masse. He also needs tailored support on specific issues to navigate the complex and varying issues that energy projects bring.

- Grow our Regional Insight team to provide greater reach and levels of support to local authorities and major energy users.
- Develop digital twins of our network to provide centralised models that can inform our internal and stakeholders' planning and decision making.
- Deliver tutorials and explainers on our network data to support stakeholders' use of our data.
- Deliver the enduring mass LCT uptake tool.

Tim

Domestic Customer

Tim owns his victorian rural home and plans to stay there with his family long term. He currently has solar PV installed at his property and has implemented energy efficiency measures. He is due for a boiler replacement in the next 18-months and is considering a heat pump, but is not clear on who to ask for advice. He is concerned about the environment and wants to leave a better future for his children but his biggest driver is keeping his energy costs down.

Tim is looking for reassurance about the best LCT options to suit his budget, minimize disruption and on-going running costs as well as advice on potential access to funding. In order to get the most from his LCTs Tim needs the opportunity to participate in flexibility markets to minimise his energy costs.

- Establishing, developing and scaling Decarbonising Homes support services through trusted partners.
- Deliver our flagship Community DSO project, which aims to develop new frameworks that will allow local communities and stakeholders to deploy Smart Local Energy Systems.

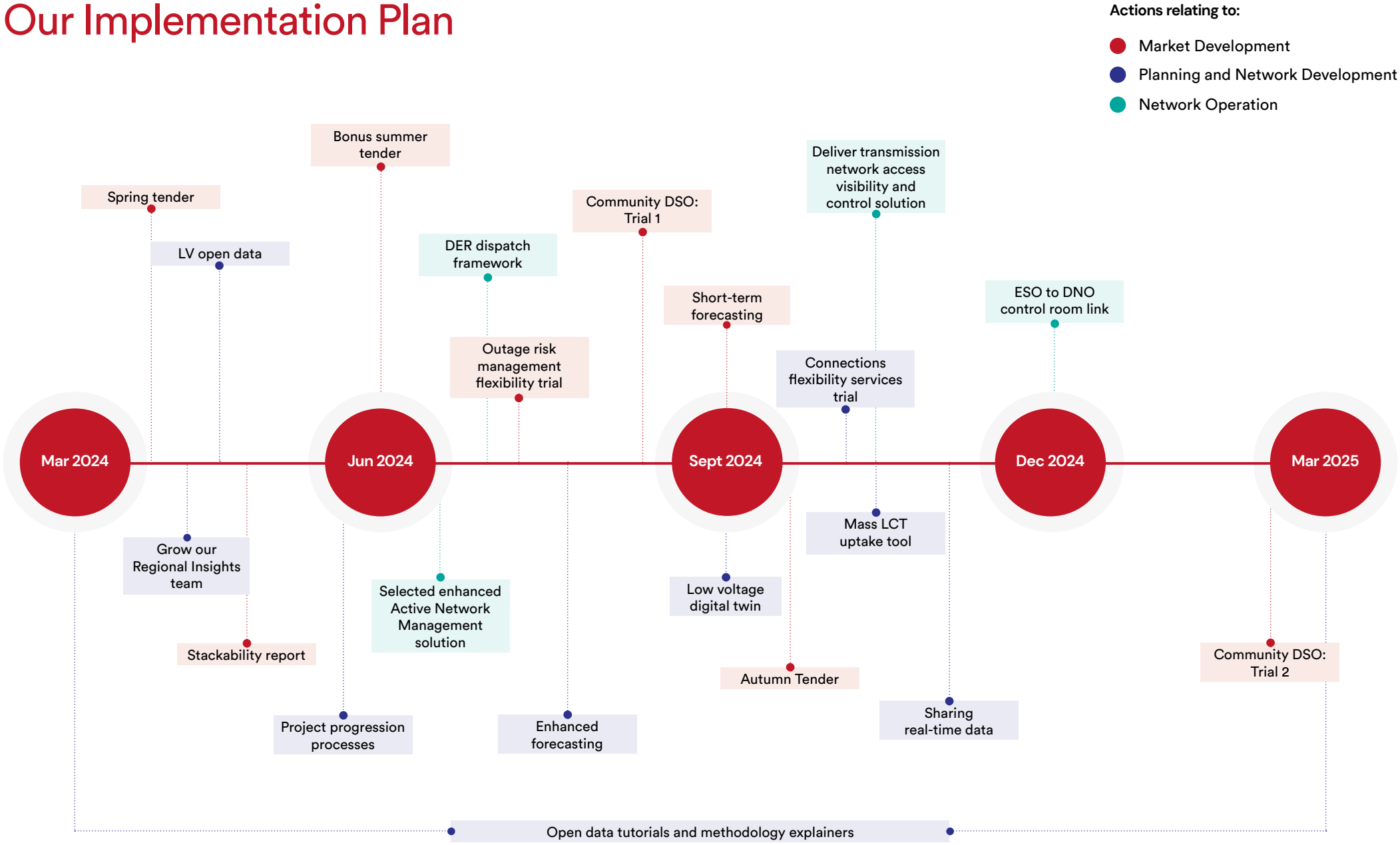
Our forward looking plan

A plan that sets out to deliver significant change together

Our DSO Strategy for RIIO-ED2 sets out a five-year roadmap for us to deliver significant change – our Implementation Plan draws down on that strategy and sets out a near term timeline for those deliverables.

Our Implementation Plan has been informed by our engagement to date, prioritising items and accelerating them.

Our Implementation Plan



Planning and Network Development

Effective, collaborative planning; network development and taking a whole system approach will help us to utilise the existing network as fully as possible and make efficient future investment decisions. Based on stakeholder feedback we are working on the following deliverables and future priorities.

Stakeholder input

- Our Regional Insights team are engaging with local authorities, LCT installers and other key stakeholders and hearing that collaboration and planning the network together is a priority. We are growing our team so more of this effective engagement can happen – feeding local insight into our network plan.
- Our stakeholders liked our AutoDesign tool which can help them to identify the most viable and cost-effective locations to connect to our LV network but said they wished there was a way to test multiple connection points simultaneously – the new mass LCT uptake tool we are developing will deliver that.
- Stakeholders told us they want more data available on the Open Data Portal, including real-time EHV data to inform their view of our network.
- Stakeholders told us they want more guidance on how to use the data available via the Open Data Portal, in order to maximise the benefit of this data.

Our stakeholders are more engaged with the energy transition than ever before. Most large organisations in our region are actively developing and implementing plans to reach net zero, and with this comes an increased interest in the electricity network as an enabler.

It is clear from stakeholder feedback that a clear route into Northern Powergrid to discuss planned development in the region is key. Our Regional Insights team are providing that route - engaging with local authorities, LCT installers and other key stakeholders to share data and planning insight. This helps us to create network development plans that are cognisant of regional development.

Based on positive feedback regarding our Regional Insights team we are growing the team so more of this important engagement can happen.

2023/24 Deliverables	2024/25 Priorities
Enhanced DFES – bottom-up approach to incorporate the latest network and customer information and stakeholder feedback.	Develop digital twins of our network to provide centralised models that can inform our internal and stakeholders planning and decision making.
Deliver our first Distribution Network Options Assessment (DNOA) report - providing transparency to our stakeholders of the decisions we are making in developing our network.	Implement revised processes to track project progression more closely and manage the connections queue dynamically.
Established our Open Data portal with 39 data sets representing asset, operational and planning data.	Enhanced forecasting techniques to understand network capacity and loading in greater detail.
Significant engagement from our Regional Insights team, supporting Local Area Energy Plans and other key regional stakeholders with their net zero plans.	Provide monitoring data from our LV network to our stakeholders via our Open Data Portal.
Interim mass LCT application tool developed to allow local authorities to identify areas of our network suitable for mass deployments.	Provide near real-time EHV network data to our stakeholders via our Open Data Portal.
	Deliver tutorials and explainers to our stakeholders, helping them to get greatest value from our available data.
	Continue to grow our Regional Insights team to provide greater reach and levels of support to local authorities and major energy users.
	Develop an enduring online mass LCT uptake tool, to allow users to assess the network capacity for multiple connections.

Market Development

Flexibility services will be key to optimising the future management of our network. Developing the flexibility market in our region is a priority and will position us ready to utilise the consumer and network benefits flexibility services will provide. We are prioritising the following deliverables to develop our regional flexibility market.

Stakeholder input

- Flexibility Service Providers (FSPs) want our tenders to be straight forward and easy to participate in – we are delivering this by using the Piclo platform, providing consistency and a common interface with other DNOs that utilise the platform.
- Our FSPs want to have certainty about when their services will be used and to know that they can interact with other markets simultaneously. Our work on short-term forecasting and stackability will enable that.
- Our stakeholders want to see a move towards a smarter network that balances energy at the local level – Community DSO paves the way and proves the concept.

Our stakeholders have told us that they want to see a move towards a smarter network that balances energy at a more local level.

Our Community DSO innovation project will test the use of Smart Local Energy Systems to allow communities to balance energy usage at a local level, with less reliance on the wider distribution network.

The project will provide important insight on the effectiveness of technical solutions and commercial concepts to help understand how localised flexibility services can be used in the future.

2023/24 Deliverables	2024/25 Priorities
Broaden the use of flexibility services to address constraints across our Primary and Secondary networks.	Deliver a methodology for short-term forecasting of the Primary network to inform the dispatch of flexibility services.
Deliver end-to-end flexibility tenders via our market platforms, targeting three tender rounds per year.	Find solutions to ‘stackability’ of flexibility products to allow FSPs to operate DSO and ESO flexibility products simultaneously.
Significant engagement with potential FSPs in our region to grow awareness of the opportunities of flexibility services.	Deliver our flagship Community DSO project, which aims to develop new frameworks that will allow local communities and stakeholders to deploy Smart Local Energy Systems.

Network Operation

Throughout RIIO-ED2 we will increasingly utilise flexibility services, flexible connections and network flexibility solutions. To make these accessible and easy to participate in for our stakeholders, we are prioritising the following deliverables.

Stakeholder input

- Our major connections customers want us to find solutions to reduce their lead-times where transmission constraints impact them – developing our enterprise Active Network Management (ANM) and Inter Control-room Communication Protocol (ICCP) link will address this, allowing ESO the visibility and control over distribution connected Distributed Energy Resources (DER).
- Our Flexibility Service Providers (FSPs) told us that they want clarity and transparency over how we decide when to dispatch their service. On top of effective short-term forecasting, our DER dispatch framework will provide transparency as to how we make these decisions.

As we move towards utilising more dynamic flexibility services products, current and prospective Flexibility Service Providers are seeking clarity on how decisions will be made as to which service is dispatched – to bring them clarity and confidence in their business decision to enter into a contract.

Developing our DER dispatch decision making process will deliver that clarity for our stakeholders.

2023/24 Deliverables	2024/25 Priorities
Develop processes to monitor and manage curtailable and flexible connections.	Deploy an enterprise-scale ANM solution to deliver flexible connections and the visibility and control requirements of the ESO, in order to connect more generation without transmission constraints.
Specify our Transmission network access visibility and control solution.	Establish the ICCP to create links between DNO and ESO control rooms to achieve real-time coordination of DER dispatch; manage conflicts and allow customers to stack revenue streams.
Revised 28 offers to provide earlier connection dates for customers, reducing lead times by 6 years by offering non-firm arrangements through delegated technical limits.	Introduce a clear and transparent decision-making framework for DER dispatch, which is consistent with other DNOs and in harmony with the Primacy rules for the ESO.
Managing the distribution pipeline to reuse capacity for connections that are ready to progress.	Deliver the CLASS network flexibility solution, allowing Northern Powergrid to contribute to whole system balancing and create revenue streams that will benefit consumer bills.

We will succeed through collaboration

05

The publication of this DSO Implementation Plan forms a clear path forward for the next year, however net zero will only be achieved through continual collaboration.

We have a programme of engagement events throughout the year that we would love you to get involved in - you can find details on our engagement website.

www.engage.northernpowergrid.com

Alternatively you can get in touch by email:
stakeholder.relations@northernpowergrid.com

Glossary

ANM - Active Network Management

— An operational technology solution to actively monitor network conditions and take action in real-time to change connectees access to the network - maintaining a safe and reliable network.

API - Automated Programming Interface

— A way of automating machine to machine communication and transfer of data.

CLASS - Customer Load Active System Services

— A network flexibility solution whereby the distribution network operator is able to lower the voltage in order to provide balancing services to the transmission network.

DER - Distributed Energy Resources

— Controllable assets connected to the distribution network, that either supply or demand electricity at any time - these include wind farms, solar farms, battery storage, biomass generators etc.

DFES - Distribution Future Energy Scenarios

— Distribution Future Energy Scenarios is an annual publication of a report and data sets setting out our view of decarbonisation scenarios across our region.

DSO - Distribution System Operation

— The term used to describe distribution network operators creating a much, smarter and more flexibile network that promotes participatory behaviour from energy users - resulting in a more efficient and economical network.

ESO - Electricity System Operator

— The centralised role held by National Grid, currently primarily responsible for managing the development and system operation of electricity transmission in Great Britain. ESO will transisiton to National Energy System Operator (NESO) and will become a public body. NESO will be responsible for coordinating all energy systems in Great Britain.

Flexibility

— Flexibility in the context of DSO refers to the flexible use of the distribution network, changing the timing and location of network usage. This can be achieved through a number of different mechanisms, including consumer flexibility, flexibility service providers, flexible connections or network flexibility solutions.

FSP - Flexibility Service Provider

— Any company or organisation, connected to our network, that can provide the capability to turn up or down their demand or generation in response to signals from the network operator.

ICCP - Inter Control-room Communication Protocol

— A standard for communication between the ESO control room and the distribution network operator control rooms, providing coordination of system operation between distribution and transmission networks.

LCT - Low Carbon Technology

— Products that produce less carbon than their traditional counterparts, and generally referring to consumer scale products. Reference to LCT often means eletric vehicles and heat pumps.

RIIO-ED2 - Revenues + Innovation + Incentives + Outputs Electricity Distribution 2

— The current framework used by Ofgem to regulate energy networks, specifically applied to electricity distribution for the second time covering the period April 2023 to March 2028.

LV - Low Voltage

— Refers to our service distribution level voltage of 230V or 415V.

HV - High Voltage

— Refers to the primary voltage level of our distribution network of 11kV.

EHV - Extra high voltage

— Refers to 33kV, 66kV and 132kV voltage levels that are utilised in some areas of our network.

NORTHERN POWERGRID®