DSO Performance Panel Submission 2024/25

SP Energy Networks | DSO

Contents

Glossary

Abbreviation	Name
ANM	Active Network Management
API	Application Programming Interface
CBA	Cost Benefit Analysis
CEM	Common Evaluation Methodology
CIM	Common Information Model
CMZ	Constraint Management Zone
COI	Conflict of Interest
DBP	Data Best Practice
DDSG	Data Digitalisation Steering Group
DER	Distributed Energy Resource
DFES	Distribution Future Energy Scenarios
DNOA	Distribution Network Options Assessment
DSI	Data Sharing Infrastructure
ECR	Embedded Capacity Register
ED2	RIIO-ED2
ED3	RIIO-ED3
ENZ	Engineering Net Zero
FES	Future Energy Scenarios
FSP	Flexibility Service Provider
GSPs	Grid Supply Points
I&C	Industrial and Commercial

Abbreviation	Name
ICCP	Inter-Control Centre Communication Protocol
IFMP	Integrated Flexibility Management Platform
INZAC	Independent Net Zero Advisory Council
LAEP	Local Authority Energy Plan
LANIT	Local Authority Network Insight Tool
LAs	Local Authorities
LCRCA	Liverpool City Region Combined Authority
LCT	Low Carbon Technology
LHEES	Local Heat and Energy Efficiency Strategies
LMS	Load Management Schemes
LoMS	Local Management Scheme
LTDS	Long Term Development Statement
NDP	Network Development Plan
NESO	National Energy System Operator
NEWID	North-East Wales Industrial Decarbonisation Plan
NPV	Net Present Value
RESP	Regional Energy Strategic Plan
SPD	SP Distribution
SPM	SP Manweb
SPT	SP Transmission
T3	RIIO-T3

Foreword by our leaders

This year marked a major step towards Net Zero: the introduction of the CP2030 target, the creation of the National Energy System Operator (NESO), and over 50% of GB electricity generated from renewables for the first time. These milestones depend on a reliable, coordinated distribution network with enough capacity – making our DSO activities critical. These have been supported by our formal separation of DSO and DNO functions, which has boosted independent decision-making and transparency. Our Head of DSO, Nia Lowe, now reports directly to me and briefs the board twice a year, ensuring strong oversight and accountability. I'm proud of the wide-ranging DSO achievements we've delivered, guided by our stakeholders, and I look forward to building on them in the years ahead.

Nicola Connelly, CEO

Welcome to our 2024/25 DSO Performance Panel Submission. We've worked hard over the year to deliver significant benefits for our customers and stakeholders and have taken on board feedback from the 2023/24 Performance Panel and Ofgem, including governance, benefit quantification and data quality:

– We enabled connections up to 10 years earlier, delivering £542m in benefits, and unlocked up to £400m in benefits by leading industry work to reform network planning for storage.

– We engaged 40 Local Authorities (LAs) and more than 20 regional governmental, transport, and industrial bodies to support their decarbonisation plans, including over 2,000 optioneering studies for public EV and heat decarbonisation. We collaborated with DNOs, TOs, NESO, and GDNs to deliver capacity for these stakeholders.

– We deferred 108.5MW of reinforcement using flexibility services, delivering £3.9m in benefits. We used flexibility for storm response for the first time, restoring 15,000 customers 40 hours ahead of repair. We moved to month ahead markets and removed minimum thresholds, increasing registered assets to 33,394 from 3,577. We are also tendering for a new flexibility platform.

– We installed 5,391 LV monitors (compared to 1,377 last year) and used these with smart meter data to unlock capacity, generating £9.4m in benefits. We've expanded our roll out plan to reflect greater than expected benefits.

– We implemented a robust data quality management solution and internal processes to improve data quality. For example, we increased the validity of data within our ECR from 41% to 85%. We published data quality assessments, risk assessments, and methodologies, improving transparency.

– We published our first Conflict of Interest Management Plan and DNO:DSO Operating Framework.

Behind the scenes, we built a comprehensive DSO benefits framework with Frontier Economics to track, quantify, and monetise these achievements. It means we can see what's working well, and what we need to improve. I want to thank our customers and stakeholders, and our DSO Panel and teams for making this year such a success.

Nia Lowe, Head of DSO

Chapter 1 – Delivery of DSO benefits

Our DSO function delivers clear, tangible and lasting benefits.

Responding to Ofgem's DSO Performance Panel feedback, we have introduced an industry-leading benefits framework to identify, track, quantify, and monetise the benefits of our DSO activities. Led by Frontier Economics, the framework combines our expertise in network planning, development, operation, and market enablement with their specialist knowledge in economic appraisal.

Key developments over 2024/25

1. Introduced a comprehensive benefits framework designed in line with established economic appraisal methods, such as the HMT Green and Magenta Books, and standard industry methodologies, such as the Common Evaluation Methodology (CEM). Our framework is the first in the industry to monetise and report 'net' DSO benefits as standard.

2. Independent calculation by Frontier Economics of the benefits of our DSO activities, employing the benefits framework.

3. Established common principles with the other DSOs to guide the measurement and reporting of DSO benefits, sharing best practices introduced by our framework to shape the industry's approach.

4. Published our benefits framework to promote transparency and help raise industry standards in the quantification of DSO benefits, including Phase 3 of the DSO Collaboration Forum.

Next steps for our benefits framework

1. We will use the benefits calculated by Frontier Economics to prioritise our efforts, improve ongoing projects, and inform the development of nascent activities.

2. We will continue to use the framework to track and measure the outputs and achievements of all DSO activities throughout RIIO-ED2.

3. We will continue to share best practices from our industry-leading framework with other DSOs through established ENA working groups and bilateral collaboration.

Benefits values are presented as net benefits, in-year and across the long-term. Costs incurred this year to deliver the benefits naturally impact the short-term view and as such the long-term benefits present a more accurate view of accrued benefits.

The net benefits of our DSO activities in 2024/25

In-year:
£10.0m

Rest of ED2:
£50.5m

In the long-term:
£563.1m

frontier economics

Introducing our benefits framework

An industry-leading framework

Independently developed by experts: Our benefits framework, developed by Frontier Economics, identifies, tracks, measures, and quantifies the benefits of our DSO activities. It will guide our decisions and actions to deliver maximum value for customers and the wider energy system.

Robust and accurate: The framework aligns with public sector appraisal best practice, such as HMT Green and Magenta Books, sector-specific appraisal tools, such as CEM, Ofgem Guidance, and the common principles agreed by the DSO Collaboration Forum (available here).

Leading our peers: By capturing such a comprehensive range of DSO activities, applying rigorous assessments, and embedding industry best practice (such as net benefits and aligning to HMT standards), our framework sets a new benchmark and is already aligned with Phase 3's current thinking, which other DSOs are planning to deliver next year.

Transparent and open to scrutiny: Our framework methodologies, assumptions, and inputs are published on our website.

The components of our framework

1. DSO activity categorisation

Our DSO activities are categorised into four groups, to combine activities that produce similar customer outcomes and benefits. This approach maintains a clear link between activities and benefits, avoids double-counting, and presents a clearer picture of our impact:

Enabling capacity for customer connections, growth, and decarbonisation: using flexible connections (Part 1) and improving our network planning and development outcomes (Part 2).

Helping customers to participate in a flexible energy system: increasing participation in flexibility markets and using flexibility to defer reinforcement.

Operating a reliable and decarbonised network: improvements in day-to-day network operation and coordination with NESO.

Providing easy access to accurate and timely data: information sharing activities that reduce whole systems costs and increase transparency.

2. Assessment levels

In line with the Green Book's Social Cost Benefit Analysis (CBA), our framework expresses the value of benefits in monetary terms wherever possible. However, sometimes we can't do this due to factors outside our control. Our benefits framework therefore uses three levels of assessment:

Full benefit quantification: wherever possible, we quantify and monetise the societal and consumer impacts of our activities in line with HMT Green Book best practice and industry-standard methods. This is explained in the next box.

Quantitative KPI measurement: where quantification is not possible due to the unavailability of robust evidence or credible proxies, we seek to track the delivery of benefits via quantitative KPIs (e.g. accuracy of our DFES forecasting).

Qualitative link to benefits: where quantitative KPIs are not available, we describe benefits qualitatively and link these to activities via logic models.

3. Benefit quantification

Where full benefit quantification is possible, we employ the Green Book's Social CBA and relevant industry-standard methods to monetise benefits robustly. For each benefit, we use an activity-specific approach underpinned by common principles:

Reporting net benefits: an industry first at time of writing, the focus on net benefits (e.g. reinforcement savings minus flexibility costs) ensures alignment with the HMT Green Book and raises the industry bar.

Measuring in-year activities: the benefits we report focus on the activities undertaken in 2024/25 only. This is particularly important for 'multi-stage' activities, like setting up flexible connections. By consistently focusing our assessments on single stages of the activity, we align with Ofgem guidance and ensure our submissions do not double-count benefits across years.

Employing a sensible counterfactual: we used a 'do nothing' counterfactual to quantify DSO benefits, adjusting it in cases where fully stopping activities would create unrealistic costs or benefits.

These principles result in an accurate and robust assessment of benefits and better decisions across our DSO activities.
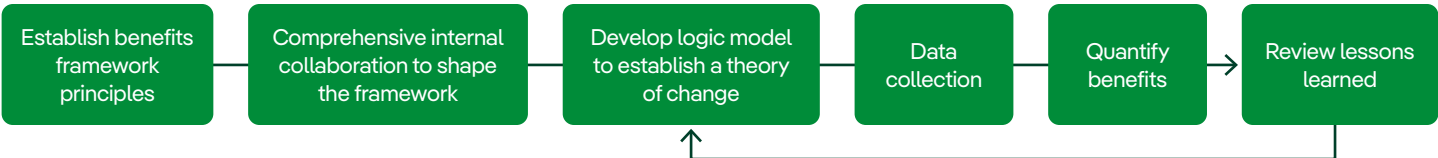
4. Benefit attribution

Our framework considers societal and consumer impacts. These capture changes to overall social welfare and include both electricity sector impacts (e.g. network capital costs, whole system operating costs), and non-electricity sector impacts (e.g. electricity supply interruptions). Consumer impacts include both elements of electricity bills (e.g. charges and wholesale costs), and any impacts not included in bills (e.g. faster connections of low carbon technologies).

Excluding benefit transfers: Other DSOs have previously quantified benefits for specific stakeholder groups, such as Flexibility Service Providers (FSPs). While we discuss the benefits to these groups qualitatively, we do not quantify or monetise them. This is because it is not HMT Green Book compliant and, where benefits to specific groups result from transfers between them, increases the risk of double counting. We therefore exclude these transfers from our quantified benefits to present an accurate assessment of our impact.

We've advocated for the inclusion of this approach in the DSO Collaboration Forum's common guidance.

5. Implementing the framework

Our benefits framework was implemented in 2024/25 through close collaboration with Frontier Economics. It is a structured and repeatable process – we will continue to use it to measure and quantify benefits for the rest of ED2. We will also use it to prioritise our efforts, improve ongoing projects, and inform the development of nascent activities. We will keep it up-to-date to reflect relevant industry changes.

Establish benefits framework principles → Comprehensive internal collaboration to shape the framework → Develop logic model to establish a theory of change → Data collection → Quantify benefits → Review lessons learned

Overview of quantified benefits

The table below shows the DSO activities which we have quantified in monetary terms. Further activities were also tracked using quantitative KPIs and qualified benefits, explained above. All activities are explained within this submission, and on our website.

ACTIVITY	Unit	KPI	BENEFITS In-year	Rest of ED2	Long-term
Benefits in 'Rest of ED2' refer to April 2024 – March 2028	Unit	KPI	In-year	Rest of ED2	Long-term
Enabling capacity for customer connections, growth, and decarbonisation					
Enabling connections			Net benefits to society		
Total number of contracted customers via LMS/Technical Limits	# / MW	27 / 1,045	£0.0m	£36.8m	£541.5m
Total number of contracted customers via Reformed Network Access Rights	# / MW	15 / 226			
Total number of contracted customers via Coordinated Solutions	# / MW	13 / 556			
Total number of contracted customers via other flexible connections (e.g. CMZs)	# / MW	36 / 512			
Using LV monitoring to defer reinforcement			Net benefits to society		
Number of LV monitors installed	#	5,391	(£0.8m)	£2.6m	£9.4m
Strategic Optimisation Team activities			Net benefits to society		
Number of LAs engaged with (% of LAs engaged by Strategic Optimisation Team)	# / %	40 (100%)	£1.3m	£1.3m	£1.3m
Other Engagements with key regional stakeholders	#	21			
Number of LAs supported with LCT optioneering	#	22			
Number of sites at which LCT optioneering (EVs) was conducted	#	1,966			
Number of sites at which LCT optioneering (heat pumps) was conducted	#	74			
Number of sites at which LCT optioneering (solar PV) was conducted	#	36			
Helping customers to participate in a flexible energy system					
Contracting flexibility for reinforcement deferral			Net benefits to society		
Number of new sites identified for which flexibility could provide value and tendered for flexibility for the first time	#	5	£3.0m	£3.2m	£3.9m
Number of new sites for which flexibility was successfully contracted	#	11			
Total peak flexibility tendered in any year across sites (% tendered in-year)	MW / %	444 (67%)			
Total peak flexibility contracted in any year across sites (% contracted in-year)	MW / %	73 (33%)			
Flexibility being delivered within the year	MWh	320			
Gross cost of deferred capital expenditure within the given year across all sites	£m	34.74			
Developing markets for flexibility at the distribution level			Gross benefits to society		
Stakeholder events	#	11	£0.0m	£0.1m	£2.4m
Bilateral surgeries	#	109			
Flexibility providers participating in auctions in the regulatory year	#	9			
Assets registered on Piclo	#	33,394			
Flexibility locations available for tendering	#	40			
Domestic flexibility available through platform provider	MW	325			
Operating a reliable and decarbonised network					
Using flexibility to manage planned outages			Net benefits to society		
Number of sites identified for which flexibility could provide value, and tendered for flexibility	#	16	£4.4m	£4.4m	£4.4m
Number of new sites for which flexibility was successfully contracted	#	16			
Flexibility tendered within the year across all sites, for delivery in any year	MW	146			
Flexibility contracted within the year across all sites, for delivery in any year	MW	24			
Flexibility being delivered within the year	MWh	14			
Using flexibility to manage unplanned outages (during Storm Darragh)			Net benefits to society		
Flexibility contracted within the year	MW	20	£2.1m	£2.1m	£2.1m
Using LV monitors to predict faults before they occur			Net benefits to society		
Number of potential faults predicted in 2024/25	#	154	(£0.0m)	£0.1m	£0.5m
Number of predicted faults repaired (% of potential faults identified in 2024/25)	# / %	129 (84%)			
Number of predicted faults with repair plan carried over into 2025/26 (% of potential faults identified in 2024/25)	# / %	25 (16%)			

The benefits of our DSO Activities

Enabling capacity for customer connections, growth, and decarbonisation.

This activity group is split into two parts: offering flexible connections (Part 1) and improving our network planning and development outcomes through optimising network utilisation and whole system solutions (Part 2). The following logic model outlines the theory of change for the benefits stemming from the 'Part 1' activities in the box below. The next page shows the high-level logic model for the 'Part 2' activities in the box below.
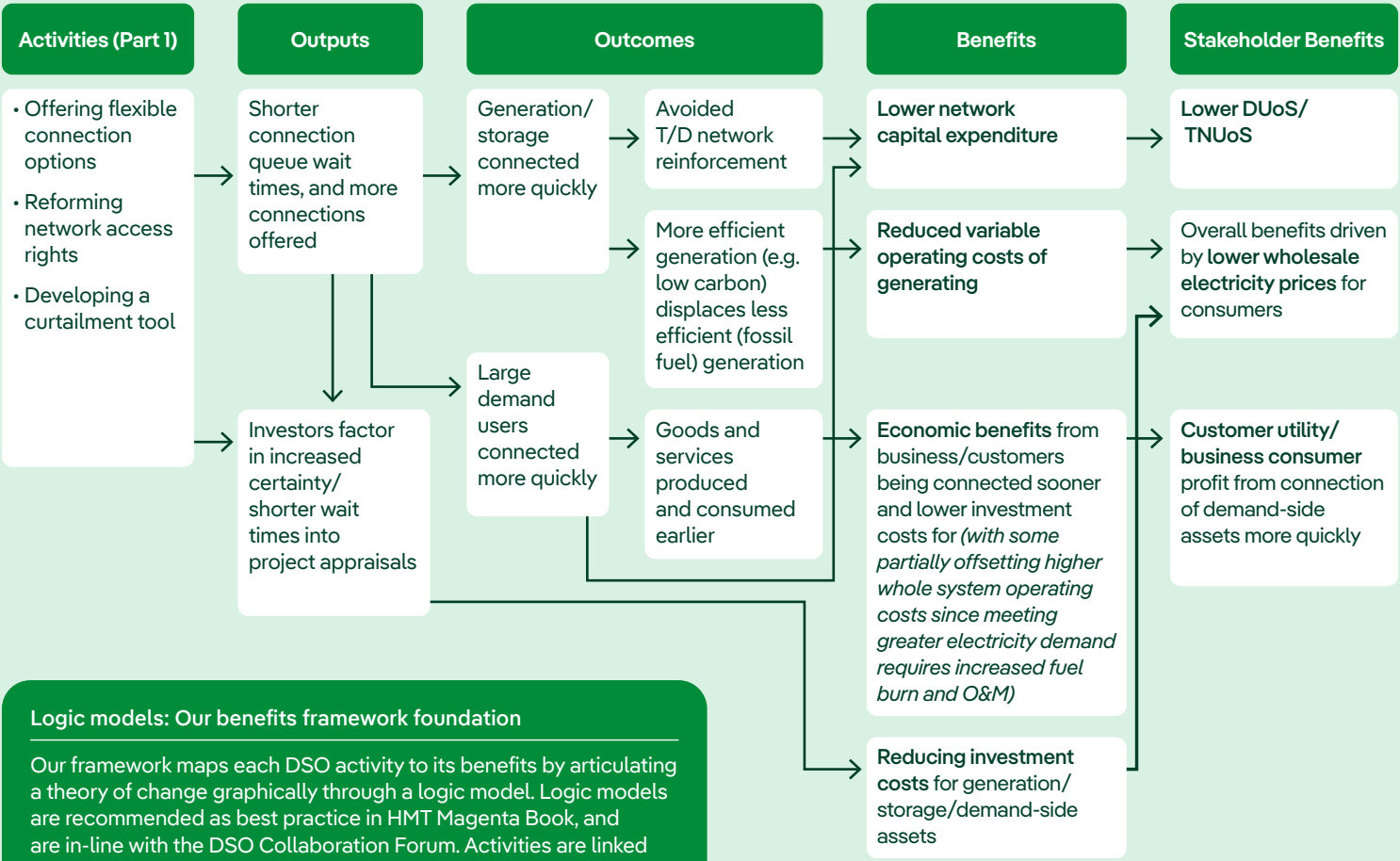
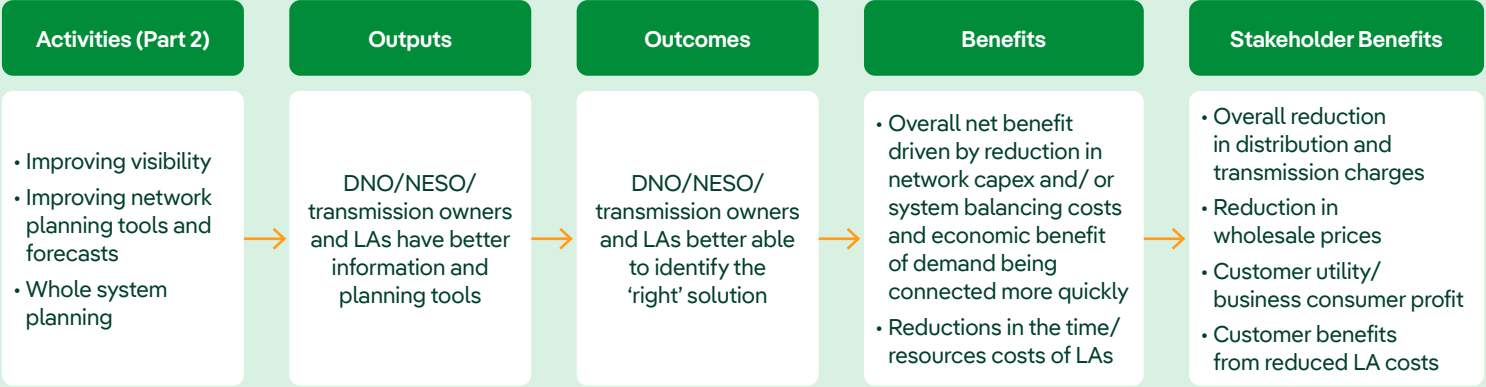## Activities

Part 1: Offering flexible connections

We offered flexible connections to 91 customers for a total capacity of 2,339MW under the following schemes:

– Load Management Schemes (LMS) in SP Distribution (SPD) and the establishment of Technical Limits at the T/D boundary in SP Manweb (SPM) to accelerate a total of 27 customers (1,045MW). Coordination with TOs helps distribution customers connect and operate in transmission-constrained areas.

– Reformed network access rights for 15 storage customers (226MW). Read more on our work leading the reform of connection arrangements for storage customers in the case study below.

– Other coordinated solutions, a combination of LMS, Technical Limits, and T/D interface, for 13 customers (556MW).

– Other flexible connection schemes, including Active Network Management (ANM), for 36 customers (512MW).

– We developed our Constraint Identification and Curtailment Assessment Tool to improve the accuracy of customer curtailment forecasts compared to standard industy tools and so enhance outputs to stakeholders.

Part 2: Optimising network utilisation and whole system solutions

– We installed 5,391 LV network monitors, compared to 1,377 last year. We used smart meter data to supplement voltage data from these monitors to unlock additional capacity from existing assets.

– We supported 40 LAs, 12 Regional Government Bodies, and three transport providers develop their decarbonisation plans through our Strategic Optimisation Team (e.g. conducted over 2,000 LCT optioneering studies, developed Local Authority Network Insight Tool (LANIT)).

– We developed and improved the accuracy of DFES forecasts (e.g. improved spatial proxy data, developed a method to forecast district heating demand, embedded local decarbonisation plans).

– We improved network planning tools, such as the Engineering Net Zero (ENZ) Platform, to increase forecasting accuracy.

– We worked with other TOs, DSOs, and NESO to develop coordinated whole system solutions and to improve planning data exchange between DSO and NESO. Case studies of our whole systems collaborations are in Chapter 4.

– We installed two environmental sensors on poor performance 33/11kV transformers to trial safely increasing capacity.

Activities (Part 1)	Outputs	Outcomes		Benefits	Stakeholder Benefits
• Offering flexible connection options • Reforming network access rights • Developing a curtailment tool	Shorter connection queue wait times, and more connections offered	Generation/storage connected more quickly	Avoided T/D network reinforcement	Lower network capital expenditure	Lower DUoS/ TNUoS
			More efficient generation (e.g. low carbon) displaces less efficient (fossil fuel) generation	Reduced variable operating costs of generating	Overall benefits driven by lower wholesale electricity prices for consumers
	Investors factor in increased certainty/shorter wait times into project appraisals	Large demand users connected more quickly	Goods and services produced and consumed earlier	Economic benefits from business/customers being connected sooner and lower investment costs for *(with some partially offsetting higher whole system operating costs since meeting greater electricity demand requires increased fuel burn and O&M)*	Customer utility/business consumer profit from connection of demand-side assets more quickly
				Reducing investment costs for generation/storage/demand-side assets	

Logic models: Our benefits framework foundation

Our framework maps each DSO activity to its benefits by articulating a theory of change graphically through a logic model. Logic models are recommended as best practice in HMT Magenta Book, and are in-line with the DSO Collaboration Forum. Activities are linked to outputs through the immediate and observable effects, then to changes that result as outcomes that ultimately generate benefits. To demonstrate the depth of our benefits framework, this first model is shown in full, with the others summarised. All full logic models and the underlying details are on our website.

Activities (Part 2)	Outputs	Outcomes	Benefits	Stakeholder Benefits
• Improving visibility • Improving network planning tools and forecasts • Whole system planning	DNO/NESO/ transmission owners and LAs have better information and planning tools	DNO/NESO/ transmission owners and LAs better able to identify the 'right' solution	• Overall net benefit driven by reduction in network capex and/ or system balancing costs and economic benefit of demand being connected more quickly • Reductions in the time/ resources costs of LAs	• Overall reduction in distribution and transmission charges • Reduction in wholesale prices • Customer utility/ business consumer profit • Customer benefits from reduced LA costs

Outputs

Offering flexible connections
− More connections offered with reduced completion timescales.

Optimising network utilisation and whole system solutions
− More accurate planning tools and more, higher-quality input data to feed these. Other parties (e.g. NESO) also benefit from this data.

Outcomes

Offering flexible connections
− More efficient generators displacing existing higher cost and emissions assets in wholesale power markets.
− Earlier production and consumption of goods and services from assets that would have connected later.
− Avoided network reinforcement investments.

Optimising network utilisation and whole system solutions
− Our teams, NESO, and TOs can identify and realise the optimal solution to current and future network needs.
− LAs and other government bodies are better able to find the optimal solutions to meet decarbonisation plans.

Societal Benefits

Offering flexible connections
− Earlier reduction in wholesale costs from less expensive generation displacing more expensive assets.
− Lower network capital expenditure arising from the avoidance of network reinforcement to enable connections.
− Earlier realisation of benefits from the consumption and production stemming from earlier connection of demand-side assets (e.g. housing).
− Earlier realisation of reduced investment costs stemming from a reduction in the cost of capital, driven by a lower uncertainty investment environment.

Optimising network utilisation and whole system solutions
− Reductions in system and network costs. This includes lower network capital expenditure stemming from less reinforcement, a reduction in wholesale market costs as a result of less flexibility being used, and a decrease in system balancing costs.
− Earlier realisation of benefits associated with quicker connection of smaller-scale demand.
− Reduction in time and resources required by LAs in the development of decarbonisation plans and LCT optioneering.

Stakeholder Benefits

Offering flexible connections, Optimising network utilisation and whole system solutions
− Reduced domestic and Industrial and Commercial (I&C) customer bills through lower network charges, stemming from reduced network capital expenditure and wholesale costs driven by the displacement of less efficient assets on the market.
− Increases in profits for I&C customers and in welfare for domestic customers from being able to connect technologies, assets, and industrial equipment more quickly.

Optimising network utilisation and whole system solutions
− LAs benefit from lower resource and time expenditure that is ultimately passed on to domestic customers.

Quantification

The table below presents the net benefits to society of enabling capacity for customer connections, growth, and decarbonisation.

Net benefits to society of activities aimed at enabling capacity for customer connections, growth and decarbonisation	In-year Apr 2024 – Mar 2025	Rest of ED2 Apr 2024 – Mar 2028	Long-term Apr 2024 – Variable
Enabling connections	£0.0m	£36.8m	£541.5m *(Dec 2067)*
Using LV monitoring to defer reinforcement	(£0.8m)	£2.6m	£9.4m *(Mar 2085)*
Strategic Optimisation Team activities	£1.3m	£1.3m	£1.3m *(Mar 2050)*
Total net benefits to society	**£0.5m**	**£40.7m**	**£552.2m**

2024/25 prices. The complete benefit assessment and limitations are published here, including the step-by-step methodology. In addition to above benefits, our 2024/25 initiatives to accelerate connections were calculated to support £1,526m in long-term wider economic benefits, assuming displacement effects do not negatively impact the overall effect of our activities which would reduce benefits.

Case Study: Employing LMS, ANM, and Technical Limits to unlock capacity

We have implemented a strategic program at 91 sites, leveraging LMS, Technical Limits, and other flexible connection technologies, which unlocked about 2.3GW of additional capacity and enabled quicker and lower-cost connections by up to 10 years.

To address constraints on network capacity, high costs, and delayed decarbonisation, our intervention strategy centred on:

– Whole systems solutions (e.g. enabling customers to connect before transmission reinforcement).

– Flexible connections (e.g. ANM and LoMS enabling quicker connections).

– Stakeholder collaboration (e.g. project developers, TOs).

We delivered the following results in 2024/25:

– 2.3GW of capacity enabled across diverse DER projects.

– Connection times cut by up to 10 years under flexible arrangements, helping achieve CP2030 targets.

– Estimated long-term net benefit of £542m (£234m from avoided reinforcement, and £307m from reduced wholesale market costs) and wider economic benefits of £1,526m.

Case Study: Leading the reform of storage network access rights

In 2024/25 we continued to lead the industry workgroup on connection reform for distribution electricity storage, coordinating with all distribution network licensees, TOs, and NESO, to deliver two main outputs:

1. We developed and implemented consistent enduring network access rights for distribution storage. This reduces the investment required for new storage and the risk of triggering unnecessary reinforcements, provides storage customers with a common experience, and improves network capacity utilisation. Across GB distribution, over 62GW of connections were offered by December 2024, with 28GW accepted. This was independently assessed by Oxera to deliver up to £400m benefits across GB by 2040, and helps to more efficiently enable CP2030.

2. We implemented new planning rules on assessing the impact of distribution energy storage on the transmission/distribution interface. This coordination with transmission reduces the risk of triggering reinforcements, and make more efficient use of existing capacity.

Case Study: Course-correcting our LV monitoring approach and unlocking LV network capacity

In 2024/25, we enabled faster, lower-cost decarbonisation by using network visibility to release additional capacity on our LV network. Our approach to network visibility combined:

– Real-time LV substation monitoring – 5,391 LV monitors installed this year (against our original ED2 total of 14,102).

– Smart meter data analytics – aggregated, anonymised half hourly usage profiles to model and predict demand and generation at customer and feeder levels.

These two data sources inputted to our full network connectivity model to help identify capacity availability.

In 2024/25, these activities delivered:

– 3GW of additional LV capacity unlocked.

– £9.4m benefits from avoided or deferred reinforcement costs.

We also used this new visibility to improve our fault prediction and restoration, reducing the number and duration of interruptions and realising £0.5m in benefits. This is in addition to our justification for our ED2 monitoring programme – learnt from Spanish networks. This year we used this learning to course-correct our plan – we've increased the number of LV monitors we plan to deliver in ED2 to 15,000, given their supply reliability benefits. This addition was partly funded by efficiency savings we made in our monitoring programme.

Helping customers participate in a flexible energy system

Activities	Outputs	Outcomes	Benefits	Stakeholder Benefits
• Contracting flexibility to defer network reinforcement • Developing flexibility markets	More MW flexibility available at a lower cost to the DSO and NESO due to increased competition and liquidity	Deferred network reinforcement due to flexibility	Overall reduced network capex *(partially offset by higher variable costs of generation)*	Overall reduction in distribution and transmission charges

Activities

– We used flexibility to identify cost-effective opportunities to defer reinforcement in line with our Decision Making Framework. We procured flexibility for the first time at five new sites.

– We deepened flexibility markets by removing barriers for market participants (e.g. removing minimum size requirements), enhanced data and information sharing (e.g. publishing our Market Prospectus), guided existing and prospective providers (e.g. through 109 bilateral surgeries and four public events), and gave additional confidence we are a neutral market facilitator (e.g. published our DNO:DSO Operating Framework and Conflict of Interest Management Plan).

– We supported distribution customers to participate in transmission markets by working closely with NESO (e.g. furthering MW Dispatch), moving to monthly markets, and including non-exclusivity clauses in our flexibility contracts to avoid market fragmentation.

Outputs

– Greater volumes of flexibility are available to address constraints – we now have 28 providers with 33,394 assets registered on our flexibility platform (up from 3,577 last year).

– Reduced unit cost of flexibility services.

Outcomes

– Increased deferred network reinforcement. In 2024/25 we deferred 109MW of reinforcement using flexibility services.

– Increased volumes of flexibility procured by us and NESO. In 2024/25, the volume of flexibility we contracted was 73MW, and the flexibility delivered increased from 250MWh to 320MWh.

Societal Benefits

– Lower network capital expenditure from the time value of deferred reinforcement. We also took account of costs, for example those, stemming from the additional volume of flexibility used.

Stakeholder Benefits

– Lower operating costs for us and NESO

– Reduced domestic and I&C customer bills from reduced network expenditure and lower operational costs experienced by us and NESO (and passed onto customers).

– Greater revenue for flexibility providers and DERs from greater use of flexibility services.

Quantification

The table below presents the net benefits to society of contracting flexibility for reinforcement deferral.

Net benefits to society of activities aimed at helping customers participate in a flexible energy system	In-year Apr 2024 – Mar 2025	Rest of ED2 Apr 2024 – Mar 2028	Long-term Apr 2024 – Mar 2083
Contracting flexibility for reinforcement deferral	£3.0m	£3.2m	£3.9m
Total net benefits to society	£3.0m	£3.2m	£3.9m

2024/25 prices. The complete benefit assessment is published here and presents a detailed, step-by-step methodology.

In addition to the benefits shown above, our 2024/25 market development activities generate £2.4m in long-term benefits. The value is not included in the table above as it is only calculated as a gross benefit – we did not estimate costs, given the wide range of diverse market development activities delivered this year.

Operating a reliable and decarbonised network

Activities	Outputs	Outcomes	Benefits	Stakeholder Benefits
Operational flexibility, improved network visibility and control, ICCP link	DSO/NESO have a wider set of tools to manage the network and avoid conflicts	• DSO/NESO able to identify and use lowest cost intervention more often • Fewer interruptions to supply	Overall lower system balancing costs and/or benefits from reduced interruptions to supply	• Overall reduction in distribution and transmission charges • Lower wholesale prices from lower curtailment • Reduced outages

Activities

– We used flexibility to manage planned and unplanned outages (e.g. restored 15,000 customers 40 hours sooner).

– We improved the monitoring and control of our network by installing 1,380 Network-Controllable Points, and used LV monitor data to predict 154 potential faults before they happened, to intervene on them.

– We linked the SPD and NESO control rooms via the existing SPT Inter-Control Centre Communication Protocol (ICCP) link.

– We used our near-time forecasting platform, PRAE, which provides demand and generation forecasts across different timeframes (e.g. 4 days ahead, monthly, annually).

– We progressed an Energy Management Platform that will support our Control Room with operational actions to manage the distribution network (e.g. managing voltage control and communicating with DERs).

Outputs

– Improved ability to operate the network and enhanced visibility of lowest-cost solution to address network constraints.

– Fewer conflicts in DSO/NESO operational actions.

Outcomes

– Improved ability to predict faults and reduce the number and duration of interruptions.

– Increased efficiency in the use of flexibility to reduce the number and duration of interruptions.

– Enhanced efficiency in flexibility dispatch and curtailment, including by NESO.

Societal Benefits

– Private and economic benefits linked with reduced interruptions to electricity supply.

– Reduction in system balancing costs from the more efficient and coordinated use of curtailment and flexibility, leading to a reduction in operating costs.

Stakeholder Benefits

– Reduced domestic and I&C customer bills stemming from the reduction in operating costs, passed to customers through DUoS/BSUoS charges, and from reduced wholesale costs, arising from reduced generators' operating costs.

– Wider economic benefits and avoided financial losses to domestic and commercial customers stemming from reduced interruptions to electricity supply.

Quantification

The table below presents the net benefits to society of operating a reliable and decarbonised network.

Net benefits to society of activities aimed at operating a reliable and decarbonised network	In-year Apr 2024 – Mar 2025	Rest of ED2 Apr 2024 – Mar 2028	Long-term Apr 2024 – Variable
Using flexibility to manage planned outages	£4.4m	£4.4m	£4.4m *(Mar 2085)*
Using flexibility to manage unplanned outages (during Storm Darragh)	£2.1m	£2.1m	£2.1m *(Mar 2085)*
Using LV monitors to identify faults	(£0.0)	£0.1m	£0.5m *(Mar 2070)*
Total net benefits to society	**£6.5m**	**£6.6m**	**£7.0m**

2024/25 prices. The complete benefit assessment is published here and presents a detailed, step-by-step methodology.

The benefits of the first two activities don't increase over time as the benefits are specifically tied to outages that occurred in 2024/25. The cumulative benefit is expected to increase year-on-year as we repeat these activities, but they are not quantified in this table as they will occur in future years.

Providing easy access to accurate and timely data

Activities	Outputs	Outcomes	Benefits	Stakeholder Benefits
Activities to share data, and improve its quality, accessibility, and reach for stakeholders	Generation/ storage/demand customers more likely to locate in areas with less congestion	Generation/storage/ demand customers are connected more quickly at sites requiring less reinforcement/ flexibility use	Overall reduction in network capex and/system balancing costs, variable costs of generation and economic benefit from connecting businesses and households	• Overall reduction in distribution and transmission charges • Reduction in wholesale prices • Access to more goods and services more quickly

Activities

- We continued to share network planning datasets (e.g. Long Term Development Statement (LTDS), DFES, 44 DNOAs (up from 14 last year), flexibility-related data (e.g. market prospectus data), and introduced new datasets to support LV network visibility (e.g. smart meter data).
- We improved data quality by making targeted improvements (e.g., increasing the validity of the ECR from 41% to 85%) and complying with industry standards.
- We improved data accessibility through engagement, the provision of additional datasets (e.g. GIS shapefiles matching LA boundaries), and of actionable insights (e.g. flexibility feature page).

Outputs

- Improved siting and specifications decisions made by connection customers using more and improved data.
- Increased stakeholder trust in our processes and decisions through greater transparency.

Outcomes

- Shorter connection timelines for connecting customers and reduced need for reinforcement from siting decisions that avoid congested areas.
- Reduced use of flexibility to connect customers or curtailment of other users from improved siting decisions.

Societal Benefits

- Reduction in network capital expenditure linked to a decrease in the need for network reinforcement.
- Reduction in system balancing costs from more efficient use of curtailment (by our teams and/or NESO) and flexibility (by our teams), and the resulting reduction in generation operating costs.
- Reduction in variable operating costs of generation that arise from quicker connections and a lower use of flexibility.
- Economic benefits from connecting commercial and residential assets more quickly.

Stakeholder Benefits

- Reduced domestic and I&C customer bills stemming from the reduction in network capital expenditure and operating costs, passed to customers through DUoS/BSUoS charges, and from reduced wholesale costs, arising from accelerated connections of efficient assets and reduced curtailment costs.
- Increased welfare for domestic customers through the faster connection of technologies that provide the services they require.

Quantification

- Connecting customers in less congested areas benefits society overall. However, it's unclear exactly how customers and stakeholders would have behaved without access to this data – such as where they might have chosen to connect instead. Because of this uncertainty about their decisions, we can't precisely measure the benefits linked directly to providing data and information.

Chapter 2 – Data and information provision

Data lies at the heart of our DSO activities, driving insights and informed decision making to support our core functions: planning and network development, network operation, and market development.

Beyond driving the evolution of our capabilities, comprehensive, accessible, and high-quality data also plays a crucial role for our customers and stakeholders, supporting a wide range of use cases. Recognising the diverse ways in which different stakeholders derive value from data, in 2024/25 we created opportunities for our Open Data Team to personally collaborate with over 220 stakeholders to improve our data practices, support their individual needs, and to develop new and improved offerings.

Key highlights from 2024/25

Expanding data provision

1. Introduced 10 new datasets to our Open Data Portal, creating 31 new data tables and bringing the total number to 98 – all with accompanying metadata available for stakeholders.

2. Developed and published new time-series data including smart meter data, sharing it with our stakeholders and incorporating it into our network planning and operational processes.

3. Expanded the provision of network models creating dedicated access for our 40 LAs, and improving our flagship LANIT platform, supporting over 2,000 LCT optioneering assessments.

Improving the accessibility and availability of data and insight

1. Created data visualisations designed in line with user needs, creating five interactive dashboards which provide insights into our data and enable stakeholders to better and more quickly understand it.

2. Built on a comprehensive range of usability features such as advanced filtering, common formats aligned with industry standards, and Application Programming Interface (API) access – enhancing user experience and facilitating user feedback and engagement.

3. Introduced guidance to support users in accessing and navigating the Open Data Portal by creating videos and materials to support their needs.

Enhancing data quality, security and neutrality

1. Used our new data governance policies and tool – Informatica – to better understand our data quality and develop improvement plans, assessing 73 published data tables and generating quantifiable results, which we have released for stakeholders.

2. Improved data quality and transparency through our embedded Data Triage Framework, publishing method statements and risk assessments detailing how datasets are compiled and reviewed before publication.

3. Improved the quality of our most-used data, for instance increasing the completeness and validity of the data within our ECR, with validity increasing from 41% to 85%. These improvements are part of our continued enhancement programme.

"Step by step process is extremely easy to follow and not time consuming."

Open Data Portal user about our new tutorial feature

Adapting to our stakeholders' needs

Recognising the importance of comprehensive and accurate data for our customers and stakeholders, we place engagement at the centre of our efforts to enhance data and information provision.

Over the past year, we increased the breadth and depth of our engagement, expanded our engagement channels, and gathered feedback across five customer and stakeholder touchpoints.

Examples of our expanded engagement include:

– Engaged 1,000 Open Data Portal users and received 42 responses via our Stakeholder Survey, hosted on our Open Data Portal, seeking insights on how we can improve our data and information provision.

– Received and facilitated 186 individual requests for access to our data, which were fulfilled in conjunction with subject matter experts, with an average turnaround time of 11 working days.

– Improved our data request and feedback forms both of which allow users to request additional datasets and provide feedback on our data.

– Implemented an enhanced feedback functionality on our data tables, allowing users to give insights on how our data can be improved down to individual data points.

– Introduced the 're-use' function on our Open Data Portal, providing stakeholders with the opportunity to showcase how they are using our data and what benefits or value they have generated.

The feedback gathered via our engagement programme is regularly reviewed by subject matter experts across the business to transform it into actionable insight. The Open Data Team review all feedback and feed it into our quarterly reviews, which form the foundation of our plans to improve data accessibility and the provision of additional supporting information. We also conduct trend analysis on the datasets that are being requested and most utilised on the Portal, and use this to feed into the development of our annual roadmap.

Stakeholders have directly influenced a wide range of improvements, which are presented across the following sections and case studies.

42 *survey responses turned into action*

186 *individual data requests fulfilled*

Expanding data provision

Enhancing and improving data, information, and insight has been a priority over the past year.

Our internal and external stakeholders need a growing range of historical and time-series datasets, and network models supported by complementary information that will maximise the value of their analysis. In 2024/25, we made significant progress in expanding the amount of data available on our portal.

Collecting and sharing data

We introduced 31 new data tables across 10 datasets. Examples of these datasets, which include and build upon the DSO Baseline Expectations, are showcased in the table below.

	Planning and network development	Network operations	Market development
Newly added datasets	• Aggregated smart meter data at feeder and substation level • Smart meter penetration by postcode, census area, and transformer/feeder • Aggregated LV monitoring data • Network Development Plan (NDP) including headroom data	• GIS shapefiles for LAs • Historical faults data • SPM technical limits	• Flexibility market prospectus data (e.g. requirements and deferred reinforcement) • Single digital view of connections by project view and Grid Supply Point (GSP) pipeline • Flexibility bids, competitions and registered assets
Examples of existing datasets	• DFES • Secondary network data, including transformer ratings • LTDS	• Transmission generation heat map with ECR overlay • Network flow: power, current and embedded generation • Operational forecasting	• Curtailment data by generator type, GSP and region • Distributed generation heat maps: primary and grid • Embedded generation by type

The examples in the table above illustrate some of our newly-added datasets, showcasing our ongoing efforts to expand data provision – particularly in areas such as LV network monitoring, smart metering and GIS shapefiles, described in more detail below.

LV network data: As part of our Network Visibility Strategy, we're implementing an extensive LV monitoring rollout programme to ensure comprehensive data coverage, which is essential for delivering DSO functions. Over 2024/25, we installed 5,391 monitors, taking us to 46% coverage. With this increased network visibility, we have published LV Monitoring aggregated data, providing information on each secondary transformer's monthly aggregated capacity utilisation and power factors. Further information on how we are leveraging LV monitoring data to support DSO functions can be found in Chapter 5.

Smart meter data: We have published smart meter data covering Wirral and Ayrshire. This is aggregated to 5 or more MPANs to ensure customer privacy. We will expand smart meter data provision across our licence areas, prioritising regions where LV monitoring has identified network constraints. This enhances opportunities for us and our stakeholders to model the relationships between LV monitoring and smart meter data. We have also published a new dataset showing smart meter penetration, broken down by substation, feeder, postcode, and census area.

GIS shapefiles: We expanded our data provision directly in response to LAs' needs by supplying tailored GIS shapefiles relevant to their specific geographical areas. Leveraging third party datasets, such as the Ordnance Survey Boundary Line map, we've reconfigured our GIS shapefiles, eliminating the need for manual data requests and reducing the volume of data LAs need to process.

Stakeholders' decarbonisation plans: Additionally, not included in the above table, our Strategic Optimisation Team has continued to collect third party data by working closely with LAs to gather specific details on their decarbonisation plans. This includes, for example, the volume and location of EV charging infrastructure and other aspects of their Local Areas Energy Plans (LAEPs). More information is available in Chapter 4.

We have plans to continuously expand data provision. In 2024/25, we published our Open Data Roadmap, outlining our commitment to releasing 18 new datasets and visualisations aligned with our stakeholders' needs and regulatory framework. This includes datasets such as additional connections data and live outage data. Further details are available in our newly launched Data Roadmap, which was developed in response to stakeholder feedback and is available on our Open Data Portal for stakeholders' feedback.

Providing network models

Stakeholder access to network models supports an effective and efficient system transition through improved visibility and transparency. We have a broad definition of network models, including assets' physical locations (e.g. GIS shapefiles), connection parameters, network components and their configuration (e.g. connectivity models), and our LTDS which holds network parameters, grid models and development proposals.

We take a considered and careful approach to sharing network models, making lower-risk data available via our Open Data Portal and allowing users to extract actionable insight from other models via tools designed to meet specific use cases. Our LANIT, is an example of a tool that gives access to our connectivity model via a bespoke solution.

Our approach balances the benefits and risks of providing user access to network models, and reflects our industry leadership in ensuring data security while promoting transparency.

Providing access to network models through LANIT

LANIT is a tool that is specifically designed to support LAs in the development of their LAEPs and LHEES. It integrates datasets, including street-level visibility of our LV, HV, and EHV cables, substation capacities, and connection information. Leveraging this data, it satisfies critical needs such as enabling LAs to determine whether chosen locations for LCT connections can be accommodated, along with providing insights into the associated connection costs and required network reinforcement.

| Users enter a location for the required LCT connection. | → | LANIT provides a visual overview of all the cables, substations and properties for that location. Users can select these assets and view the estimated amount of available capacity at each location. | → | Users select the property and inputs the parameters of the LCT connection, including the capacity required and the type of LCT to be connected. | → | LANIT provides tailored results including the indicative connection and network reinforcement costs for any required works. |

LANIT was used by LAs, both independently and supported by our Strategic Optimisation Team, to produce over 2,000 LCT optioneering assessments in 2024/25. More information on our Strategic Optimisation Team can be found in Chapter 4.
In 2024/25, we enhanced the tool by:

- Updating parameters to enable LAs to conduct detailed power flow analysis for loads of up to 1MVA, enabling a clearer understanding of their impact on the electricity network.
- Improving the power flow analysis and cost estimation features, providing more accurate cost projections and available grid capacity.
- Introduced solar PV generation analysis for installations up to 200kW, enabling our users to assess a wider range of LCT connections.

Future plans: interoperability and shared infrastructure

Effective DSO and GB system operations require interoperable data and shared infrastructure to fully realise the benefits of an industry-wide ecosystem for distribution system operation. Through our leadership role in the ENA's Data and Digitalisation Steering Group (DDSG), and through active participation in industry-wide initiatives, we supported the development of this interoperable, shared data and infrastructure model. Our recent work converting our LTDS into the Common Information Model (CIM) format, delivered as part of the LTDS and standards and interoperability working groups, supports the goal of interoperable shared data.

To further support the development of shared infrastructure, we actively participate in the Data Sharing Infrastructure (DSI) Pilot – a Network Innovation Allowance funded project led by NESO and supported by other network operators. This initiative aims to demonstrate the exchange of network models in CIM format via dedicated infrastructure, which will be scaled and transitioned into a business-as-usual solution through our ED2 activities. Recently, we became the first operator to successfully connect to the DSI pilot – seamlessly sharing a simplified CIM model with NESO through our newly developed platform.

Improving the accessibility and availability of data and insight

Recognising the importance of accessibility to our users, this year we focused on ensuring easy access to our data, further enhancing the usability of our data, and providing actionable insight.

The number of registered users has grown from 401 in March 2024 to 2,354 as of March 2025. In addition to increased usage, we have experienced high user satisfaction, with 83% indicating they would recommend the Portal to others.

Ensuring easy access to our data

Datasets that were previously published in various sections of our website have now been consolidated into a single, central location on our Open Data Portal. This means stakeholders no longer need to search across different web pages; all data can now be accessed in one place via the 'Data and Information Sharing' tab on our company website and by accessing our Portal.

Building on the usability of our data

Our Open Data Portal is designed to align with the Data Best Practice (DBP) principles, with the aim of providing stakeholders with a consistent experience across the industry. Key features include:

Advanced filtering: We offer several ways of grouping and filtering datasets. For example, the Open Data Portal now groups datasets under themes (e.g. DFES, LTDS, Heat Maps), giving stakeholders contextual clarity, and offers sophisticated filtering that allows stakeholders to search via keywords or years.

Multiple formats: Our data catalogue is downloadable in multiple formats, including XLSX, CSV, XML, RSS, and more.

Metadata: We publish metadata for all datasets on the Portal. The creation, maintenance and use of metadata are governed by a dedicated policy aligned to the Dublin Core Metadata Standards, available to all our datasets through the Portal.

Tutorials: In response to stakeholder feedback calling for clearer guidance on use our Portal, we developed an accessible step-by-step

video tutorial to support users in exploring its functionalities. The guide navigates users through features, including how to search, view and download our datasets.

Common APIs: We offer all available datasets via a common API.

Re-use Function: We introduced new functionality on our Open Data Portal, enabling stakeholders to showcase how they are using our data and the specific benefits or value they've extracted from it. By sharing these insights, we create opportunities for other stakeholders to leverage use cases developed by other expert users, encouraging broader innovation and providing practical guidance to those needing additional support. We've already identified stakeholders eager to share their use cases and will begin publishing these examples during 2025.

Creating and offering actionable insight

We are proud of our progress this year in introducing new user-centric features that generate actionable insight for our stakeholders. These include:

Feature pages with interactive dashboards: Responding to stakeholder feedback, we developed feature pages with interactive dashboards, which transform raw data into simple visualisations and high-level tabular formats for user consumption. We introduced a total of five interactive dashboards to enhance datasets of particular interest to our stakeholders, including our DFES and flexibility market development data. These are described further in the case study below.

Visualisation of datasets: We continue to enhance our datasets with visualisation tools, such as heat maps, transforming raw data into actionable insights. For example, we collaborated with SP Transmission (SPT) to embed SPD and SPM ECR data onto the Transmission Generation Heat Maps.

Case study: Fostering flexibility market development through data-driven insight

Data, insights and features tailored to our flexibility stakeholders
In 2024/25 our Data and Flexibility Teams worked closely to understand flexibility providers' data requirements. Analysing the spectrum of data that map to flexibility services and analysing stakeholders' feedback, our teams identified and implemented a range of improvements tailored to user needs. These are summarised in the table below.

Flexibility providers' needs	Our actions in 2024/25	Benefit for flexibility providers
Historical views of flexibility data	We published three new tables, with a fourth upcoming: 1. Past competitions dataset 2. Past bids dataset 3. Aggregated registered asset volumes 4. Past dispatch data (released by Q2 2025)	Enables data-driven market engagement. Flexibility providers can assess past trends, benchmark their performance, and refine bidding strategies to maximise participation.
Greater insight into historical flexibility performance datasets	We began development of heatmap views to show current and past activity in flexibility competitions, bids and dispatches, and demonstrating the growth in flexibility over time.	Enhances transparency and market confidence. Providers can visually interpret market indicators, track procurement trends, and use insights to refine investment and participation decisions.
Greater insight into future flexibility opportunities, including expected volumes and prices	• Aggregated ENZ outputs into an interactive dashboard providing greater visibility of volumes, prices and locations of flexibility opportunities. • Published a new dataset, 'Flexibility Market Prospectus', along with a Flexibility Prospectus feature page, presented below.	Improves market visibility and decision-making. Stakeholders can access real-time and forecasted flexibility needs, enabling better strategic planning and more informed participation in procurement.

Interactive visualisation: Flexibility Prospectus Feature Page
In response to stakeholder requests for more user-friendly and dynamic data interaction, we developed the Flexibility Prospectus Feature Page – an interactive platform enabling stakeholders to explore flexibility opportunities. This was developed to coincide with the launch of our first Flexibility Market Prospectus, detailed in Chapter 3.

Launched in November 2024, and available separately for our SPD and SPM licences, this page aggregates multiple flexibility-related datasets from the Open Data Portal to offer these features:

– Heatmap of flexibility opportunities: Allows users to explore forecasted requirements by type across our network.

– Expected contract volumes and pricing forecasts: Provides detailed insights into anticipated procurement over the next three years.

– Interactive data functionality: Users can explore procurement volumes and contract value by locality, specific substation, and financial year.

– Graph view of flexibility procurement: Users can visualise estimated volumes of flexibility required over the entirety of ED2, broken down by year, voltage, and substation.

– Direct links to Piclo: Facilitates seamless navigation to live and upcoming flexibility tenders, enabling ease of participation for providers.

600 unique users have interacted with our five feature pages; 158 have accessed the flexibility feature page. We are continuing to develop feature pages and welcome feedback from our users and stakeholder to drive continual improvement.

Looking ahead, we will launch an additional feature page in Q2 2025 that will visualise flexibility competition, bid and dispatch data over time, enabling users to track market growth and trends.

Feedback from our users:

"Very good source of data, it is obvious that a lot of hard work has gone into this, thank you."

"The portal has lots of great data and is easy to navigate. It is helpful that you can see the datasets as tables and maps before downloading."

"A professional website with helpful tools and datasets inside."

"Good view of data and user friendly UI."

"Detailed description, huge available data, and helpful Heatmaps."

Enhancing data quality, security and neutrality

The quality, transparency, and neutrality of our data continue to be the foundation of our approach to data and information provision. At the same time, in the context of growing digitalisation and reflecting our role in ensuring network reliability, we must ensure that data security is a core consideration in all that we do. Driven by our stakeholders and evolving industry standards, in 2024/25 we have developed new data governance policies, rolling out our sophisticated data governance platform, and improving our data security practices.

Driving data quality improvements through our data governance framework

In 2024/25, we developed a robust data governance framework from source to end-use in accordance with stakeholder needs and industry standards. This framework, composed of an initial prioritised set of five policies, enables us to effectively manage data assets throughout their lifecycle, establishing clear standards and accountability for data ownership, quality, and security.

The policies were developed with external experts through 15 internal stakeholder engagement sessions across 11 business areas to ensure alignment with a broad range of operational needs. This framework is being supported by the roll out of Informatica – our data cataloguing tool – which provides a built-in quality module that enables us to integrate our new policies.

In 2024/25, we've been progressively cataloguing our data, prioritising datasets shared with stakeholders and those that enable us to support our customers.

Using Informatica, our Data Governance Team works with data owners to catalogue our data and to define quality rules across six dimensions tailored to each data asset's unique requirements.

These rules enable us to measure the quality of the data and the resulting scores, along with detailed reports, provide insights that inform whether our data meets data quality standards, and support us in developing targeted improvement plans. We are now actioning these plans to deliver improvements to our data.

Case study: Improving the quality of our Embedded Capacity Register

The ECR is a dataset which holds data about embedded generation connected or accepted to connect to our network. This data is valuable for stakeholders and can support them in answering a range of questions, including:

– Where is embedded generation connected and ready to supply energy or services?

– What embedded generation is being developed and when was the connection accepted?

– What is the breakdown of technology type in each geography?

This data can help developers, system operations and FSPs answer questions which enable them to plan, engage with and invest in the electricity system. With the Clean Power 2030 agenda, there has been an increased focus on the connection queue, to which the ECR holds insights, and this has further increased the level of interest in this register. Driven by increased usage of this data, and following stakeholder feedback, we have undertaken a systematic review of our ECR to improve the completeness, validity, and accuracy of the data which it holds. Working closely with the data owners, our teams reviewed the end-to-end process used to create the data for the ECR, and undertook a systematic review of the historical data, removing duplicates and increasing the completeness and validity. This enabled us to implement automation and remove the need for manual manipulation of the data and to build automated checks to ensure that errors or duplicates were not introduced.

The work also catalogued data sources, building strong relationships between the datasets, and increased the accountability of the data owners, ensuring that the data is actively and effectively managed. The automation of the process also ensured that the publication deadlines were met each month, and that quality checks were achieved. These improvements led to:

– Timely release of the live ECR dataset to ensure compliance with our licence condition.

– Cleanse of 199 duplicated and terminated sites from the register.

– Standardisation of terms and removal of all typos/anomalies in the categorisation of the data.

– Date Accepted data completion for sites increased by 500%.

– 85% reduction in missing "Energy Source" data and 91% reduction in missing "registered capacity" data.

– Improvement in validity of the data within the ECR. Cells holding valid data increased from 41% in June 2024 to 85% in January 2025.

The next phase of our ECR improvement programme involves identifying and leveraging additional data sources to enhance the accuracy of our ECR, ensuring all relevant sites are documented. We will engage with stakeholders to support this process.

Presenting our progress via Data Quality Assessments

Our progress in implementing improvement plans is captured by annual Data Quality Assessments, which measure the quality of our datasets across the six dimensions detailed in the table below. In 2024/25, we assessed 73 data tables on our Open Data Portal against three dimensions of validity, completeness and uniqueness – these assessments are accessible via our Open Data Portal. We are currently in the process of expanding our Data Quality Assessments to include the dimensions of timeliness, consistency and accuracy. Measuring data quality against the dimensions of accuracy and consistency is particularly challenging due to the inherent complexities in ensuring data correctness and uniformity across diverse sources and formats.

Driving data quality improvements through our data governance framework *continued*

Data quality dimension	Description	Example
Validity	Measures whether the values in a dataset are within the correct range or format.	The value must be greater than 1 or the value must be alphanumeric.
Completeness	Checks whether the cells in a dataset are filled or empty.	The "Postcode" column must be populated or the "Address" column cannot be blank.
Uniqueness	Measures how many values in a dataset are unique, with any duplicates lowering the score.	Values in the "Customer ID" and "Project Reference ID" columns must not be duplicated.
Timeliness	Measures whether a dataset is available within the agreed timeframe.	The refreshed dataset must be available every 24 hours to remain in line with the service-level agreement.
Consistency	Measures whether data remains the same across different instances.	The number of customer names must be the same in Dataset 1 and Dataset 2 or the values in the "Postcode" column must match in Dataset 1 and Dataset 2.
Accuracy	Measures whether the contents of a dataset are correct and represent the real world truth.	The "Customer Postcode" values are compared to postcodes published by Ordnance Survey, alongside confirmation that the customer resides at this address.

Ensuring the security, transparency and neutrality of our data

Publishing risk assessments

Our Data Triage framework allows us to assess the sensitivities of the data we publish, and develop controls and mitigations to balance risks prior to publication. Our framework is aligned with industry best practice and relevant standards such as the National Protective Security Authority (NPSA) Triage process and the ENA Data Triage Playbook. We continually monitor relevant frameworks to ensure our approach is aligned and remains fit for purpose.

In 2024/25, we produced risk assessments for all datasets on the Open Data Portal, where they have been published and are available for access. Each assessment evaluates potential risks related to Network security, Cyber, and GDPR and determines whether specific controls, such as redaction, are required prior to publication. Our risk assessments strengthen data security and provide transparency in how we manage sensitive data.

Publishing methodologies

This year we began publishing structured methodologies that provide users with a comprehensive overview of our approach to data collection, processing, and publication. Each statement provides visibility of our process to collate and publish data, control points and governance to ensure its accuracy, and the calculations and assumptions behind each dataset.

We collaborated with subject matter experts to develop methodologies for all datasets on our Open Data Portal, and these will be published during Q2 2025. Publishing these methodologies provides transparency, helping our stakeholders understand how our data is derived and facilitating informed discussion on how to use it and improve it.

Case study: Applying and shaping industry standards across data and information

We take an active role in applying and shaping industry standards and best practices, and believe that it is critical to ensure consistent, accessible user experiences across DSOs. Over the past year, we shaped these standards through leadership and participation across industry forums, whilst developing our own framework for assessing and improving our own compliance.

Shaping industry standards via leadership and collaboration
– In 2024/25, we led industry initiatives to increase data sharing and digitalisation of data across our Industry. Our Head of Network Data and Intelligence currently chairs the ENA DDSG, and our Data Governance and Open Data manager leads the industry-wide Shared Data Licence Working Group. As we were the first DSO to develop and utilise a shared data licence, we proactively shared our learnings with other operators – enabling their stakeholders to benefit from the improved speed of service this enables, and ensuring they receive a standardised level of service. Through the DDSG and our active involvement in all working groups, we have strengthened our own practices by learning from the industry. These learnings will be fundamental to our distribution business in the development of our ED3 business plan, and will ensure that our stakeholders and internal teams benefit from industry wide learnings and developments.

Adhering to Data Best Practice (DBP) Guidelines
– Whilst we are already complying with all 11 DBP principles, we continue to enhance our maturity against all of the principles and challenge our business to go further across all areas. In 2024/25, we developed a robust assessment framework in conjunction with external experts to measure our maturity against the 11 DBP principles, and enable us to set quantifiable targets that lead to increasing maturity levels. This framework uses interview-based evidence drawn from across the organisation to quantify our level of compliance across all outcomes of the 11 DBP principles, and also enables us to map our live data initiatives to each DBP principle, allowing us to forecast our progress in actively improving our data maturity. This framework will be used to form the basis of our ED3 Data and Digitalisation assessment for DBP compliance in Q3 2025.

Chapter 3 – Flexibility market development

At the centre of our transition to a more flexible, efficient, and cost-effective network has been our work to continue scaling up the procurement, dispatch, and integration of flexibility services.

This chapter outlines our progress over 2024/25 in delivering on our targets and spearheading nascent uses of flexibility, engaging with our stakeholders to develop our markets and make them more inclusive, and ensuring that flexibility delivers tangible benefits to our customers.

Key highlights from 2024/25

Meeting our flexibility targets

1. Tendered for 146MW of flexibility for reinforcement deferral, with 385MWh dispatched across both our licence areas.

2. £3.9m of benefits from deferred reinforcement this year.

3. Shifted to month-ahead markets, benefitting from real assets and a higher response rate from our providers, and leading us to accept and dispatch 100% of our bids.

4. Reached 28 providers registered on Piclo for our monthly tenders, comprised of 33,394 assets, of which 24 are signed up to contract.

5. Published our first Market Prospectus, dropped our participation thresholds to 0MW, and standardised prequalification requirements to open up market accessibility.

Standardising products, contracts and processes, and exploring nascent uses of flexibility

1. Utilised operational flexibility during Storm Darragh, restoring supplies to 15,000 customers, 40 hours earlier than via network repairs.

2. Tendered for Scheduled Utilisation on our LV network at three sites, informed by our Network Support Room, and based on smart metering and secondary monitoring data.

3. Led a number of industry workstreams and working groups, such as the V3 standardised flexibility framework agreement and network access rights reform.

4. First DSO to implement the V3 standardised agreement after co-leading its working group.

5. Plans or trials in place for demand turn-up, dynamic pricing, and secondary trading.

Enhancing stakeholder engagement and improving transparency

1. Extended our bilateral engagement to maximise market accessibility.

2. Hosted and attended 25 events in six different cities, engaging thousands of stakeholders.

3. Held 109 one-to-one surgeries with FSPs, leading to a number of new providers such as ev.energy and E.On contributing to tenders.

4. Engaged across energy vectors by working with gas and hydrogen networks, industrials, and the government via our North-East Wales Industrial Decarbonisation Plan (NEWID) project.

5. Launched our competitive tender for a new Integrated Flexibility Management Platform set to be awarded during Q2 2025.

Enhancing coordination with NESO for system optimisation

1. ICCP link in place in SPD, which is already sharing operational data.

2. ICCP link being implemented in SPM, scheduled to go live in October 2025 – in line with NESO's programme.

3. Begun delivering essential works to upgrade network primaries and GSPs on the 11kV and 33kV networks as part of REPOWER, utilising DERs for system restoration.

4. Collaborated with NESO to develop MW Dispatch on our network.

Meeting our flexibility targets

We have a clear and structured plan to deliver ED2 flexibility targets, address any gaps, and ensure the realisation of flexibility benefits through focussed actions and measurable progress.

Moving to month-ahead markets

We are proud of the step change in market engagement, and our shift to month ahead markets. As a result of this, we are seeing much more market liquidity and higher quality bids. As a result, we are having more success contracting and dispatching flexibility services. This is because the shorter market timeframe provides greater certainty to providers and us as the buyer.

We are making much greater use of the flexibility we contract: We dispatched 100% of flexibility we contracted in 2024/25, up from 44% in 2023/24. This reflects that more assets are operational and ready to be dispatched when we need them.

Our dispatches are more successful: We are getting an 83% response rate to our dispatch instructions in 2024/25, up from 11% in 2023/24. This reflects the increased certainty that closer to real time markets bring – providers have greater certainty how they'll be operating in a month's time.

More flexibility providers: 15 more flexibility providers signed up to contract than in 2023/24 (from 9 to 24). A larger, more diverse pool of market participants that ranges from small scale battery storage to industrial demand response participants.

Number of assets registered year-on-year: Increased from 3,577 to 33,394 in 2024/25. For example, 971 EVs in 2022/23 to 27,000 in 2024/25.

Contracted and dispatched flexibility performance

ED2 Year	Percentage of bids contracted	Percentage of contracted bids dispatched	Volume of dispatched flexibility
Year 1 (23/24)	44%	11%	250MWh
Year 2 (24/25)	100%	100%	**385MWh**

Status of assets registered on Piclo

ED2 Year	Assets in development	Operational assets	Total
Year 1 (23/24)	1,273	2,304	3,577
Year 2 (24/25)	1,336	32,058	**33,394**

While our previous legacy contract operating model yielded higher volumes of accepted bids, because of the longer timescales that providers were procuring over there was a significant gap between accepted bids, contracted bids, and ultimately dispatched flexibility. Previously, many providers overestimated how many of their assets would be operational by the time it came to delivering the flexibility they had initially agreed. The move to the shorter-term model, allowing only operational assets to participate, has increased the reliability of our tendered flexibility services in comparison to longer-term contracts and increased the volume of operational assets registered on Piclo, reflected in the tables. By offering providers more certainty over which assets they would have available to dispatch, 8/8 of our providers accepted and dispatched their bids against only 4/9 for the 2023/24 delivery period, and we contracted and dispatched 100% of our accepted bids.

Our success in procuring and dispatching flexibility services has allowed us to manage our network constraints in a number of areas, addressing capacity challenges and reducing our need for expensive infrastructure upgrades. Our increased use of flexibility services in 2024/25 has delivered tangible system and customer value – from higher dispatch rates, to accelerated outcomes and £3.9m benefits from deferred reinforcement.

"The month-ahead market allows us to participate with a much shorter delay, creating more value for consumers while responding to the short-term flexibility needs at SPEN. We consider the addition of month ahead to be a very positive addition to the DSO flexibility landscape."

Pelle Jacobs, Axle Energy

Increasing FSP participation

Flexibility allows us to optimise existing network capacity, lowering costs for our customers and enabling a more adaptive energy system. While we have experienced an increase in market participation this year, our ambition is to continue facilitating growth in the depth and liquidity of our markets, and therefore our overall contracted volumes. The key activities we have used to achieve our contracted and procured flexibility and to further develop the market to deliver on our ED2 requirements include:

Shifted to month-ahead markets
This year, we took a new approach and successfully launched our month-ahead market, tendering for a total of 146MW of flexibility with 385MWh dispatched across both our licence areas. The shift to shorter-term tendering cycles has been a major step forward, leading to much higher levels of dispatch and more providers signing up for our tenders, bringing our total to 28 providers with 33,394 assets registered on the Piclo platform. Looking ahead, we will:

– Develop higher levels of automation for tenders for greater efficiency.

– Monitor participation to refine the month ahead model and explore week and day-ahead tenders to serve stakeholders who want shorter-term markets.

Published our first market prospectus
Short and long-term insights provide stakeholders with visibility on our future flexibility requirements and how our markets are developing, enabling certainty in their investment modelling and planning. To provide this and to support our move to a shorter-term market, we published our first Market Prospectus. This is in addition to our ongoing publication of our service requirements through our procurement statements. The Market Prospectus gives:

– Summarised, clear flexibility needs with volumes and locations.

– Clear linkage to our Open Data Portal providing granular requirements and tools that allow participants to understand the opportunities based on their asset locations.

– Planned developments in our market model such as shorter-term procurement and automation.

We sought feedback on our first Market Prospectus, and will be publishing an updated version this year which incorporates improvements based on the first release. From then on, we will continue to publish the Market Prospectus as an annual document, improving market confidence, transparency, and offering insights all the way through to 2028.

Removed our participation thresholds
In response to stakeholder feedback, we have removed participation thresholds to make it easier for smaller flexibility providers, new entrants, and diverse asset types to participate in our markets. Previously, some aggregators or smaller generators were unable to meet the minimum MW threshold capacity of 0.05MW. By removing the minimum threshold capacity altogether, we have opened our markets to a wider range of participants, and increased market competition to drive more cost-effective procurement.

Additional standardisation
We aligned our prequalification requirements with other DSOs, and adopted the V3 standardised flexibility agreement. This has increased the accessibility of our markets to providers engaged in multiple regions and encouraged maximum consistency across procurement. Our stakeholders have told us that these changes are critical to ensuring our markets are easily-accessible.

"We are proud to be working in partnership with SPEN as one of their largest providers of flexibility services. We have found the DSO Team to be helpful and engaging through both the contract and service provision phases. We look forward to providing SPEN with further flexibility services in the future."

Steven Horton, Operations Analyst, AMP Clean Energy

"The team at SP Energy Networks supported us to get our assets registered on the platform and bid into the competitions. Bidding month ahead means that we can accurately forecast our available flex and doesn't tie us into a long-term commitment."

Watson Peat, Engineering Technical Services Manager, ScottishPower

"Working with the SPEN Flexibility Team to co-design and deliver their Month Ahead market has been a rewarding collaboration and an important step towards real-time flexibility procurement. Together, we developed new functionality for Piclo Marketplace tailored to SPEN's system needs, while ensuring the process worked for FSPs on the ground. Despite early challenges, close collaboration enabled us to overcome initial hurdles and achieve strong results – fulfilling over 75% of competitions and consistently growing across key metrics including FSP participation and bidded and accepted volumes. We're proud of what's been accomplished so far and excited to continue scaling the market – driving greater automation, deeper liquidity, and sharper price signals."

Adam Rostron, Lead Commercial Manager, Piclo

Enhancing coordination with NESO for system optimisation

We have committed to enhanced coordination with NESO, including data sharing, ICCP links, and commercial arrangements, to enable broader system optimisation.

Operational data sharing with NESO
To further enhance coordination with NESO and support broad system optimisation, we have strengthened our approach to operational data sharing to ensure greater alignment between transmission and distribution operations. Data we have shared with NESO over 2024/25 includes real-time visibility of power flows, voltage levels, circuit breaker status, and DER limit signals, supporting effective congestion management, flexibility dispatch, and system balancing. Beyond our existing data sharing channels, we have sought to enhance our data exchange capabilities with the development of a new ICCP link for SPM – explored further in <u>Chapter 5</u>.

Flexibility beyond distribution: wider system optimisation
Beyond our data sharing efforts with NESO, we have been exploring more innovative flexibility use-cases that go beyond distribution to unlock wider system optimisation.

Case study: Enabling Distributed Energy for System Restoration

As the energy system transitions towards decentralised, renewable generation, traditional 'Black Start' methods relying on large transmission-connected power stations to restore the electricity system after a National Power Outage are becoming less effective. Building on our successful Distributed ReStart innovation project (2020-2023), which demonstrated the role of distributed energy resources (DERs) such as batteries, wind and solar in system restoration, we are now delivering the findings of the project as REPOWER, a business-as-usual initiative.

REPOWER will create 'Distributed Restoration Zones' across Central, Fife, and Dumfries & Galloway, enabling bottom-up energisation during a National Power Outage via embedded generation at the 11kV and 33kV levels. Once fully implemented by 2027, REPOWER will be capable of restoring supply to around **one million people** and **25% of SPD demand within 24 hours**.

The project is currently in delivery, focussed on completing network upgrades, developing commercial frameworks for DER participation, and strengthening DSO-NESO coordination. REPOWER will reduce restoration costs, improve reliability, and open new revenue streams for DERs, and is a key step towards integrating distributed flexibility into core system operations.

Case study: MW Dispatch

We are progressing the MW Dispatch initiative to remove restrictions on customer participation in NESO markets within Constraint Management Zones (CMZs). In 2024/25, we have defined the project scope, developed the implementation plan, and laid the groundwork for system integration with NESO to coordinate dispatch actions and prevent counterproductive system responses. We finalised the approach for phase one, which will enable over 100MW of generation with unrestricted access to participate seamlessly across both DSO and NESO markets.

In parallel, we have advanced phase two planning, aimed at extending coordination to customers with restricted network access by integrating NESO's systems with our systems. Working with NESO we have designed standard tripartite agreements that will facilitate participation in the MW Dispatch market for distribution connected customers. This represents a critical step toward broader system optimisation, unlocking new market opportunities for customers while improving grid efficiency.

Standardising products, contracts, and processes, and exploring nascent uses of flexibility

We are taking a leading role in advancing flexibility market development by driving industry thinking and standardisation across products, contracts, and services.

Driving industry thinking and new standards

To spearhead the transition to a smarter, more developed energy system, it is essential that networks come together and share their knowledge. This year we have focussed on actively driving industry thinking in flexibility standardisation, with our key work discussed below.

Case study: Driving the V3 flexibility framework agreement

We co-led with NESO the working group that delivered the V3 standard flexibility agreement, helping establish a scalable and consistent contractual foundation for flexibility markets. Our Flexibility Procurement Manager helped facilitate complex negotiations to balance the needs of all DSOs and stakeholders, and review and amend the contract terms. We became the first DSO to adopt the V3 agreement, enabling the launch of our new short-term monthly tender model the following month, improving liquidity and accessibility for providers. The agreement ensures flexibility procurement can adapt to both short and long-term market needs and has set a benchmark for best practice, reinforcing our leadership in shaping inclusive flexibility markets.

Case study: Driving more transparent reporting of flexibility outcomes

We led the development of a new, more transparent approach to reporting the outcomes of flexibility procurement. We proposed clear links between each flexibility competition and the counterfactual solution it aimed to replace – improving sector understanding of where, why and how flexibility is being used and increasing market confidence. This approach, now adopted by Ofgem for 2024/25 regulatory reporting, also provides clearer visibility to stakeholders across the sector. We have also proposed expanding reporting to reflect alignment with the ED3 framework, which can be considered in the next round of consultation.

Beyond our industry leadership, we have continued to be active contributors to a number of other ENA working groups, with some key examples including:

Baselining: We are taking ownership of the modelling around baselining in the ENA working group. We've invited our stakeholders to surveys and focus groups to ensure their voice is heard, alongside embedding guides on expected profiling per technology type into our monthly operating model.

Procurement processes working group: As an early adopter of the pre-qualification agreement, we worked with Piclo to facilitate its integration onto the platform, and proactively supported the creation of the final pre-qualification questionnaire.

Stackability: We reviewed the use of standard flexibility products to streamline options for providers, supported Cornwall Insight's revenue stacking guidance, and contributed to an industry-wide barrier and solution analysis.

System Interoperability: Through the ENA Open Networks Programme, we are supporting the development of the Open ADR 3.0 API standard to improve interoperability of flexibility dispatch systems by contributing to technical specifications, stakeholder engagement, and project coordination.

Settlement: We have worked to support development of a new standardised settlement calculation methodology, now successfully implemented in the Flex Trading Platform to ensure consistent settlement processes for FSPs across all DSOs.

Longer-term thinking

We are looking ahead to shape longer-term thinking surrounding flexibility markets. We are supportive of Ofgem's published to appoint Elexon as the independent Market Facilitator and have engaged with the process to establish them as the Market Facilitator. We look forward to working closely with them to drive standardisation, coordination, simplification and growth in flexibility markets in our region and beyond.

Following industry standards

Building on last year's progress, we have continued our commitment to implementing the latest industry thinking in standardised flexibility processes, ensuring our markets are as easy as possible for providers to participate in, and enabling wider system benefits. As part of this commitment, we:

– Implemented standard industry Flexibility Services Agreement without any requirements for exclusivity.

– Procure flexibility in line with ENA Open Networks Products, such as Operational Utilisation and Scheduled Availability for our operational flexibility partnerships discussed below.

– Implement in full the current set of Open Networks Programme deliverables, including new product definitions, processes, and standardised flexibility qualification criteria.

Flexibility service provider V3 sign-ons
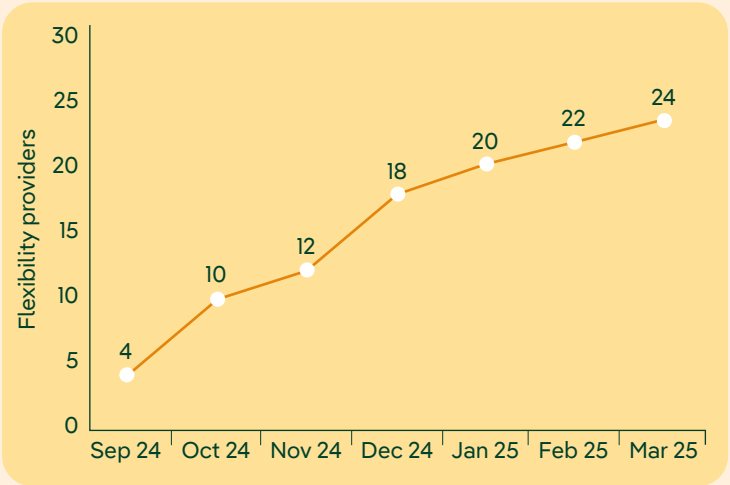
Diverse applications of flexibility

We are creating value through diversified flexibility offerings and tailored use cases that address evolving network and stakeholder needs.

Advanced flexibility use-cases

Our efforts to standardise flexibility market structures have laid the foundations for a more accessible and scalable flexibility ecosystem. However, alongside these industry-wide efforts, we are also actively diversifying our flexibility offerings to ensure we meet evolving network and stakeholder needs. This year, beyond our continued use of flexibility to optimise the delivery of planned reinforcement, we have also made strides in using operational flexibility for both planned and unplanned outage management to drive cost savings for our customers, and restore their supply quicker.

Maintaining supply during planned outages

We have driven the use of flexibility to manage operational requirements on our network this year. Collaborating with flexibility providers to use flexibility as a backup solution during scheduled works reduces the risk of power outages, and minimises disruptions for our customers. With our Control Room we now identify all planned outages for the year ahead, seeking to deploy flexibility where it represents a cost effective solution to manage risk. To date we have primarily engaged with large controllable plant providers (>10MW); however, we are actively exploring opportunities to involve intermittent generation and aggregated domestic response in future applications. We anticipate this use case will create continued market opportunities for providers of at least £60-£80k p.a.

Case study: Rapid deployment of flexibility for a planned outage at Flint

In October 2024, a planned outage at our 11kV Flint primary required a fast, effective solution to maintain supply reliability. Leveraging a pre-existing ENA standard flexibility services agreement with Conrad Energy, we were able to rapidly negotiate flexibility deployment for our customers, and secured 2MW of Operational Utilisation with an additional 5MW on standby within just seven days. This success highlights how operational flexibility has become an integral part of our outage management strategy, providing reliable and cost-effective solutions that minimise disruptions for thousands of our customers.

Storm Darragh – Increasing resilience during unplanned outages

In December, Storm Darragh caused severe disruption across our SPM licence area, leaving 24,588 customers without power, including 6,768 on the Priority Services Register. The Aberystwyth/Rhydlydan region was particularly affected, as both 132kV circuits supplying it from National Grid Electricity Distribution's network were cut off by tree-related faults, compounded by further storm damage elsewhere on the network. Faced with the prospect of extended outages and scheduled disconnections until repairs could be completed, our Control Room instead leveraged our pre-agreed operational flexibility services agreement with Statkraft. This partnership, secured ahead of time under the ENA standard flexibility framework, gave us rapid access to Rheidol hydro power station's generation capacity through agreed availability and utilisation payments.

With repairs expected to take over 24 hours, we dispatched two EHV synchronous generators at Rheidol, overcoming the communication challenges of a total power loss using satellite phones operated by field operators on the ground. Within just four hours, 20MW of generation was successfully delivered, enabling full restoration of supply to 15,000 customers by midday – nearly 40 hours faster than relying on network repairs alone. This response not only minimised Customer Interruptions and Customer Minutes Lost, but also safeguarded critical infrastructure, including the region's main hospital. Storm Darragh showcased the power of our multi-vector approach:

Commercial foresight: Pre-agreed contracts facilitated rapid response

Operational readiness: Control Room expertise in dispatching flexibility

On-the-ground coordination: Field Teams were essential in grid restoration

As severe weather events grow more frequent, we are expanding our operational flexibility programme and onboarding more providers to strengthen future grid resilience. Based on the success of this use-case, we are also identifying whether there are other areas of the network that are vulnerable in storms, and have available providers. We aim to set up any contracts from this by September 2025, in advance of the winter storm season.

Our nascent flexibility use-cases

As part of our flexibility programme, we have been actively exploring emergent and innovative flexibility use-cases to unlock additional value for our customers, enhance opportunities for present and future flexibility participation, and both prime and grow the market for the future. Key initiatives include our work to unlock the value our Network Support Room's data via LV flexibility tenders and trials, seeking to enable demand turn-up, as well as exploring secondary trading and dynamic pricing in collaboration with Octopus Energy and Kraken Technologies.

LV flexibility

In 2024/25, we made significant progress in developing LV flexibility as an emerging service, moving beyond assumptions and forecasting based on HV constraints and using real-time data through our Network Support Room to identify and manage congestion directly on the LV network. Building on the enhanced visibility offered from greater data flows from LV monitors and smart meters, we launched our first LV flexibility tenders in three high-overload-risk locations as trials, concluding in January 2025. Tendering for Scheduled Utilisation at these locations, these initial trials demonstrated market readiness and strong engagement, including bids from Axle Energy. This validated the feasibility of procuring LV flexibility, and signalled to providers the potential for further LV opportunities on our network, laying the groundwork for broader adoption.

Following this initial success, we expanded the scope of our work with tenders planned for 23 locations and further work to refine price signals to improve market response. We ran tenders at the beginning of March, with our required capacity ranging between 68kW and 300kW. We received bids across five substations, securing 100% of requested capacity at two out of five locations, 30% across two others, and 5% at the last. A second tender round was launched with a reduced price ceiling of £100/MWh to encourage price discovery and lower costs.

Having begun in April 2025, operational LV flexibility trials are currently underway, with scheduled dispatch events running to the 15th April. These trials are testing a range of flexibility types, including transformer, circuit, and combined flexibility, depending on site suitability and network configuration. By expanding both the number of trial locations and the incentives offered, we aim to accelerate market engagement and demonstrate the long-term viability of LV flexibility as a core part of our network management toolkit. This data-driven approach is designed to unlock new opportunities for flexibility providers, improve network efficiency, and has been shortlisted for the Utility Week Flexibility Awards 2025 under the "Best Use of Energy Data" category.

Our nascent flexibility use-cases *continued*

Demand turn-up

In response to stakeholder feedback, in 2024/25 we progressed demand turn-up from an early concept to service development, building on our 2022 trial with Octopus Energy. As part of this, we defined and prioritised four core use cases where demand turn-up can deliver system value, and identified commercially viable locations for trial:

1. Accelerating connections for generation across all voltage levels
2. Managing forecast generation overloads
3. Reducing curtailment in existing constraint zones
4. Supporting NESO through coordination of domestic demand turn-up

We are preparing to release demand turn-up as a market option, providing a new route for providers to support constraint management. Our trials aim to establish the value of demand turn-up, create opportunities for customers and flexibility providers, and unlock further generation potential.

Dynamic pricing

In 2024/25, we have also begun working with Octopus Energy and Kraken Technologies to explore dynamic network pricing as a new, nascent use case for unlocking flexibility value in real time. We have been developing a model that uses real-time network data to send localised price signals, nudging flexible demand (such as EVs and heat pumps) away from congested periods and toward times of greater network availability.

In phase one, we will trial dynamic prices at selected locations, such as Castle Primary Substation, where real-time telemetry data is available. By combining our network data with Kraken's asset and customer data, we are generating localised price signals that reflect real-time grid loading. These signals will be used to optimise flexible assets such as EV chargers and batteries, helping to reduce peak demand and alleviate congestion. Looking ahead, phase two will test how dynamic pricing can be combined with local flexibility markets, enabling us to trigger flexibility dispatch automatically when congestion reaches critical levels.

Secondary trading

Our primary focus over the past year has been on developing our network functionality, essential for unlocking the wider use of flexibility for grid and system optimisation for our customers. While our priorities, driven by our stakeholder feedback, have been on enabling LV flexibility, demand turn-up, and dynamic pricing, we recognise the potential for secondary trading to improve market efficiency in the future. On top of an existing internal work plan to support the introduction of secondary trading, we are currently developing a policy statement on secondary trading which will be published before the 2024/25 DSO Performance Panel Assessment. With a focus on providing relevant operational data, defining trading parameters for customers, and developing an efficient approval process, the statement will clearly state the commercial mechanisms around trading that we will adopt as the market evolves.

Enhancing stakeholder engagement and improving transparency

We have made a step change in our approach to stakeholder engagement to enhance participation and address barriers, ensuring feedback directly informs actions and measurable outcomes.

Addressing key barriers and challenges

We recognise that continued stakeholder engagement is essential to understand and remove potential barriers to flexibility provider participation, central to our ambition of building open, transparent and accessible flexibility market. At the heart of our approach to stakeholder engagement has been the findings of the Oxera report, an independent assessment of the challenges faced by flexibility service providers in our region that we produced in 2022 in collaboration with a range of our flexibility providers and industry stakeholders, identifying similar themes and barriers as were noted in Ofgem's 'The Future of Distributed Flexibility' consultation.

The report's findings have been kept up to date with ongoing engagement to inform and refresh our understanding, and addressing the 19 barriers identified both at an industry and network-level has been an ongoing priority, with some of our successes to date shown opposite.

Identified challenge	What we did
Contract standardisation	We co-lead the working group to establish the V3 standardised flexibility framework agreement and were the first to adopt it.
Pre-qualification complexity	We contributed to the ENA working group and were an early adopter of the pre-qualification questionnaire to make it easier for FSPs to participate across multiple markets.
Revenue stacking challenges	We engaged in the stackability working group, supporting the publication of Cornwall Insight's revenue stacking guidance report and an industry-wide barrier and solution analysis, working toward DSO and NESO market alignment.
Limited customer opportunity-awareness	We worked to proactively contact prospective flexibility providers to make them aware of flexibility opportunities, and recently published our first Market Prospectus, outlining our future requirements.

"SPEN's customer engagement has been fantastic – the team has been supportive, available, and helpful. We look forward to continuing to work with the SPEN Flexibility Team."

Axle Energy

Our stakeholder engagement approach

To drive increased market participation, we need to understand the barriers that our stakeholders face and address them. We have engaged more widely, to educate and inform stakeholders of our requirements and how they can get involved. Embedding the Oxera report's insights into our approach, we have strengthened our stakeholder engagement strategy, resulting in the step change in our engagement this year. Built around four core pillars, we are ensuring our engagement can deliver measurable outcomes today, while preparing the market for tomorrow.

1. Breadth
Reaching a wide range of groups to gather insights from a diverse, representative portion of the sector:
a. **Hosted and attended 25 events** in 2024/25, engaging thousands of stakeholders.
b. Organised **three large conferences**, and **five dedicated flexibility webinars**.
c. Held events in or visited six cities, including Madrid, Glasgow, and London.

2. Depth
Delivering tailored, one-to-one engagement to support individual providers in navigating our markets and overcoming barriers:
a. Engaged with **16 unique stakeholder groups**, including generators, LAs and universities.
b. Held **109 one-to-one surgeries** with FSPs.

3. Proactive
Actively identifying and reaching out to new or underrepresented groups not traditionally involved in flexibility to expand the market and diversify participation:
a. Published **two detailed case studies/blogs** on our website.
b. Posted around **three social media updates per month** to engage wider audiences.

4. Forward-looking
Engaging emerging sectors to shape future use-cases and support whole system planning:
a. Engaging with government, hydrogen, storage and electrified industry through our **NEWID project**.
b. Conducted a workshop walking Liverpool City Council through flexibility services, leading them to be the first LA to sign up to Piclo.

Flexibility engagement highlights

Large-scale conference engagement – Our annual DSO Conferences are a highlight of our engagement. These conferences provided views into our general DSO strategy, a look into the year ahead, and a place to network with different aspects of our business. This year we also attended Octopus Energy's Flexible Futures conference in Madrid (27-28th March), seeking to raise awareness, unlock and accelerate the uptake of Flexibility across Europe. We were invited to present on the conference's panel session focusing on standardising flexibility products, and we highlighted key learnings from the UK in our journey to make flexibility more accessible through standardisation and simplification.

Additional conference presentation – This year we contributed to a number of other conferences to share insights and collaborate across the industry. A few examples of events where we had speakers presenting at include:
– NGED's Power Responsive Conference
– Piclo and ENWL's Flex Forum
– Future of Utilities Conference
– The Distributed Energy Show
– Octopus Energy's Flex Forum

Flexibility Webinars – Targeted at different types of FSPs, our aim is to maximise the amount of bespoke, relevant information we share to encourage participation. For example, our Autumn session was targeted at aggregators already familiar with the industry, where we provided key insights into the future of our markets, whereas our February Webinar focused on introducing flexibility to stakeholders that were new to the concept and required simpler explanations of potential opportunities and how they could engage.

One-to-one FSP engagement

We have been focussed on engaging directly with providers, to request their feedback, and to provide even more highly tailored updates than are possible through our webinars. We are proud to have listened to and addressed a range of individual stakeholder concerns this year. A few examples of our personalised approach to engagement are shown below.

FSP	Feedback	What we did	Outcome
ev.energy	ev.energy required further insight into how our month-ahead market aligned with their operations before they would participate in tenders.	We set up monthly calls with ev.energy, providing continued guidance on the market, API connectivity, and the V3 flexibility services agreement.	ev.energy finished signing the V3 agreement to successfully participate in one of our month-ahead market competitions, and were happy with the result.
e·on	As a new participant in flexibility markets, E.On needed support in understanding the viability of different market structures, and the business case.	We held tailored discussions with E.On to demonstrate the benefits of the month-ahead market and highlight its agility and flexibility compared to long-term contracts.	E.On successfully engaged in the month-ahead market, with their Head of Flexibility praising our customer engagement throughout the process.
amp	AMP, active participants in our legacy flexibility contract model, were initially unfamiliar with the shift to month-ahead markets and the implications of this for their legacy contract position.	We worked closely with AMP to integrate the month-ahead into AMP's operations and help get their team set up on Piclo.	AMP are now one of our most active participants in the month-ahead markets, and are taking part in a case study and webinar with us to demonstrate the success of the month-ahead model.
Ohme	Ohme sought further clarity on market participation requirements, particularly around our baselining methodologies.	We set up monthly calls with Ohme to receive their ongoing feedback, and established fixed baselining value for their EV assets following our discussions.	Ohme has since been a successful participant in our markets, and expressed how their participation was enabled by our proactive incorporation of their feedback.

Going above and beyond in our engagement

Beyond our programme of events and tailored bilateral engagement, we have taken additional proactive steps this year to broaden our engagement and identify new opportunities for market and system development.

Multichannel engagement to seek new FSPs

We recognise the importance of engaging proactively with prospective providers who are yet unaware of flexibility opportunities, or how to participate in the markets. A few examples of our work this year to increase our pool of prospective flexibility providers include:

– **Holding workshops for LAs** to showcase our flexibility services. A recent workshop in February 2025 successfully lead to Liverpool City Council being the first LA registered as a flexibility service provider on Piclo.

– **Engaging in email marketing** to promote our flexibility opportunities to wider audiences. This lead to ev.energy and Ohme registering to take part in our month-ahead tenders, and we have since signed multiple flexibility contracts with them.

– **Releasing our market prospectus**, leading to many previously unengaged providers to seek one-on-ones to learn about our opportunities, including E.on, Flexitricity, and Power On.

Cross vector engagement for flexibility market optimisation

This year, we also expanded our engagement beyond traditional flexibility providers to identify new opportunities for market growth. Through the NEWID project, we have been collaborating with stakeholders across electricity, gas, and hydrogen to understand how industrial and multi-vector demand could support future flexibility markets. Our work has involved collaborating with major industrial energy users to understand their flexibility needs and capabilities, shape future procurement strategies, and use this as an opportunity to see what we can drive in new flexibility markets. Further information can be found in Chapter 4.

"With industrial and commercial energy demand accounting for almost two thirds of total energy demand in North-East Wales, decarbonisation evidence generated from the NEWID project is extremely useful regional evidence to help inform NGET's T3 inputs."

Ben Haggerty, Head of Whole Systems Infrastructure Development & Delivery, NGET

Tendering for a new flexibility platform

With flexibility markets in our region maturing, and in alignment with feedback received from the 2023/24 performance panel, at the start of this year we acted on our plans by launching a competitive tender for a new Integrated Flexibility Management Platform (IFMP). The competitive tender has followed the Iberdrola Groups' global procurement model with clear, transparent requirements and opportunities for potential providers to participate. This platform will streamline the end-to-end procurement, dispatch, and settlement of flexibility services, addressing concerns about regional standardisation raised in last year's panel review. The IFMP tender, open to third party platform providers, software developers and other partners will deliver:

– Clear alignment with the ambitions of Ofgem and Elexon set out in their vision for the Flexibility Digital Infrastructure.

– A clear focus on interoperability with centralised industry services and flexibility market platforms, supporting standardisation across DSOs.

– Greater transparency in flexibility procurement, guaranteeing clear, auditable decision-making.

– Improved market accessibility, reducing entry barriers for new and existing providers.

– Automation of key processes, eliminating inefficiencies in bid evaluation, contracting, and settlement.

By ensuring the IFMP is aligned with industry-wide standardisation efforts, flexibility services will be procured, dispatched, and settled in a fair, efficient and scalable manner to ultimately deliver better value for our customers and the wider energy system. Importantly, to ensure our solution is future-proofed and delivers maximum value over time, we are tendering for a platform that is open to where the industry is going as a whole, not just what is needed in the present.

To achieve this, our tender was issued with 14 functional requirements, each representing one of the actions required to deliver flexibility. For each of these functional requirements we provided clear signposting of existing or developing industry standardisation and a requirement by vendors to incorporate these outcomes. We aim to award the tender during Q2 2025, with deployment expected within the same year. Our aim is to ensure the new platform is implemented with minimal disruption to FSPs, and that continuity in our month-ahead tenders is maintained.

While a clear focus has been on establishing a competitive tender for our new IFMP, we have nonetheless been committed to ensuring that Piclo Flex is as easy as possible for participants to use in the interim before our new platform is established. A key example of our ongoing collaboration to update our offering with Piclo is our recent development of automatic API functionality on the platform. Launched this year, data exchange is now automated between our internal tender requirements, published on our Open Data Portal, and the data necessary for our monthly tenders on Piclo.

"Piclo's dispatch and settlement process is straightforward and reliable, helping with revenue reconciliation seamlessly. Over the past two years, we've seen continuous updates – like faster settlement reporting and bulk-upload improvements – that have made the platform even smoother and more efficient."

Sudhanshu Jindal, Growth Ops Manager, Equiwatt

Chapter 4 – Options assessment and conflict of interest mitigation

We have a responsibility to ensure our network can meet customers' capacity requirements efficiently. These requirements are increasing as customers adopt EVs and heat pumps, coupled with growth in renewable generation and electricity storage to support them.

We have a structured approach to assessing network options:

– We consider all viable options, including flexibility, reinforcement, smart solutions, and energy efficiency (losses).

– We assess these options impartially and consistently by using data-driven models and industry-standard tools.

– We work with a wide range of stakeholders, including other network companies and sectors, from initial development of forecasts through to solution development.

– We're transparent about our process and outcomes – we publish what decisions we made and why we made them.

– We have strong governance – DNO vs DSO responsibilities are clearly defined and published, as is our approach to Conflict of Interest management. Our activities are represented at board level.

"NESO are working with SPEN, building on SPEN's stakeholder engagement and regional knowledge to build key regional insights for the RESP to ensure that the RESP best meets regional needs."

RESP Team, NESO

Key highlights from 2024/25

Robust and collaborative decision making

1. **£1.3m benefits** from working closely with our 40 LAs and key regional stakeholders on their decarbonisation plans. Activities included over 2,000 optioneering studies for public EV charging, heat electrification, and upgrading our LANIT tool. LANIT gives LAs the in-house capability to run instant network assessments for decarbonisation projects – an industry first.

2. Worked with NESO, TOs, and neighbouring DNOs on large strategic interventions. Includes projects in Edinburgh & South East Scotland, Liverpool City Region, Enterprise Cheshire & Warrington, Mid Wales and Forth Green Freeport, Net Zero North West, and North East Wales Industrial Clusters.

3. Up to **£400m GB-wide benefits** from delivering industry reform to resolve holistic network needs caused by high volumes of electricity storage. Led coordination across all network companies and NESO. Further details are in Chapter 1.

4. **£542m benefits** from accelerating connections. This includes coordinating with transmission companies to enable 1.6GW of distributed generation to connect despite transmission constraints. This enables customers to connect more quickly, and GB to benefit from their zero-carbon generation – further details are in Chapter 1.

Making impartial and transparent decisions

1. Published our first Conflict of Interest Management Plan, developed with our stakeholders. Stakeholders now have visibility of how we identify, assess, and mitigate conflicts of interest in delivering our DSO responsibilities, and know how to raise concerns.

2. Published our first DNO:DSO Operating Framework, developed with our stakeholders. Stakeholders now have visibility of the split of DNO and DSO responsibilities and interactions for delivering DSO roles, including for assessing network options.

3. Updated our Decision Making Framework. Stakeholders have visibility of how we make investment and flexibility decisions.

4. Published our DFES, NDP, and 44 Distributed Network Option Assessments (DNOAs), up from 14 last year. Stakeholders have transparency into our decisions and their rationale.

Robust and collaborative decision making

The Decision Making Framework is our process to assure our stakeholders that we are identifying and impartially, consistently, and accurately assessing all viable options to address network needs.

We consider all viable options to address network constraints and increase network capacity, including flexibility services, energy efficiency, network reconfiguration, dynamic network management, and reinforcement. We use the process on the next page to determine where, when, and how to intervene most effectively.

⊙ This structured and transparent Decision Making Framework is available in full to all our stakeholders here.

Evolving our Decision Making Framework in 2024/25
After engaging with our stakeholders, including our Independent Net Zero Advisory Council (INZAC) DSO panel, we updated and republished our Decision Making Framework to:

– Reference the division of responsibilities across our DSO and DNO functions in identifying and assessing options. While the Decision Making Framework explains the details of our decision-making processes, the DNO:DSO Operating Framework explains how these tasks are split between DNO and DSO teams. These two documents give customers and stakeholders confidence that we are using the most appropriate interventions, give flexibility market participants confidence that we are a neutral market facilitator, and bring transparency to our processes.

– Reflect changes to our flexibility procurement process to expand participation and coordination. These include launching our month-ahead market, reducing the minimum threshold to 0MW, ensuring fairer conditions with NESO, and delivering our new Framework Agreement. For more information, please see Chapter 3.

⊙ More information about our INZAC is available here.

Stage 1:
Forecasting
Identify the customer demand and generation growth that our network must accomodate out to 2050.

– Engaged all 40 LAs, three devolved governments, 12 regional growth deals (up from eight last year), three transport partnerships, and three industrial clusters (up from two last year) to capture their decarbonisation plans.
– Improved and updated our DFES based on the 2024 NESO FES, real connections data, and stakeholder data.

Output: Updated DFES.

Stage 2:
Network assessment
Identify where, when, and how much additional capacity we need to accommodate forecast growth.

– Ran a full network assessment for our entire network. We do this to identify new constraints, reprioritise existing intervention programmes, and reassess solutions where the constraint details have materially changed.
– This includes identifying all 43,000 looped services that need replacing in ED2, and the order to replace them (proactively unlooped >5,000 services this year).

Output: Network Scenario Headroom Report.

Stage 3:
Options assessment
Identify where flexibility services are technically feasible and identify other viable options.

– Used mathematical optimisers to identify the most economical solutions to resolving network constraints objectively and neutrally (see right).
– Partnered with other network companies, NESO, and government bodies to identify and develop cost-effective whole system solutions.

Output: Counterfactual solutions, ceiling prices, and requirements for flexibility tenders.

Stage 4:
Flexibility tendering
Tender for flexibility services to confirm their cost and availability as a solution.

– Our activities to enhance flexibility tendering are in Chapter 3.

Outputs:
– Tendered 146MW of flexibility in 2024/25, with 385MWh dispatched.
– Identified flexibility as an intervention at five new sites.
– Successfully contracted flexibility at 11 new sites, up from 8 in 2023/24.

Stage 5:
Intervention decision
Decide the solution to take forward and place contracts where the solution uses flexibility services.

– Published the outcomes of our investment decisions through our NDP and 44 DNOAs.

Output: We identified the optimal mix of interventions through the remainder of ED2, as detailed in our NDP. We also identified potential network constraints in the ED3 period, and are using this to progress detailed assessment and design of 85-120 reinforcement schemes.

Case study: Managing capacity constraints with flexibility and automation at Carrington/Fiddler's Ferry

During ED2 planning, we identified an emerging 132kV network constraint driven by demand growth including HS2. We used our ENZ Platform to forecast the magnitude and timescale of the constraint. We identified a combination of 16MW flexibility, monitoring, and automation as the optimal interim solution, saving £6m over ED2 compared with reinforcement. This year, we confirmed that our approach remains appropriate, notified the market of our flexibility needs for 2026-28, and progressed the automation and monitoring. With the cancellation of HS2, this is sufficient whilst we develop the optimal longer-term reinforcement for this area.

A consistent approach to assessing and valuing network intervention options

We have a consistent and objective evaluation process to identify the most effective network interventions using market-leading tools and industry-standard processes. This ensures impartiality and transparency, improves the quality of options assessment, manages conflicts of interest, and ensures that our options assessment is economical and efficient over the long term.

Consistency from our market-leading tools
We employ market-leading tools to consistently define network requirements and impartially identify intervention options.

Our ENZ Platform is how we identify where, when, and how much additional network capacity we need to accommodate forecast growth. It does this by running power flow analysis for our entire network for every half hour for every forecast scenario – 175,000 iterations across 150,000 circuits and 70,000 transformers. The input data includes real network data recorded by network monitors and smart meters, and stakeholder-endorsed forecasts. The underlying network model uses predictive learning to fill data gaps, rather than engineer assumptions which could be perceived to add bias.

The ENZ Platform contains a mixed-integer linear optimisation engine, which we use for assessing and selecting options (e.g. flexibility, reinforcement etc) for HV and LV interventions (which form the majority of our intervention decisions). It considers the parameters about each potential option (capacity delivered, capital and operating costs, lifetime) to determine the most economical combination, sequence, and timing of solutions to meet the required level of network capacity by minimising NPV over the long-term. It relies solely on quantifiable data to assess options. In summary, these data-driven tools ensure that our assessment is consistent and free from bias, providing stakeholders with confidence in the impartiality of our decision-making process. We have also improved the quality of our network assessment and modelling tools this year.

Consistency from our processes
These include:
– Using the industry-standard CEM tool to value alternatives to conventional network reinforcement. The CEM allows us to define a site-specific flexibility service ceiling price, which is a critical step in determining the most cost-effective solution.
– Valuing losses and energy efficiency options via our technical design assessments that model the losses in each transformer, overhead line, and cable in each half-hour. This bottom-up modelling approach enables us to fairly assess options to determine the most cost-effective solution.
– Taking a long-term view so our interventions are economical and efficient over the long-term. This includes our DFES going out to 2050, our ENZ Platform running network assessments out to 2050, and our Linear Optimiser resolving for NPV over the long-term. We also do sensitivity analysis, so we understand how interventions can be optimally sized to cover a range of future pathways.

The vital role of cross-sector engagement in our options assessment process

We collaborate across electricity sectors, energy vectors, industry partners, and LAs to explore whole system solutions to our stakeholders' decarbonisation challenges. Several teams are responsible for cross-sector engagement, including network planning, connections, and the Strategic Optimisation Team.

Together, our teams this year:

– Engaged all 40 LAs we serve, three devolved governments, 12 regional growth deals (up from eight last year), three transport partnerships, and three industrial clusters (up from two last year). We provided network insights and analysis, integrated their decarbonisation plans in our network forecasts, and assisted connection applications to reduce processing delays.

– Partnered with other network companies, users, and government bodies to identify and implement cost-effective, whole system solutions to network requirements (see case studies on the right).

– Developed the LANIT tool to enable LAs to independently conduct network assessments and submit connection requests for decarbonisation needs, supporting the development of LHEES and LAEPs through 196 tailored engagements. See Chapter 2 for more information.

– Supported 22 LAs (up from 11 last year) with public EV charging and heat electrification initiatives, providing costs and timescales for over 2,000 locations. In Fife, we supported a joint Scottish and Danish government heat decarbonisation project by identifying that a heat network would be a better solution than individual heat pumps.

– Supported Transport for Scotland, Transport for the North, and Transport for Wales to develop and implement their regional transport strategies.

– Worked with Highways England and Office for Zero Emission Vehicles to identify the network solutions required for ultra rapid charging out to 2050 at all six motorway services in our England area.

Informing our stakeholders' plans means we can leverage more value out of our network data and expertise, helping key stakeholders reach more informed decisions to benefit the regions we serve. Using established data and computational infrastructure, details on these stakeholder plans then flow into our DFES forecasts and network assessments, ultimately informing our network development plans. This early-stage cross-sector collaboration is integral to our Decision Making Framework, and provides the coordinated and timely capacity stakeholders need.

Case study: Supporting the establishment of RESP

We are supporting NESO in establishing its Regional Energy Strategic Plan (RESP). In 2024/25, we met with NESO over 25 times to guide them in understanding our DFES forecasting and network planning process. We are also sharing insights from our engagement with local stakeholders and aligning outreach efforts to minimise stakeholder fatigue.

Case studies: Developing efficient whole system solutions

Below are a few key examples from 2024/25 demonstrating how we collaborate with stakeholders to identify and implement whole system solutions.

North-East Wales Industrial Decarbonisation Plan

We partnered with Net Zero Industry Wales, Bangor University, gas utilities, NGET, and local industries to develop tailored decarbonisation plans covering 95% of North Wales' total industrial emissions. This initiative is the first-ever whole system collaboration to develop actionable and cost-efficient emission reduction plans tailored to specific industries. The partnership's initial results are presented in the recently published Cluster Plan. As part of NEWID, we are working with Wales and West Utilities to identify practical decarbonisation pathways (carbon capture and storage, hydrogen, and electricity) and assess their impact on electricity and gas networks.

Mid Wales

Electricity transmission and distribution infrastructure has been signalled as required required in Mid-Wales to facilitate economic growth, enable low carbon demand, and meet growing energy needs. We are working with the network companies, NESO and Welsh Government, among others, to establish network options to develop efficient network whole-electricity system solutions. This includes:

– Strategic collaboration: We held weekly meetings with NGET and NGED to conduct detailed optioneering and developed a Strategic Options Report for the 'PSNC' Accelerated Strategic Transmission Investment project, ensuring an integrated transmission and distribution solutions tailored to Mid-Wales communities.

– Technical optioneering: With NGED and NGET, we analysed long-term transmission and distribution needs, addressing future transmission capacity, enabling local decarbonisation through demand growth, and accommodating generation increases aligned with CP2030 targets.

– Comprehensive evaluation: We jointly assessed the cost, technical feasibility, and environmental impacts of multiple network options for the 'PSNC' project, currently focusing on nine transmission pathways coordinated with multiple distribution options, resulting in a thorough evaluation of 27 whole system solutions.

Mersey Ring

We are collaborating with key regional stakeholders, including the Liverpool City Region Combined Authority (LCRCA) and NGET, to plan essential upgrades to the North-South transmission network. These upgrades will enable increased renewable energy flows from Scotland and support long-term demand growth linked to decarbonisation and economic development in Merseyside. Initial collaboration ensures that LCRCA requirements are included in our development plans and NGET's RIIO-T3 Business plan. We have also started the optioneering phase with NGET, during which we are identifying and exploring cost-effective T/D solutions.

Edinburgh

This year we started developing integrated transmission and distribution network plans with SPT to address forecast capacity constraints. Of the nine GSPs that supply Edinburgh, four are projected to exceed capacity by 2035, and seven by 2050. Our collaborative planning will result in coordinated and efficient network infrastructure that supports long-term decarbonisation, economic growth, and Edinburgh's community and business needs.

Whole system strategic partnerships

We have strategic partnerships with key organisations such as the Energy Demand Research Centre, Energy Systems Catapult, and the Net Zero What Works Centre to apply and share whole system thinking. These collaborations enable us to embed practical, system-wide improvements in our planning and decision-making processes. For instance, we worked with Energy Systems Catapult to co-develop training that equips our teams with the tools and knowledge needed to effectively apply whole system thinking.

Making impartial and transparent decisions

The publication of our DNO:DSO Operating Framework and our Conflict of Interest Management Plan help give stakeholders confidence that we are using the most appropriate interventions and are a neutral market facilitator. We have continued to provide stakeholders with transparency of our investment decisions through the publication of our NPD and DNOAs.
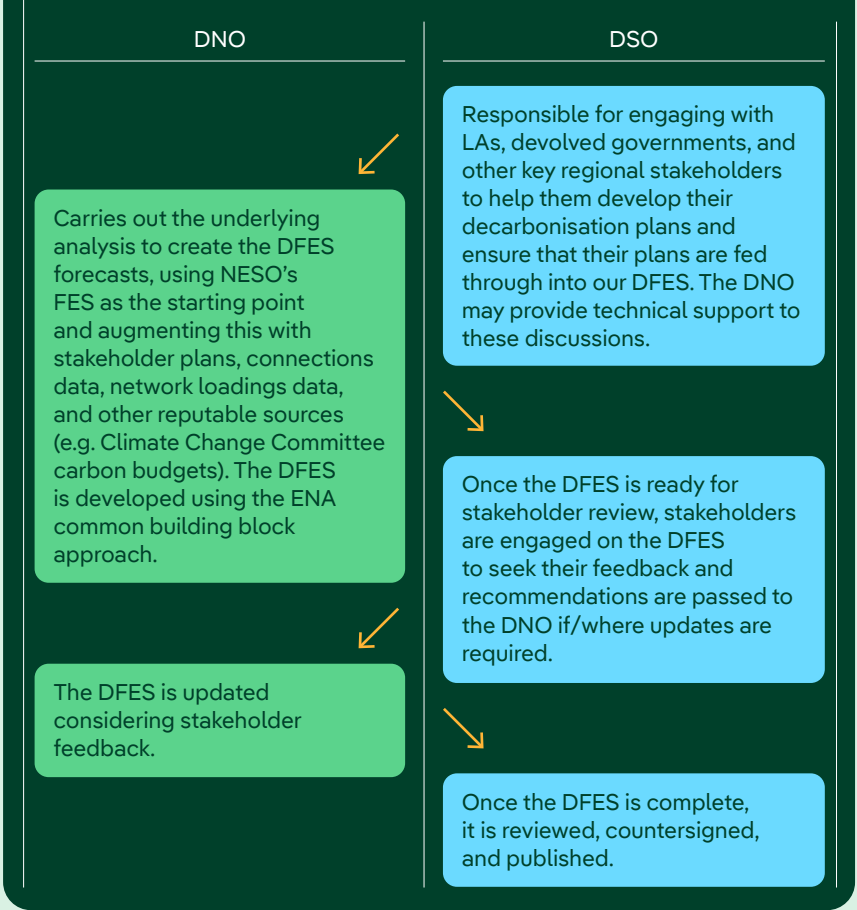
Our DNO:DSO Operating Framework

In our ED2 Business Plan, we explored three organisational structures that could deliver the three main DSO roles. Our analysis against a range of assessment criteria (including cost, accountability for DSO delivery, and conflict of interest concerns) found that a discrete DSO business unit within the distribution network licensee was the most beneficial for our customers. This option was also supported by our stakeholders.

Significant changes in the political and regulatory landscape over the past year, along with clear feedback from the Ofgem DSO Performance Panel regarding clarifying DSO and DNO responsibilities, prompted us to formally define these internal roles by publishing our DNO:DSO Operating Framework. It was developed with input from our INZAC and was open for a three week stakeholder consultation.

Our DNO:DSO Operating Framework shows how DNO and DSO personnel interact and where responsibility sits for the component tasks of each DSO role. This Operating Framework provides an additional layer of transparency in our day-to-day operations and decision-making. It has been developed considering other DNO:DSO good practice, the NESO:TO split, and the need to address potential conflicts of interest and retain clear responsibility for customer outcomes. The example in Figure 1 demonstrates the clear split of responsibilities between DNO and DSO functions in the development of the DFES; it is one example of several activities specified in the Operating Framework.

⊕ Further information on our DNO:DSO Operating Framework can be found here.

Figure 1: *Forecasting responsibilities*

DNO

Carries out the underlying analysis to create the DFES forecasts, using NESO's FES as the starting point and augmenting this with stakeholder plans, connections data, network loadings data, and other reputable sources (e.g. Climate Change Committee carbon budgets). The DFES is developed using the ENA common building block approach.

The DFES is updated considering stakeholder feedback.

DSO

Responsible for engaging with LAs, devolved governments, and other key regional stakeholders to help them develop their decarbonisation plans and ensure that their plans are fed through into our DFES. The DNO may provide technical support to these discussions.

Once the DFES is ready for stakeholder review, stakeholders are engaged on the DFES to seek their feedback and recommendations are passed to the DNO if/where updates are required.

Once the DFES is complete, it is reviewed, countersigned, and published.

Continuing to provide transparency and accountability in investment decisions

We have continued to publish the outcomes of our investment decisions through our NDP. After a succesful trial in 2023/24, we have expanded the publication of DNOAs to provide stakeholders with more information on individual scheme decisions. These assessments are published in a common format, which includes information on the constraint identified, details of our flexibility tendering, and the intervention we've ultimately selected. All assessments are also complemented by Engineering Justification Papers, with details on the nature of the constraint, network impacts, solutions considered, and selected intervention. Over 2024/25, we released 44 DNOA results, up from 14, now covering all load related interventions, at the primary substation level and above. These assessments showcase our options assessments and results with a range of interventions identified, including flexibility services, network automation, and smart network interventions. Coupled with our NDP, available here, DNOAs provide full transparency of our investment decisions.

Executive-level accountability in our investment decisions

The outcome from our optioneering assessments and final intervention decision is captured in a technical paper. This must be reviewed and approved by our System Review Group and DSO Team before it can progress. The System Review Group is a group of experts from across the business, including Operations, Delivery, Environmental, Network Protection, and Control Room. This process provides the opportunity to review and challenge each scheme from a technical perspective.

Once technical approval has been received, financial approval is then sought. For schemes up to £1m this is made at the Planning Approval Meeting by the relevant Licence Director who will be responsible for delivering the intervention for the cost stated. This meeting is attended by representatives from Financial Control, Engineering, Technical, DSO, and Regulatory Finance, providing the opportunity for the Licence Director to get input from the other departments involved in the project.
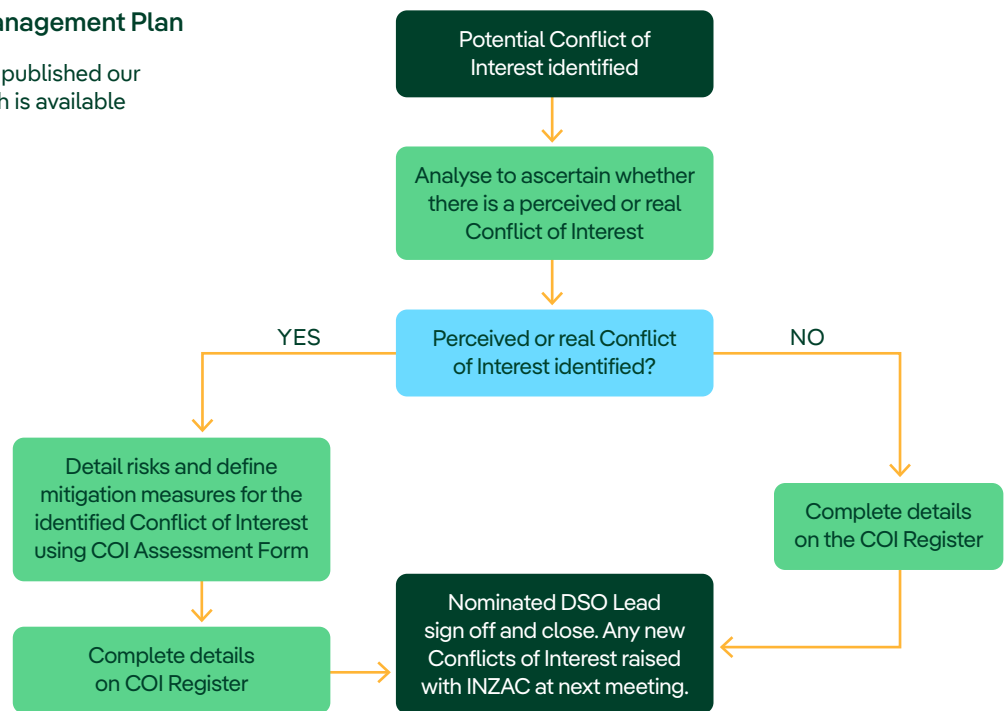
Schemes greater than £1m also require financial approval from our Investment Review Group. Membership includes the CEO and directors across the organisation.

Only interventions passing both technical and financial reviews proceed. This separation of responsibilities helps mitigate conflicts of interest, as technical teams focus solely on engineering, while financial teams are responsible for evaluating cost-effectiveness. This internal process also complements our governance structure, with clear DSO accountability and executive-level oversight for rigorous intervention scrutiny. Further details are available in our published Decision Making Framework.

Publishing our Conflict of Interest Management Plan

Building on our consistency check, we also published our Conflict of Interest Management Plan, which is available to all stakeholders here.

The purpose of this Management Plan is to identify, evaluate, and mitigate or manage real and perceived conflicts of interest between our obligations as a DSO and our other interests as a distribution network licensee. It tells stakeholders how they can raise conflict of interest concerns, and how they can input to the further development of the Management Plan. It provides examples of a perceived and real conflict of interest. The Management Plan follows the process presented in this diagram.

```
Potential Conflict of
Interest identified
        │
        ▼
Analyse to ascertain whether
there is a perceived or real
Conflict of Interest
        │
        ▼
Perceived or real Conflict
of Interest identified?
   YES ◄──┴──► NO
    │          │
    ▼          ▼
Detail risks and define     Complete details
mitigation measures for the   on the COI Register
identified Conflict of Interest       │
using COI Assessment Form            │
    │                                 │
    ▼                                 ▼
Complete details   ──►   Nominated DSO Lead
on COI Register          sign off and close. Any new
                         Conflicts of Interest raised
                         with INZAC at next meeting.
```

Anyone involved in or impacted by DSO activities, including our colleagues and external stakeholders such as customers, suppliers, or industry bodies, can flag conflicts by emailing us at: DSO@spenergynetworks.co.uk

For all identified conflicts of interest, we will assess and categorise these as either perceived or real based on the definition set out in the Plan. All conflicts identified are then documented using a risk assessment form, detailing the nature of the risk and providing details on our proposed mitigations. Finally, the risk assessment will be signed off by a nominated DSO lead and reviewed by a governance lead to ensure that our approach to addressing the conflict of interest is robust. We will also record any disclosures and the approach taken in our Conflict of Interest Register.

The Plan was developed with external and internal stakeholder engagement. The external engagement involved our INZAC, which provided feedback that led

to improvements, including its alignment with the principles of proportionality, transparency, accountability and fairness. It also involved a public consultation that led to the introduction of independent oversight in our Plan and indicated 95% stakeholder support for our approach to managing conflicts of interest. Internal engagement focused on learning from Scottish Power's longstanding expertise in maintaining separation between business verticals. Drawing on lessons learned by expert colleagues ensured that our Plan embedded industry best practices.

The Conflict of Interest Management Plan will be reviewed periodically (at least every two years) to reflect developing industry best practices, the evolving regulatory framework, and the feedback gathered from customers and stakeholders. All future updates will follow a transparent governance process that involves review from the INZAC, our Head of DSO, and the Director of Network Planning and Regulation.

The essential role of independent oversight
Expert and independent oversight of our Conflict of Interest Management Plan provides stakeholders with additional confidence in the neutrality, transparency, and robustness of our decision-making process. As our DSO Panel, the INZAC plays this important role. The INZAC's roles include:

– Providing an independent review of our governance and decision-making process, including the Conflict of Interest Management Plan, to ensure these foundational policies were fit for purpose and effective in managing perceived conflicts of interest.

– Playing an ongoing role in the Conflict of Interest process. Any new perceived or real Conflicts of Interest that have been identified and assessed will be reported to the INZAC.

– Participating in any future developments of our Conflict of Interest Management Plan. We will consult INZAC about any updates required in our governance and discuss their materiality to ensure our processes remain fit for purpose.

"I cannot fault SPEN's commitment and diligence to engage with us as a stakeholder regarding network planning, their commitment over the last five years to engage and support the development of the Mid Wales Energy Strategy and Powys and Ceredigion Local Area Energy Plans has been consistent and dedicated. They have supported strategically important infrastructure projects with timely engagement and support regarding network constraints and grid connections and have remained consistent in their engagement throughout the DFES process including sharing of the outputs of the DFES and how we can continue to work with them to influence future investment and network planning."

Tom Yeo, Programme Delivery Manager Climate & Nature, Powys County Council

"We welcome the transparency, collaboration, and positive approach SPEN bring to working with us, including through joint workshops with our shared regional stakeholders. This engagement really enhances coordination between transmission and distribution, supporting longer term network planning and collective decarbonisation efforts."

Ben Haggerty, Head of Whole Systems Infrastructure Development & Delivery, NGET

Chapter 5 – DER dispatch decision making framework

Our DER dispatch and decision making framework is essential for enabling efficient and coordinated markets across transmission and distribution, managing a decentralised energy system, and achieving Net Zero. Our approach is built around three pillars: **enhanced DER visibility and communication**, **a robust decision-making framework**, and **scalable dispatch infrastructure**.

Key highlights from 2024/2025

Enhancing DER characteristic visibility and NESO communications

1. Improved data gathering and governance processes, resulting in 85% ECR validity, up from 41% last year.

2. Installed 5,391 LV monitors – 1/3 of all monitors planned for ED2 – unlocking £9.4m in long-term benefits, with additional real-time site monitors deployed for DER >1MW.

3. Analysed unaggregated smart meter data to fill DER data gaps.

4. Operational ICCP link to NESO Control Room covering SPD.

5. Implemented automation and machine learning processes into our Network Support Room to enhance analysis of, and get actionable outputs from, real-time data.

6. Led the industry workgroup to implement consistency in Week 24 reporting of distribution storage metrics to NESO.

DER dispatch decision making framework

1. Updated our Decision Making Framework to clearly communicate flexibility dispatch procedures to stakeholders and FSPs.

2. Launched monthly flexibility tenders, leading to increased coordination with NESO markets.

3. Aligned with the ENA's interim primacy rules, and collaborated with NESO and industry working groups to further refine and standardise these rules.

Scalable dispatch infrastructure

1. Completed the majority of implementation work for the centralised CMZ system and tendered all remaining ANM infrastructure.

2. Used Piclo Flex to facilitate the end-to-end flexibility service process.

Enhancing DER characteristic visibility and NESO communications

DER visibility is central to informing effective flexibility dispatch, and managing DER in real-time. This data will improve our operational decisions and coordination, and communication with NESO.

Building a comprehensive approach to DER visibility

Capturing characteristics of new providers

For new DER connections at EHV, HV, and LV (G99 customers), we capture DER characteristics during the connection application process. Once accepted, the characteristics are fed into our authorised network planning model, ensuring future connection offers and network planning decisions take them into account. Upon connection, we update the network operating model used by our Control Room to understand the impact of operational actions. Our Model Management Team oversees this governance, ensuring robust DER visibility in planning and operational decisions. Additionally, DER sites which have accepted connections have 57 characteristics recorded in our publicly available ECR. Improvements to our data governance and processes this year have increased ECR validity from 41% to 85%.

We install real-time monitoring to DER sites connecting at 132kV, 33kV, or exceeding 1MW, to ensure full Control Room visibility. This helps us make more informed operational and dispatch decisions.

Customers participating in Piclo Flex tenders register their characteristics directly on the tender site. We use this information to assess the suitability of providers.

Closing gaps in existing DER and LCTs

Like all distribution network licensees, we face the issue that some smaller customers (G99) do not report LCT connections to us. We are addressing this data gap with several activities.

Our iDentify App has significantly increased LCT data collection, with its noted success prompting the ENA to develop and deploy the Connect Direct website for all DNOs. Another initiative to close the data gap is our Disruptive Technologies project, which has quadrupled our visibility of rooftop solar PV.

In January 2025, our Network Support Room started a trial to increase visibility of unregistered domestic LCTs by analysing 12 months of disaggregated smart meter data from a sample of 2,100 properties. This project will develop an algorithm to identify unregistered LCTs and assess their impact on the network. We can then update our network model and tools, so we can continue to recognise unregistered LCTs once our access to the disaggregated smart meter data ends. This more accurate model will enable us to better identify LCT uptake in future, leading to better LV voltage management, better theft identification, and more informed decisions about where we need to increase capacity.

Leveraging advanced network data analysis

We expanded our network visibility this year by increasing LV monitoring and enhancing the use of real-time analytics. We installed 2,855 LV monitors in SPD and 2,536 in SPM, delivering a total of 5,391 monitors – taking us to 46% customer coverage against our ED2 target of 80% from 15,000 LV monitors. Smart meter saturation in our licence areas also rose from 47% to 54%, further expanding available network data.

We upgraded our LV Support Room to a full Network Support Room, importing real-time data across all voltages and smart meter sources to generate actionable insights. These support operational interventions, reinforcement planning, asset health management, and improved DER visibility – providing us with industry leading network visibility and analytics.

New automation and machine learning processes have deepened our insights, and improved coordination across our Network Support Room, Control Room, and Flexibility Teams, strengthening dispatch decision-making and DER performance (see Chapter 2). Enhanced insights have also helped minimise DER curtailment.

Building a comprehensive approach to DER visibility *continued*

Enhanced visibility enables identification of network performance issues, enabling near real-time interventions from our Control Room. These insights have informed our dispatch framework to help verify forecasts against live data, resolve issues through flexibility services, and minimise DER curtailment.

Case Study: Purchasing the NAVI platform to drive enhanced in-house analytics

We purchased NAVI in 2024/25 as a significant investment to strengthen our in-house analytics capabilities and improve DER visibility. NAVI is SPEN's central connectivity model, covering the full network from customer cut-out fuses to the transmission interface. It updates daily to reflect network configuration changes and data corrections, improving model accuracy over time, particularly as more LV monitors and smart meters come online. NAVI supports real-time analysis in our Network Support Room and long-term network planning on the ENZ Platform. It enables more granular and reliable network insights, enhancing DER visibility across both near real-time and future planning timescales.

Our comprehensive approach validates forecasts with Network Support Room data analysis to enhance accuracy, transparency, and fairness across timescales. This goes beyond just DER data collection, to utilising advanced tools such as the Network Support Room, Piclo Flex, and ENZ Platform to increase visibility through granular analysis and visualisation.

ICCP Links and NESO Communication

We maintain strong and effective communication channels with NESO. Real-time data exchange occurs via an ICCP link in our SPD area, and network performance and DER data is shared in a number of datasets. This visibility helps enhance DER participation in NESO markets and helps prevent service conflicts.

This coordinated, whole system approach reduces conflicts when DER assets operate in multiple markets, ensuring optimised dispatch decisions and market participation. We expect improved communication and greater DER visibility will increase DER participation in NESO flexibility markets. Our NESO data communication strategy has two parts:

ICCP Real-time Operational Links

This year NESO has confirmed that the current SPT ICCP link with NESO meets their distribution-level ICCP link requirements for SPD, and that no separate distribution ICCP link is needed. Utilising the SPT ICCP link is a pragmatic, quicker, and cost-effective way to deliver full ICCP functionality to our distribution Control Room.

For our SPM Control Room, we are establishing an ICCP link through the Restoration Decision Support Tool Delivery Project with the timeline dictated by NESO. Implementation of the required infrastructure and software has been completed by SPM, with full ICCP link completion scheduled for October 2025. This timeline is controlled by NESO's phased integration strategy and follows ENA Open Networks Programme guidelines.

Case Study: Sharing consistent electricity storage metrics with NESO

As detailed in Chapter 1, we lead the industry workgroup on connection reform for distribution electricity storage, coordinating across all network companies and NESO. Work group outputs included standardised data sharing of electricity storage metrics across all DSOs via enhanced Week 24 reporting. Standardisation helps improve the clarity and effectiveness of storage curtailment decisions, enabling better whole system coordination with NESO. More accurate visibility of distribution storage also enables more informed transmission network planning decisions.

Data sharing via standardised reporting

Detailed DER and network performance data is consistently provided through Week 24, ECR, and associated datasets, and via public datasets on our Open Data Portal. We also publish contracted flexibility service information through tender results and the NDP. This comprehensive approach enables NESO to clearly understand DER assets.

DER Decision Making Framework

Our comprehensive network visibility strategy and robust communication with NESO underpin our effective decision-making.

Informed by stakeholder consultations, we have formalised DNO-DSO responsibilities for operational decision making in our new DNO:DSO Operating Framework, increasing clarity and transparency of dispatch decision making. We also published the updated Decision Making Framework, where Stage 4 and 5 guide the dispatch of DER.

We made several improvements this year to our flexibility dispatch decision making and NESO coordination. We updated our Decision Making Framework to capture these:

– Enhanced operational flexibility guidelines allow quicker, more efficient real-time flexibility dispatch during unplanned outages, as demonstrated during Storm Darragh – further discussed in Chapter 3.

– Monthly flexibility tenders now align procurement more closely with real-time network requirements. This enables more optimised and transparent flexibility decision making, with clearer connection between network requirements and dispatch decisions which incorporate a whole systems perspective. This change also better enables providers to participate in NESO markets, as they are no longer contracted to us for long periods.

– We continue to use non-exclusive contracts, and have removed minimum volume and technology requirements for flexibility market participation. Combined with reduced contract lengths, this will reduce barriers for distribution connected DER to participate in NESO flexibility markets, following our commitment to be a facilitator of an open and accessible flexibility market.

We align with the ENA's interim primacy rules, and are collaborating with NESO and industry working groups to refine and standardise these rules further. Our implementation plan involves ongoing system enhancements, improved data-sharing protocols, and ensuring regulatory alignment. We are working to support distribution connected flexibility to provide services to NESO, and are participating in NESO planning meetings to deploy MW Dispatch in SPD by 2025/2026.

Scalable dispatch infrastructure

We have built scalable dispatch infrastructure which is designed to keep pace with the growth of electricity demand and DER connections. Through active, real-time management of the network we are able to manage much higher DER generation capacity than before, and work closer to network capacity limits.

Our dispatch and curtailment infrastructure has two core components:

Infrastructure to dispatch flexibility services

Piclo Flex is our current non-proprietary platform used for flexibility tenders and flexibility service dispatch instructions. FSPs can participate in flexibility tenders and view all critical information on one platform, making the tendering process highly efficient. As noted in Chapter 3, we are tendering for a new flexibility platform to align with emerging industry standards and future functionality needs, while continuing to develop our use of Piclo Flex in the interim.

Benefits include:
– Efficient, centralised access for FSPs to all necessary tender and dispatch information.

– Dispatch and curtailment signals sent via email and/or API integration directly to FSP Control Centres, ensuring compatibility with both legacy and modern systems. This year 8,229 dispatch instructions were sent.

– This year we have added automated API integration to send flexibility tender requirements from our Flexibility Team to the Piclo Flex platform, and also to our Open Data Portal.

– Instant dispatch instruction delivery, with instructions received by FSPs within seconds of being issued.

– The platform's flexible design is fully scalable to handle all growth in flexibility needs, and has in-built capabilities to make it adaptable to changing market structures, primacy rules, or regulatory requirements without hard-coding of capabilities.

– Transparent and clearly defined rules for dispatch instructions outlined in our decision making framework and supporting policy documentation, and included in tender details provided by Piclo Flex.

"As a first-time flex provider, the platform is the easiest we've registered on, with prompt support resolving any issues, and it's great to see multiple opportunities listed in one place."

Felix Wight, Commercial Director, Connected Response

"The use of a LMS was fundamental to the early connection of Rigmuir Wind Farm, a 13.5MW wind farm in South Lanarkshire. The solution was put forward, and ultimately implemented, by SPEN as a means of avoiding transmission related delays and costs associated with significant reinforcement works. SPEN were able to support in estimating levels of curtailment, allowing CE as developer to make an informed investment decision – balancing reduced yield against increased capital expenditure and a delay to connection of up to six years."

Dean Robson, Managing Director, Clean Earth Energy

Infrastructure to curtail flexible connections

We utilise several dispatch infrastructure technologies to curtail flexible connections. These include:

– LMS, which we use to manage generation, demand, and storage customers against transmission constraints.

– Local management schemes (LoMS), which we use to manage generation and storage against constraints in our SPM meshed network.

– CMZs, which contain ANM functionality and we use to implement Technical Limits solutions at the T/D interface.

These technologies avoid hard-coded capabilities in network operations and support clear, rule-based curtailment instructions. They deliver more efficient network planning, by enabling higher utilisation of existing assets and coordination with transmission, and benefit customers through quicker and lower cost connections. This results in societal benefits from avoided reinforcement, reduced wholesale market costs, and earlier economic activity. The accelerated connections they deliver will help meet CP2030. Our activities this year and the resulting £542m long-term benefits are explained in Chapter 1.

LMS and LoMS are established technologies, where our activity this year has been focused on accelerating connections. CMZs are our latest solution with greater functionality – they are regional platforms that manage real-time network operational actions and DER curtailment utilising non-proprietary equipment . This year we made significant progress towards centralising CMZ control via the new Centralised ANM Operating Platform, which will accelerate CMZ deployment, and be implemented by the end of 2025. This will enable greater functionality compared to other curtailment infrastructure:

– Enhanced non-hard-coded capabilities: easily adapt to new primacy rules, dispatch frameworks, and market changes. This means the curtailment rules are transparent and up-to-date, ensuring coordination with NESO primacy rules and DSO flexibility markets.

– Improved communication: In the future they will work with ICCP links, giving our Control Room much greater visibility, facilitating greater operational efficiency. This will enable greater operational coordination with, and visibility of DER to, NESO.

– Increased scalability: support millions of data points, enabling coordination and management of all future growth in DER and operational actions.

Centralisation will reduce manual on-site interventions, the number of control points (saving capital expenditure), and the time taken to adapt CMZs to changes. We also completed the tendering for the deployment of all remaining ANM infrastructure. Instillation of the first CMZ in SPM at Four Crosses in Wales will go live this summer, with two additional CMZs deploying in SPD and SPM by year-end.

CMZs are an important component of our enhanced dispatch decision-making frameworks. Its non-hard-coded capabilities allow us to optimise DER curtailment through more efficient, transparent, and scalable curtailment infrastructure that has improved data communication and visibility of DER.