SMART OPTIMISATION OUTPUT: COLLABORATION PLAN

May 2026

DSO | UK Power Networks Delivering your electricity

Contents

1. Executive Summary

The Smart Optimisation Output (SOO) is aimed at promoting and enabling effective collaboration between UK Power Networks (UKPN) and our local stakeholders and communities, leading to better network planning and more coherent local and regional planning to enable Net Zero. This report details the UKPN Collaboration Plan, covering both the strategic and tactical actions for enhancing the effectiveness of cross-sector collaboration strategies and sharing data through our System Visualisation Interface and Open Data Portal.

We published our System Visualisation Interface (SVI)[1] in 2023 through our Open Data Portal (ODP), providing a visual geographic representation of many of the key datasets which are hosted on the portal including our infrastructure, Low Carbon Technologies (LCTs) connected to our network, headroom, and the outcomes from our Distribution Network Options Assessment (DNOA). Throughout this plan we describe the latest datasets and dashboards, which are accessible through this interface and those which are part of the wider portal to underscore the ways that stakeholders can access our data to support optimisation across our network.

Emphasising the importance of stakeholder feedback, this report underscores the necessity for us to continuously measure the effectiveness of our Collaboration Plan and SVI. By actively engaging stakeholders, including users of the SVI and our other published datasets, we gather valuable insights to refine our strategies and improve outcomes. This report highlights the key role of stakeholder engagement to enhance the SOO, supported by our cross-organisational and cross-vector collaboration. This year's SOO demonstrates a significant maturation of UK Power Networks' DSO capabilities, shifting from establishing new tools in 2024/25 to delivering measurable, system-wide impact in 2025/26. The 2025/26 SOO reflects:

- Strong growth in day-ahead flexibility market from 2.8 GWh to 11 GWh, over 500 auctions, and 95% participation from low-carbon assets.
- Network planning and modelling have advanced substantially with the integration of six new Local Area Energy Plans (LAEPs) covering 36 Local Authorities and enhancements in Distribution Future Energy Scenarios (DFES) data, Strategic Forecasting System (SFS) inputs, and cross-vector insight.
- Digital tools such as the Connections Lab, and ChargePoint Navigator have transitioned from pilot phase to scaled, feature-rich platforms, underpinned by new analytics, automated APIs, enhanced modelling, and near real-time data provision.
- Collaboration has deepened across all levels, including expanded National Energy System Operator (NESO) data exchange with MW Dispatch, and new cross-sector tools and publications such as the UK Power Networks Python Package, Opportunity Finder and Local Authority Common Ask.
- Data transparency has also increased significantly, with new enhancements to the Network Operational Data Dashboard (NODD), System Visualisation Interface and Open Data Portal.

Overall, the 2025/26 SOO presents a more mature, data-driven and whole-system-aligned programme, with stronger stakeholder integration.

2. Introduction

UK Power Networks is the largest electricity distributor in the UK, supplying over 8.5 million homes and businesses across London, the East and South East of England. We keep the lights on for around 19 million people from Cromer in the East to Brighton on the South Coast. A central part of our vision is to enable the transition to Net Zero by ensuring that electricity network capacity is delivered in the right place, at the right time, and at the lowest overall cost.

The UK's electricity networks are undergoing a period of rapid transition. The Office of Gas and Electricity Markets' (Ofgem's) grid connection reforms represent a significant policy shift, designed to accelerate connections, unlock investment, and prepare the networks for the scale of electrification needed to meet the Clean Power 2030 targets. In parallel, the introduction of the NESO Regional Energy Strategic Plan (RESP) marks a major shift in how long-term energy needs are identified and coordinated across regions. By creating a new independent planning function, the RESP is striving to improve whole system coordination, identify regional bottlenecks earlier, and direct strategic investment where it is needed most. Current forecasts indicate that electricity demand will at least double by 2050 as distribution networks support the widespread electrification of transport, heating, and industry.

[1] Annex A provides an overview of how our System Visualisation Interface fulfils the expectations set out by Ofgem.

The increasing uptake of electric vehicles, heat pumps, grid-scale renewables, and battery storage will continue to drive significant connection growth. Additional demand is also expected from industrial decarbonisation, ports, shipping, and the expansion of data centres. On the other hand, improvements in energy efficiency, demand response, and distributed flexibility can help peak loads and optimise asset utilisation. Collectively, these factors illustrate the scale of change now shaping the use of electricity distribution networks, and the need for more adaptive and digitalised grid operations.

At UK Power Networks, we consider smart optimisation to be central to our way of working as a modern energy network and system operator. When we launched the UK's first independent Distribution System Operator (DSO) in 2023, a core ambition for the DSO was to deliver excellent service for our customers and facilitate Net Zero through an efficient electricity network. The Distribution Network Operator (DNO) is responsible for keeping the lights on and meeting wider demand growth. However, we must also act in the interests of customers ensuring robust challenge on the size of the required network and the role flexibility, data and technology can play in keeping costs down. The examples below illustrate the impact we are delivering through effective collaboration across the energy system and this report covers our strategy and initiatives describing how we are meeting and exceeding the core requirements outlined in the Ofgem guidance document.

- The day-ahead flexibility market has already delivered 11GWh of flexibility across 500+ auctions with 95% participating assets coming from LCT, giving households and businesses faster, clearer access to value for helping support the grid.
- The collaboration between UK Power Networks and NESO through MW Dispatch is enabling local energy to manage national grid constraints for the first time, unlocking earlier connections for 47 projects, up to 10 years sooner, and paving the way to power around one million homes while cutting costs and accelerating the transition to Net Zero.
- The LAEP+ planning tool helps customers by enabling local authorities to plan Net Zero projects faster and around 25% cheaper, unlocking over 200 local decarbonisation projects so far and accelerating the rollout of low-carbon upgrades and infrastructure in their communities.
- UK Power Networks, Cadent and SGN previously joined forces to launch a first-of-its-kind Common Ask Template to simplify and speed up local Net Zero projects for councils. This year, the collaboration between UK Power Networks, NGED and SSEN on Local Authority Common Ask is making local energy planning faster, simpler and more consistent by creating a single standard for sharing LAEP data, reducing burdens for the 54 local authorities that span multiple networks and enabling quicker, better-informed infrastructure decisions that ultimately help keep costs down for customers.
- The collaboration between UK Power Networks, Field Dynamics, Cenex and ZapMap through ChargePoint Navigator has given councils a powerful evidence-based tool that boosts LEVI funding success from 30% to 100%, streamlines planning by unifying data in one platform, and accelerates the rollout of reliable public EV charging infrastructure for residents without off-street parking. Building on this success, Transport for Wales (TfW) has announced a Wales-wide initiative to support EV charging rollout by providing all 22 local authorities with free access to ChargePoint Navigator.
- As a free, self-service digital tool, Connections Lab removes the traditional barriers of cost, delay and uncertainty by allowing developers to instantly model connection options, customers save around two months per application on average, accelerating project timelines, reducing risk, and allowing clean energy schemes to progress faster than ever before.

3. Our Strategy and approach to Smart Optimisation

Smart optimisation across the energy system has been defined in the SOO Guidance by Ofgem as "utilising network data to improve decision-making on all aspects of network functions, particularly with respect to Load Related Expenditure (LRE), the establishment of DSO functions, and collaboration with local stakeholders". Our approach reflects this definition, with transparency, collaboration and data driven delivery at its core.

Digitalisation underpins this effort. The Digitalisation Strategy and Action Plan (DSAP) highlights our view that digitalisation is critical for decarbonisation, underscoring our commitment to harnessing data to plan and innovate across the network. For example, the DFES is an important forecasting output that we have expanded to become even more locally informed. Initiatives such as LAEP+ planning tool and ChargePoint Navigator empower local planning for Net Zero, while Connections Lab has redefined the speed and transparency of connection analysis. The MW Dispatch solution is among the first industry implementations to address transmission–distribution coordination and adopt a whole-system approach. We are spearheading initiatives to coordinate across energy vectors, including through innovation projects. These are a number of examples among the many outlined in further detail throughout this report and a table of our most important strategies and initiatives related to the SOO is presented in Annex B.

Smart optimisation at UK Power Networks brings together our data, planning and stakeholder work so we can plan the network efficiently, meet customer needs and support local Net Zero plans. Our approach to smart optimisation is split across three timescales as shown in Figure 1: (i) long-term, (ii) short-term, and (iii) operational. By optimising over these time horizons, we

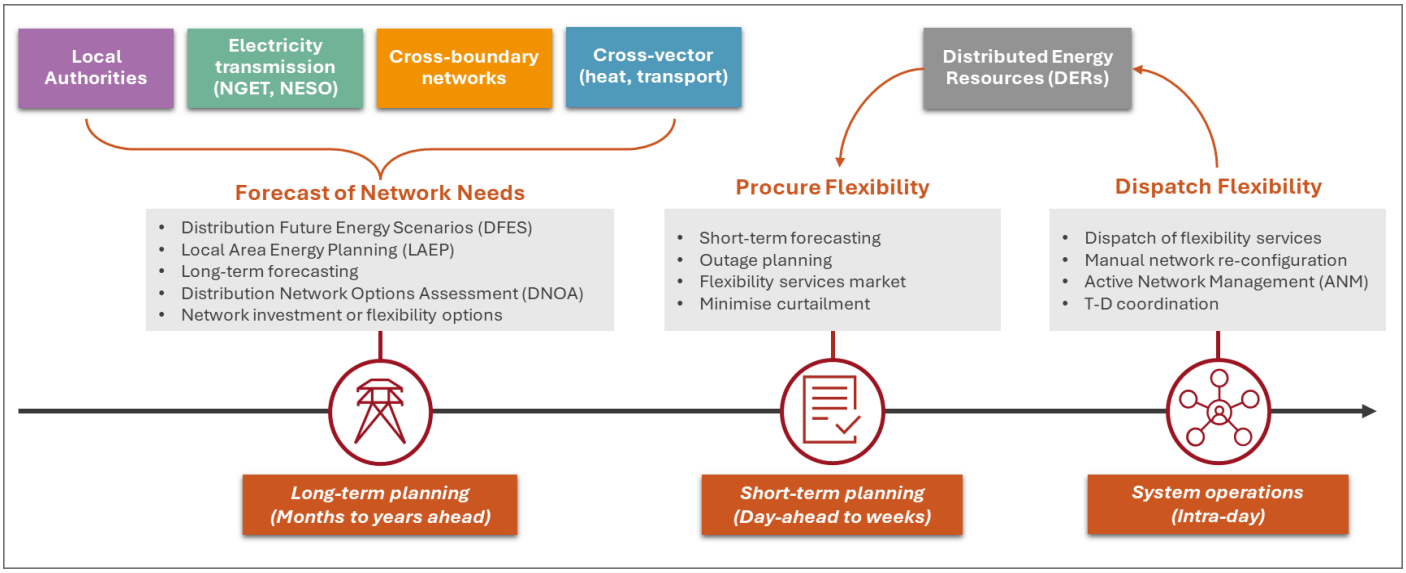

Figure 1. Key optimisation actions across three-time horizons

facilitate smart optimisation and effective strategic decision making. While planning years ahead ensures that our long-term investment choices and network reinforcement plans align with our modelling to meet real-world needs, our short-term strategy involves looking at flexibility options in the market. Lastly, our operational optimisation keeps the lights on reliably and sustainably.

Throughout RIIO-ED2, we will continue to expand the data sources we make use of in this process including local energy planning insights to support our forecasts. Below we provide an overview of our work across these timescales and *Section 5* highlights the ways we are bolstering collaboration and using new data sources throughout this process.

(i) Long-term Planning: optimisation months to years ahead

Our long-term planning strategy reflects the scale and lifespan of network investment, we therefore use DFES forecasting and the DNOA process to give a detailed view of future network needs and set investment priorities, while giving stakeholders clear signals for their own plans. We start each planning cycle by building our annual DFES forecasts. We develop bottom-up scenarios aligned with NESO's Future Energy Scenarios, then select a single current planning pathway based on policy, stakeholder feedback and local characteristics. Then, these outputs feed directly into our long-term forecasting platform, SFS, which maps granular LCT uptake onto the network at all voltage levels and builds unique demand profiles at each LV feeder. From this we produce Planning Load Estimates (PLEs) which is a bottom-up load forecasts out to 2050 at our highest voltage substations.

We are continuously revising the inputs to these forecasts through updated technology profiles in the SFS and expanded coordination with local authorities to include their LAEPs. This year, we have strengthened our DFES by improving specific technology-uptake assumptions, incorporating local housing data, new connections, transitional RESP and insights from LAEPs. A key part of this improvement comes from deeper engagement with local authorities supported by our dedicated Local Net Zero team. Through the LAEP Support Framework and LAEP+ planning tool, local authorities can bring together their decarbonisation strategies, local market trends, transport plans, and social policies with network infrastructure data to test planning options. As outlined further in *Section 5.5*, we have introduced a dedicated LAEP Open Data Page providing **easy access to over 170 datasets** prioritised by local authorities to support their decarbonisation plans. Additionally, in response to stakeholder feedback, we have consolidated our DFES datasets into a single file on the ODP. Previously split across multiple files by technology type, this streamlined super-dataset simplifies retrieval of all underlying DFES information.

The forecasted load is then used to identify the substations with limited headroom capacity which will need to be managed either through long-term flexibility procurement or traditional reinforcement. Aligned with our RIIO-ED2 business plan, we have adopted a flexibility-first approach to interventions where this is the optimal solution. This commitment is at the core of our DNOA process, in which the DNO and DSO work together to assess the cost of flexibility and reinforcement for each identified system need. We use the industry developed Common Evaluation Methodology (CEM) Cost Benefit Analysis and publish our methodology and

reports on the DNOA website for each licence area to keep our planning process as transparent as possible. This year, alongside the DNOA report we published a full list of sites where we will consider investment decisions out to 2050 to give greater transparency of our system needs, the Long-term System Needs Register. This will give the flexibility market clearer visibility of future opportunities and help participants to plan and respond to uncertainty effectively across price controls. The DSO collaborates with expert stakeholders across the business to ensure that decisions taken are realistic and focus on the customer experience. Transparency across the planning process also helps our customers and flexibility providers to optimise their investments/planning. Throughout this process the DSO works with its own independent Supervisory Board to ensure that we are delivering on our RIIO-ED2 business plan **commitment to deliver a £410m reduction in load related expenditure** through increased competition and use of flexibility.

The Connections Lab is another strategic enabler for long-term network planning, empowering developers and stakeholders to optimise connections through integrated datasets such as live queue positions, sensitivity factors, and realistic curtailment models. Since its 2024 launch and enhancement in 2025 for connections reform, it has supported rapid re-analysis of Gate 2 offers in days, instead of months. This year we have introduced several new features shaped directly by our customer feedback, including a unique configuration ID system, allowing any user to reload and revisit a study instantly. Users can now replace our standard planning profiles with any scenario of their choice, including bespoke operating profiles tailored to their project. In addition, we strengthened the underlying demand and queue datasets, through the Network Planning tool that power the Connections Lab. **Since launch, 3,100 studies have been run by over 169 organisations, assessing 105 GW of potential capacity**. By turning detailed network data into practical insight, the Connections Lab is helping clean energy developers identify faster, lower-cost and more flexible connection options, supporting the UK's path to Clean Power 2030.

Similarly, our award-winning tool, ChargePoint Navigator developed with partners including Field Dynamics, Cenex, and ZapMap, is designed to support local authorities in optimising EV public ChargePoint deployment over long-term horizons. It integrates hyper-local datasets covering network capacity, off-street parking availability, pavement constraints, and projected charging demand to enable rapid site identification and evidence-based planning, streamlining Local Electric Vehicle Infrastructure (LEVI) funding applications. Recent enhancements have included enhanced site-selection functionality to support faster, more confident, data-driven decisions; seamless collaboration between local authorities and Charge Point Operators (CPOs); and clear, actionable data on costs, eligibility, and delivery timelines. These improvements help minimise deployment risks and costs while empowering community-focused planning to accelerate infrastructure rollout. This year, following the aforementioned user-driven enhancements **106 local authorities in UKPN licence area are using ChargePoint Navigator, and customer satisfaction increased to 94%.** Additionally, the service has also been rolled out beyond its original geography. Through sponsorship from Transport for Wales, all 22 local authorities in Wales now have access to ChargePoint Navigator, enabling a consistent, transparent, and evidence-based approach to planning public EV charging infrastructure.

(ii) Short-term planning: optimisation days to weeks ahead

UK Power Networks' short-term operational forecasting focuses on asset-level probabilistic forecasts of demand, generation and constraints with 30-minute resolution and looking up to 7 days ahead, using machine learning models trained on asset data, historical power flows and over 50 spatio-temporal weather variables. These forecasts are operationalised in three main areas: curtailment forecasting for flexible connections, dynamic outage management, and flexibility market scheduling. Detailed information on the short-term forecasting use cases can be found here.

Curtailment forecasting for flexible connections

We provide as much data as possible to our Distributed Energy Resources (DER) and curtailable connections customers, so that they can plan and optimise their own operations in the light of forecast constraints on the network. With nearly 10 GW of DER now connected to our network, timely and accurate information is critical to keeping these assets generating. Our Day Ahead reporting gives DER operators better visibility of our planned activities and outages helping them to maximise output and revenue. We have strengthened our service by proactively contacting DER customers ahead of potentially disruptive weather events and providing personalised support when issues arise. Throughout the year, we maintain ongoing engagement to ensure our services evolve in line with DER customer needs. We also deliver annual curtailment reports and near real-time data to flexibly connected customers, giving them tailored insights to support their business planning.

Dynamic Outage Management

For maintenance, we periodically need to take planned outages, which can impact customers with a firm connection (who are therefore not usually subject to curtailment) who may be shut off to protect the network. To reduce the impact, we developed a dynamic outage management tool that forecasts customer output on affected parts of the network. This year, we automated the

tool to broaden DER participation and ensure more consistent dispatch. The dynamic outage management helped release **190 GWh of capacity across 19 outages, impacting 36 DER customers.** This delivered **around £8m of environmental benefits and £11m of wider system benefits**, helping generators protect value from their assets while supporting a more efficient, net-zero-ready electricity system. Additionally, we have expanded this service by automating key processes using in-house forecasts developed by our data science team. It enables dynamic daily outage management for outages of any scale, with future capability to automatically select outages and pre-prepare data for control room decision-makers. Control room teams can now access real-time information on restrictions, helping minimise disruption to customers.

Day ahead flexibility markets

Building on this operational foundation, we have also transformed how flexibility markets operate on our network. Our pioneering collaboration with EPEX SPOT on **Day Ahead Flexibility Markets won the** Best Use of Energy Flexibility Data category **in Utility Week 2025 FLEX Awards.** What began as a manual process has evolved into a fully digital platform with API connections to participants' systems. Guided by feedback from our Flex Council, Flexibility Service Providers (FSPs) and one-to-one engagement, we consolidated registration, bidding, dispatch and settlement onto Localflex, our all-in-one platform with full API access. Alongside this, automation has transformed how flexibility providers engage with UK Power Networks' DSO Day ahead markets. By integrating the Localflex platform with the network connectivity database, asset approval is now largely automated, with 87% of assets approved within one day. This has supported faster participation, increased competition, and driven growth from one to more than 25 operational flexibility providers since 2019. APIs enable auto-alerts for auctions, efficient bid submission and dispatch, automated meter data for payments, and predictive analytics combining live network data with weather forecasts.

(iii) System operations: intra-day optimisation

Real-time optimisation is central to our network operation, ensuring flexibility services are used efficiently and transparently in our Control Room. As part of the our DSO Operations, we established the first dedicated DER customer service team, providing 8am-8pm service, seven days a week while our DNO Control Room continues to manage the network 24/7 to maintain a safe, reliable and efficient electricity supply. The DSO Operations team works alongside the DNO Control team to support our DER customers, ensuring that flexibility services are effectively dispatched and the status of our flexibly connected customers is routinely monitored. Last year, our **DSO Operations team was awarded** Energy Team of the Year **in the Decarbonisation and Development category in The Energy Awards**, recognising outstanding cross-team collaboration and tangible impact for customers.

Our world-leading approach to using a Distributed Energy Resources Management System (DERMS) is an important step forward in managing our curtailable connections, using a combination of centralised and distributed intelligence to manage the export of distributed generation into constrained areas of our network. We are continuously enhancing and developing the functionality of the system and have a set of expanded capabilities planned for release in the last two years of RIIO-ED2. Last year we published DERMS Operational Guide and DER Commissioning Guide to show the operational implementation of DERMS scheme. This year, we expanded DERMS to include the LPN Common Information Model. This enhancement will enable a more dynamic, real-time DERMS configuration, moving beyond today's reliance on pre-defined running arrangements. The project timeline has also been extended to incorporate essential system upgrades, such as improved fault-level management and load-flow capabilities, ensuring all solutions are built on reliable network data and proven devices. Additionally, an industry first, we broadened the use of DERMS to manage a major planned outage, typically restricted to intact networks, allowing us to actively control export during the outage and maximise benefits to DER customers. Where we identified sites experiencing higher curtailment, we reviewed DERMS settings to ensure they reflected current operating conditions, and in one high-curtailment area we introduced a temporary summer running arrangement to increase load and reduce curtailment. Alongside with this, we facilitated IDNO customers to access DERMS for the first time.

Over the past year, our DERMS platform and DSO Operations team have enabled nine new solar and battery sites to connect to the network far faster than traditional connection routes would allow, adding 202 MW of clean capacity. We have been able to do this through flexible connections that monitor the network in real time, use smart, dynamic dispatch to adjust output based on what the grid needs, and enable projects connect without waiting for costly infrastructure upgrades. This approach cuts delays, reduces costs for developers, and has already delivered around £198 million in DER customer benefits by avoiding the major reinforcements that standard connections would have required.

Our MW Dispatch service is sharing data with the NESO (discussed more in *Section 5.12.1*). Through this service, participants in DSO flexibility services help to alleviate transmission constraints in real time and improve coordination in scheduling and dispatch between the NESO and DNO. For the first time in the industry, bilateral data has been exchanged between NESO and DSO from week ahead to day-ahead and intra-day time horizons using automated web API technology. MW Dispatch has been fully

operational since March 2025, delivering industry-wide benefits through data sharing and creating commercial opportunities beyond the DSO. Since the service went live, continued progress has further strengthened its functionality and increased its operational value. Since May 2025, NESO has issued 10 successful dispatch instructions across three participating assets, resulting in a total of 23.9 MWh dispatched. Additionally, a fourth asset has been onboarded which brings the total to 15MW available for NESO to dispatch under MW Dispatch service.

4. Our core principles for Smart Optimisation

Throughout this document, we share how we align our smart optimisation practices to meet the following core principles:

- Facilitate meaningful collaboration with local stakeholders by making strategic development data more accessible, transparent, and interoperable;
- Support a least-cost, optimised, and integrated Net Zero future energy system with connected market participants;
- Make data available, present a future vision, and collaborate to support least-cost whole system pathways;
- Ensure operating strategies and investment plans are informed by stakeholders and insights from their local location-based future load data;
- Support stakeholders to gain a better understanding of the electricity distribution network in their area, facilitating further collaboration via Local Area Energy Plans (LAEPs), regional energy planning and whole system optimisation across different energy vectors; and
- Leverage digital tools and strategic programmes to increase effectiveness of collaboration, facilitating local stakeholders to access and extract data that can be overlaid with other datasets within the whole system.

These principles align directly with points 1.5 - 1.10 of Ofgem's SOO Guidance.

5. Details of our Collaboration Plan

5.1. Our approach to sharing data with stakeholders, and how we are taking account of local stakeholder plans to inform our own strategic network planning and smart optimisation activities

We have set out our commitment for UK Power Networks to be Great Britain's leading DSO in data provision. We recognise that as the energy landscape evolves, it necessitates deeper engagement with various stakeholders, including flexibility providers, local authorities, and DER customers. Recognising the interdependence among these stakeholders, we acknowledge the importance of understanding their needs, challenges, and actions. By fostering mutual understanding, we aim to facilitate informed decision-making across the energy ecosystem. This section describes how we are enhancing our strategic network planning capabilities and smart optimisation activities including our approach to data sharing with stakeholders and our engagement with stakeholders to embed local planning into the network planning process.

5.1.1 Our approach to sharing data with our stakeholders

The DSO has adopted a proactive strategy of data and information provision, with a dedicated Open Data team responsible for engaging with data users and delivering on requests. The Open Data team actively engages customers to identify the most valuable datasets held by UK Power Networks and takes steps to release this data to the public on our Open Data Portal. This includes sharing comprehensive data on asset types, locations, connection types, capacity utilisation, constraints, planned investments, and interventions. Embracing Ofgem's Data Best Practice principles, we ensure easy access to information, fostering understanding and enabling customer influence on plans through platforms like our DSO website and annual Panel Report. Last year, we published the Data Best Practice maturity framework, designed to make planning and delivery across energy projects quicker, clearer and far less repetitive. The framework gives developers, consultants, local authorities and network planners access to more reliable, usable data so they can cut down on rework and make decisions with greater confidence. It also helps drive better coordination across the sector and encourages other DSOs, DNOs and energy organisations to adopt the same approach, raising the overall standard of data practices in a consistent, practical way. Data quality and reliability have been further strengthened through automated quality controls, enhanced metadata completeness, more reliable network models and power-quality datasets.

An important part of making this data as useful as possible is the standardisation of a Common Information Model (CIM). Ofgem defined a new CIM standard for the Long-Term Development Statement (LTDS) publication from November 2025, and the work happening across industry to develop and refine that standard has already helped improve collaboration and make it easier to access and combine data from different parts of the energy system. As part of this shift, we have published our November 2025

LTDS in a CIM-based format, giving developers, local authorities, consultants, researchers and system planners structured, ready-to-use information about how the distribution network is built and how it is expected to evolve.

This standardised approach allows users to compare potential sites, understand local network conditions and run modelling or scenario testing much faster, without constantly reformat data or switch between incompatible systems. It also supports more consistent decision-making across DNOs, DSOs, system operators, government bodies, academia and industry, helping everyone work from the same reliable dataset. The first release already includes the Equipment Model with additional components to follow. The machine-readable LTDS is available on our Open Data Portal. Through the first Data in Action LTDS CIM webinar we shared the latest updates, demonstrated how to import the datasets, and gathered feedback from users about their experience. We plan to continue hosting these webinars as new features and datasets are added.

Another important standardisation is to create a **UK Power Networks Python Package**. This public code repository originated from a customer-driven request by power-system data users at the University of Birmingham. Through collaboration with the university's master's students, we developed and openly shared reusable tools and methodologies to streamline analysis and avoid duplicated effort. This work led to the creation of ukpyn, a Python toolkit that provides all Open Data Portal users with interactive APIs, interoperable data-processing methods and practical tutorials, enabling faster and more consistent extraction of insight. Alongside this, we have strengthened our leadership in network optimisation by deploying pandapower, an open-source Python tool that enables advanced automated modelling of our electricity distribution networks. Using best-practice open-source analytics, we can run complex simulations that improve our understanding of network capacity.

Publishing network data via our System Visualisation Interface and Open Data Portal

Our System Visualisation Interface shows the locations and key details of our overhead network (lines, poles and towers), substations (at all voltage levels) and where existing demand or generation connections are in place, to provide a transparent and easily-accessible overview of our network. Each map layer is already hosted on our Open Data Portal with planned update regimes, metadata and clear licencing guidance. The portal features one of the UK's largest sets of information about the electricity network and brings together thousands of datasets from a vast range of sources to provide visibility of our network assets. Through regular engagement we are translating these high volumes of data into meaningful insights that have the greatest value to users. Examples of this engagement can be found in Annex C.

The latest Network Infrastructure and Usage Map (NIUM) updates reflect a broad refresh of network capacity, asset, and generation datasets – most notably new updates to IDNO areas, grid supply points, LCT registers, and all embedded capacity register layers, alongside updates to unutilised capacity layers, site datasets, and overhead line and pole records. Together, these updates enhance the accuracy, completeness, and reliability of NIUM, ensuring it reflects the most current view of network utilisation, constraints, DER, and infrastructure development. The Open Data Portal is aimed at meeting customers' evolving needs and interests, providing a wide array of datasets that are leveraged by stakeholders for a breadth of initiatives to deliver new, innovative services to the energy market. A full list of datasets is available on the portal's data catalogue with examples presented in Annex D. Figure 2 below

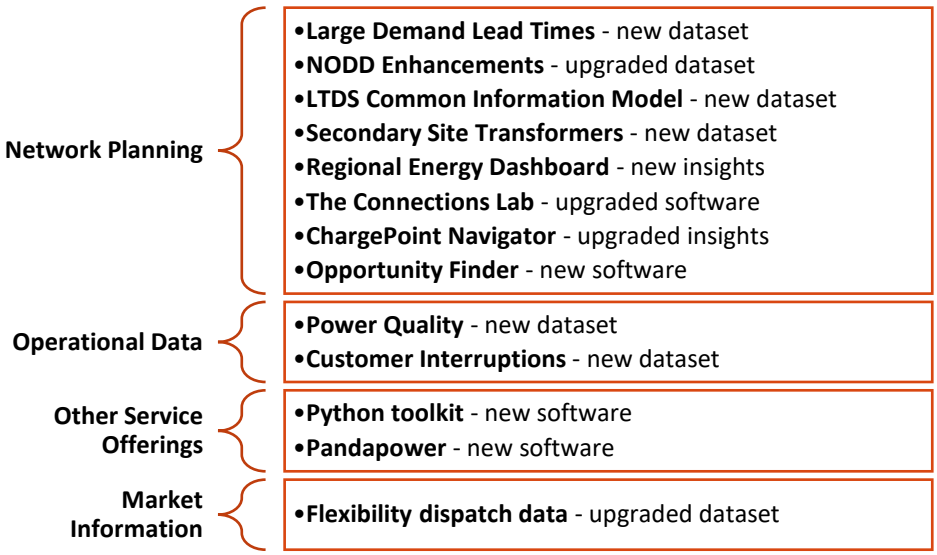

Figure 2. DSO data roadmap - new and expanded datasets in 2025/26

shows the recent datasets, dashboards and services published this year in the DSO Data Roadmap – further information can be found in the DSO performance panel report.

Publishing Network Operational Data

Our Network Operational Data Dashboard (NODD), launched in late 2023, has quickly become an industry-leading tool by giving unprecedented transparency into connection queues and real-time network activity. It sits at the heart of our wider DSO efforts to unlock capacity and speed up connections through better data sharing and analysis, and making this information available to stakeholders is an important step toward developing new flexibility services, operating the network more dynamically, connecting customers faster and reducing our reliance on traditional reinforcement.

As shown in Figure 3, the NODD dashboard provides real-time updates on customers' queue status, including readiness for connection and need for reinforcement. By allowing customers to monitor their own queue status and others', the tool supports those looking to connect in choosing a site which best fits their connection needs – feeding into the optimisation of planning across the network. Recent updates have expanded this visibility even further by adding clearer insights into the generation pipeline, milestone progress and grid supply point level detail, making it easier to track how projects are progressing toward Clean Power 2030 and beyond. In particularly, we extended the NODD to include local authority-level views, to support local actors in Net Zero planning. A new feature called Your Local Outcome has been added to the NODD this year giving local authorities, planners, and clean energy groups clear visibility of renewable and storage capacity in their area. It shows both connected and contracted projects, helps track progress against net-zero or clean-energy targets, and supports better planning, investment decisions, and community engagement.

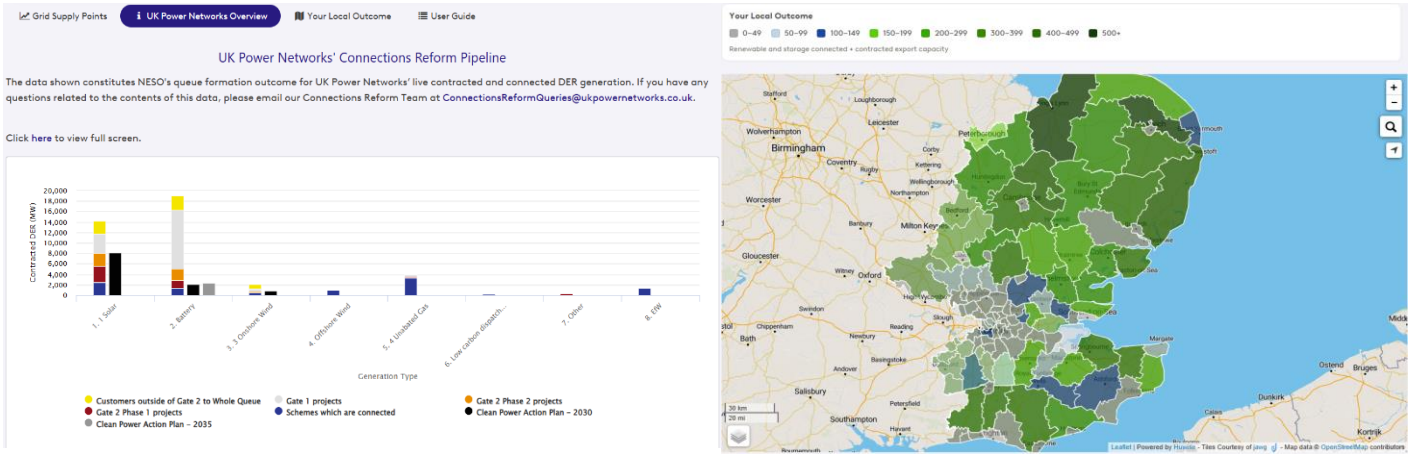

Figure 3. NODD enhancements — UK Power Networks Connection Reform Pipeline and Your Local Outcome

Last year, we published the Large Demand Dashboard to give developers, planners and local authorities a much clearer view of how large demand electricity use is growing across our network. By combining anonymised data on connected sites, real-world demand behaviour and a live pipeline of upcoming 5MW+ projects, it helps users make quicker, better-informed decisions on land use, energy planning and infrastructure investment. This year, we strengthened our strategic support for data centre growth through The Connections Lab by improving transparency, spatial insight and early-stage decision-making. Building on work with the GLA and Essex County Council, and using Regen's mapping of optimal development zones, developers now have clearer signals on viable locations and early visibility of timelines through our Large Demand Lead Times dataset.

5.1.2 How we are engaging with stakeholders to incorporate local planning into our network planning process

As the local landscape shifts towards EVs, heat pumps and DERs, our network planning will increasingly need to consider decarbonisation plans across the region to account for evolving customer needs.

Building local energy planning into network planning

Local authorities play a key role in shaping how decarbonisation is delivered at a local level, supporting the UK's Net Zero transition. Most decarbonising actions depend on the uptake of LCTs. Local authority Net Zero strategies set out expected patterns for LCT uptake within each area known as LAEPs. LAEPs provide geographically specific local intelligence on the expected uptake and spatial clustering of LCTs, including Electric Vehicles (EVs), heat pumps, solar PV and district heating. Grounded in local authority economic

growth and decarbonisation strategies, development pipelines and heat zoning ambitions, LAEPs bring local ambitions and deliverability to deployment assumptions that aggregate national scenarios overlook.

The LAEPs inform UK Power Networks' DFES, ensuring that local ambitions are accurately reflected in system planning. The DFES, in turn, advises the development of our network investment plans, helping us prioritise investment where it will most effectively support the transition. These network plans ultimately enable the successful delivery of local authority Net Zero strategies, creating a continuous and integrated planning cycle.

Figure 4. Six ways for LAs to share their decarbonisation plans

Our dedicated DSO Local Net Zero team proactively engage and collaborate with our 133 local authorities on their regional, or local climate change action plans including LAEPs. Through this collaboration, local authorities share their planned decarbonisation activities (e.g. plan for the deployment of EVs), that are used to enhance our forecasts with their local intelligence using our stakeholder-endorsed LAEP Support Framework. This helps shape our network investment plans to ensure we are providing a fit-for-purpose electricity network that facilitates local decarbonisation plans. To ensure the fairness of the Local Net Zero team's service, UK Power Networks has developed six different ways for local authorities to share their carbon reduction plans as shown in Figure 4.

The team has already created a diverse set of tools, datasets, and engagement programmes which are discussed further in *Section 5.5* to make it easier for local authorities to share their plans with us no matter where they are on their decarbonisation planning journey. Alongside these efforts, the Local Net Zero team and Network Insights team are incorporating the insights from local planning into our own forecasting and planning initiatives. One of the biggest steps forward over the past years was bringing up-to-date local insight directly into our 2025 DFES, using detailed data from local authorities with strongly-evidenced, data-driven decarbonisation plans. Working closely with these local stakeholders has made our forecasts even more grounded in real-world conditions and helped us shape more realistic demand projections by drawing on local housing pipelines, EV uptake and heat pump rollout data, and it has allowed us to embed place-based priorities into our scenario planning. The Materiality and Confidence Assessments by the Local Net Zero team to embed local plans into the DFES are outlined in Figure 5.

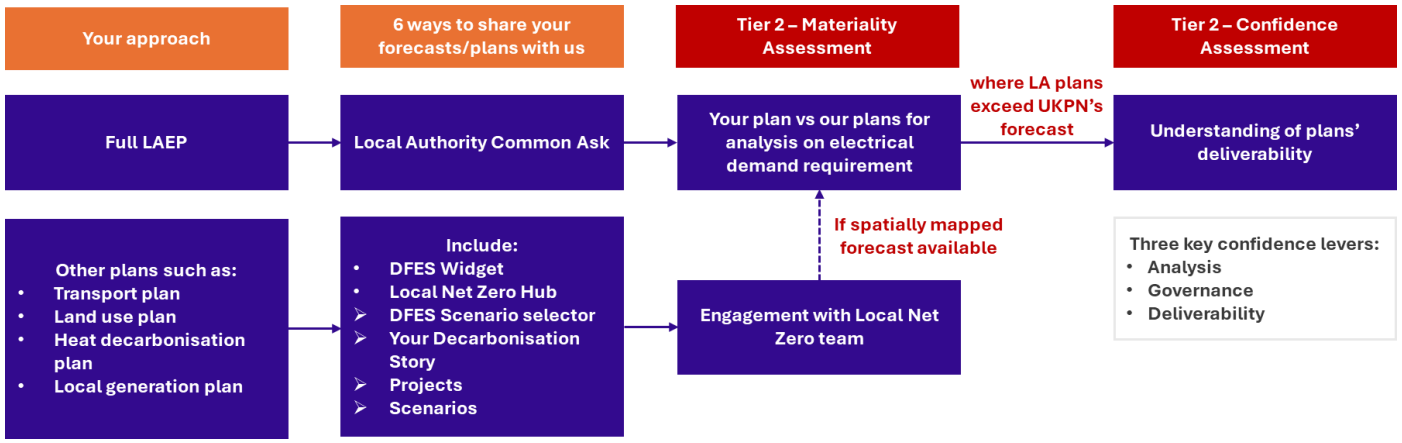

Figure 5. Materiality and Confidence Assessment of LAEPs

To date, we have integrated **15 LAEPs covering 66 of the 133 local authorities in our licence areas, establishing the broadest LAEP integration** in the sector. Our long-term forecasting tool SFS, has also been expanded to analyse the network impact of new LAEPs that allows us to evaluate the projected impact of a local decarbonisation plan down to the secondary substation level. This year, we have also integrated local authority housing trajectories and major development clusters with tRESP pathways into our DFES, ensuring our forecasts better reflect local ambition, delivery constraints and pipeline maturity. **We collected housing development data across all 121 planning authorities, achieving 100% coverage for our 133 local authorities**. For the large-scale demand assessment, Regen undertook a confidence assessment across key sectors including data centres, ports, rail, aviation and industrial electrification. We are now consolidating these insights into a single forecast output through a transparent and robust process.

5.2. Our approach to considering boundaries and interfaces and how we are working across different energy vectors, including heat and transport, to facilitate whole system optimisation

The modern energy landscape extends beyond traditional electricity grids to encompass diverse forms of energy, including heat and transportation. By leveraging advanced data analytics and innovative technologies, we strive to optimise the utilisation of resources and infrastructure across these boundaries. In a period of significant technical challenge and rapid system transformation, strong collaboration across the sector has become even more critical. Whole systems thinking in its widest sense is fundamental to facilitating the achievement of Net Zero at the lowest whole system cost for society and is a key part of UK Power Networks' open data and optimisation efforts across the DSO and DNO.

5.2.1 Our approach to considering boundaries and interfaces

We partner with neighbouring distribution and transmission networks to align decisions to best serve customer needs. We share borders with two other DNOs – Scottish and Southern Electricity Networks (SSEN) to the southwest and National Grid Electricity Distribution (NGED) to the northwest and interface with over 18 independent distribution network operators (IDNOs). Coordination activities with the transmission network owner (National Grid Electricity Transmission (NGET)) and the NESO are also critical to maintaining the smooth functioning of our network. Across these boundaries, we coordinate throughout our network planning process and are working to build and improve real-time data sharing initiatives to identify and manage constraints and faults.

Coordination with other distribution networks

Our coordination with other distribution networks and system operators is crucial to supporting local energy planning as well as our core network planning activities. This work is key to supporting customers who connect at or near these boundaries and ensuring efficient data sharing across GB electricity networks. Table 1 provides an overview of some of these coordination activities and a further list can be found in our Whole Systems Register which is updated annually on our website.

Table 1. How we are working with other distribution networks

Initiative/Working Group (WG)	Description
Data Exchange WG	Working with DNOs to improve data-sharing under ENA EREC G111
IDNO Flexible Connections Technical WG	Led development of EREC G113 guidance on managing curtailment at network boundaries
Interoperable CIM Network Models WG	Supporting Ofgem LTDS changes and coordinating CIM interoperability testing
NESO RESP Technical WG	Collaborating with NESO, Ofgem and DNOs on the transitional Regional Energy Strategic Plan
ED3 Approach to flex (through ENA)	Defining ED3 flexibility use cases and updating the Common Evaluation Methodology
Primacy WG	Developing NESO–DSO protocols for managing conflicting operational requirements
Dispatch Interoperability WG	Standardising an API (based on OpenADR 3.1) to streamline dispatch instructions
Settlements WG	Aligning DNO approaches to calculating flexibility provider payments
Baselining WG	Delivering a standard flexibility baselining approach for 2025
DSO Collaboration Forum	Developing consistent benefit-reporting methodologies for DSO Performance Panel submissions
Strategic Connections WG	Working with DNOs to speed up renewable and BESS connections through shared methodologies
Open Data WG	Chairing monthly cross-network meetings to drive data standardisation for NESO
Connections Reform Implementation WS	Supporting delivery of the industry-wide Connections Reform programme

Coordination at the transmission-distribution (T-D) and system boundary

Regional Development Programmes (RDPs)

RDPs are an important point of collaboration between UK Power Networks, NGET and NESO. These projects identify where network constraints are preventing customers from connecting and aim to provide tools and resources to help. This allows DERs to connect faster, ahead of reinforcement which, in some cases, is planned for over a decade into the future.

We have established an RDP to explore how to best address the existing fault level issues at Sundon grid supply point. Working closely with both NESO and NGET, the project aims to resolve the current limitations that restrict further connections at the site. Successfully addressing these issues would unlock approximately 400 MW of new generation capacity, supporting the Government's Clean Power 2030 Action Plan, which currently depends on the completion of wider transmission reinforcements.

As part of this work, network models were exchanged with NESO to enable joint technical studies, improving transparency and strengthening operational collaboration between our organisations. A series of dedicated sessions and workshops were held to review findings and assess feasible solutions. The studies confirmed that DERs are technically capable of providing reactive power services to support voltage management at this location. This is a significant insight and will be taken forward by NESO as part of ongoing ED3 developments to address voltage excursions and related issues across the transmission system.

Data sharing with the NESO for MW Dispatch service

The MW Dispatch represents one of the first practical implementations of advanced transmission–distribution coordination, including an early application of the ENA primacy rules. It went live in March 2025 across five GSPs on the south coast, enabling primacy rules to make DERs available when required for distribution network use. This allows customers to receive constraint payments for electricity that would otherwise have been generated and provides a more cost-effective alternative to the existing constraint management processes used within the balancing mechanism, helping to reduce consumer costs. The solution involves data exchange one week ahead, day-ahead and at multiple points during the intra-day window, as illustrated in Figure 6.

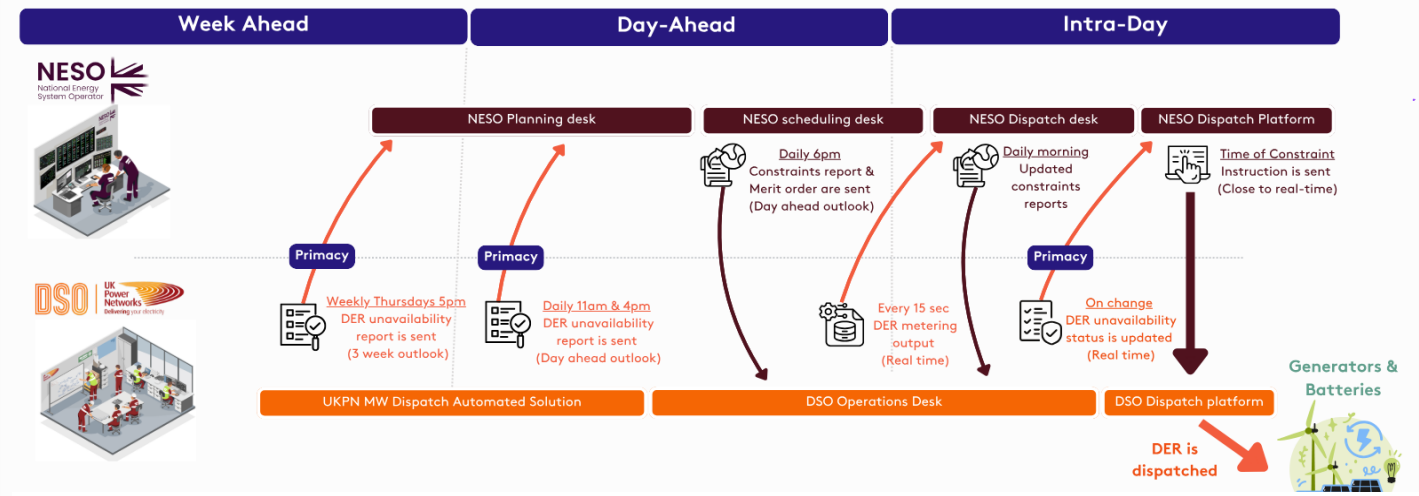

Figure 6. Data Exchange through MW Dispatch programme

Following the successful launch of MW Dispatch, we expanded data sharing with NESO to address wider whole-system issues by increasing DER visibility. This included scaling DER unavailability reporting to NESO for all DERs configured in our outage management tool and replacing manual daily PDF-based transmission outage reporting with an automated API feed, delivering more frequent updates and enabling faster, more informed operational decision-making. Additionally, through close coordination with NESO, we have enabled renewable generators and battery projects to connect and operate several years ahead of schedule, while meeting both local distribution and national system requirements. This year, we have been collaborating with GRIDSERVE to show how smart, flexible energy solutions can make a real impact on the ground. GRIDSERVE's London Gatwick Electric Forecourt is a great example which is the first dedicated EV charging forecourt at an international airport. It was also the first site commissioned under MW Dispatch in RIIO-ED2, making it a key testbed for how assets can support both customers and the wider grid. Its 3.6MW battery doesn't just help power the forecourt; it also participates in grid-balancing services, showing how flexible systems can connect earlier, run more efficiently, and strengthen resilience across the network.

Better serving battery energy storage systems

We are advocating for a more cost-effective solution to reduce the need for additional Super Grid Transformers (SGTs) by pursuing a non-firm connection for import customers (e.g. customers such as commercial battery projects which draw energy from the grid), preventing additional costs from being passed down to customers. Building on discussions initiated with NESO last year, we have now formalised a non-firm import arrangement at Ninfield. This avoids the need for a fifth 240 MVA SGT and is supported by a new Forward Power Flow control scheme, an enduring mechanism that safely manages import levels while delivering substantial savings for developers. These benefits come in addition to the two non-firm import contracts agreed last year at Sellindge and Richborough, which removed the requirement for two further SGTs. Across the RIIO-ED2 period, these three projects alone are expected to reduce costs to DER customers by approximately £45 million.

Connections Reform

The introduction of Ofgem's Connections Reform has required closer coordination between networks, given the scale of reassessments needed across the transmission connections queue. Over the past year, this work has enabled improved data

alignment and more structured joint planning across the industry. Throughout this process, UK Power Networks has been a strong advocate for the implementation of CMP435. We have played a leading role in a number of workstreams, including chairing cross-DNO discussions to establish a common approach to translate the revised transmission queue into the distribution queue. Following the first CMP435 window, we also invited NGED colleagues to a lessons-learned session to ensure we continue to offer the best possible service to our customers.

Technical Limits

The insights from DERMS and collaborations across industry resulted in a new approach being put in place by the ENA's Strategic Connections Group called Technical Limits, enabling quicker connection at the transmission-distribution boundary. Customers are allowed to connect on a non-firm basis ahead of transmission reinforcement. Low-carbon projects can connect sooner when smart, coordinated solutions unlock network access while keeping the system secure. Working closely with NESO and NGET, we have established Technical Limits at 22 GSPs, unlocking 4.6 GW of capacity and directly accelerating 59 customer connections (almost 2 GW) before transmission works are complete. Alongside this, we developed a phased plan to release additional capacity at applicable GSPs, supported by a clear policy for fairly allocating headroom and an engagement process that ensures customers can express interest in the released capacity. The goal is to enable more renewable generation projects to connect to the EPN and SPN networks without waiting for major transmission upgrades, with success measured through customer satisfaction, the volume of generation connected at constrained GSPs and the proportion of projects securing earlier connection dates. Within the Strategic Connections Group, we continue to lead the push for consistent implementation of this solution across GB. Due to the ongoing connections reform, several projects are currently on hold. However, customers who had established technical limits dates have been granted protected status within the queue, provided their projects had already progressed sufficiently.

Examples of recent collaboration to better plan our network

Effective network planning increasingly depends on close coordination with stakeholders across local government, system operators, industry partners and academia. Over the past year, several targeted collaborations have significantly improved the accuracy, transparency and efficiency of our strategic planning processes.

- Last year, ahead of the final approval and implementation of Connections Reform, we have been supporting Ofgem and the NESO with preparations for it. We, working alongside our DNO colleagues, provided breakdowns of our pipeline and advised on the expected connection timings of the contracted generation, in several stages. On a more localised level, we have continued to engage with NGED regarding the complex issues at Walpole GSP**.** With the purpose of facilitating customer connections, we created a unified embedded generation and battery storage queue across both DNOs and undertook comprehensive fault level studies for different scenarios. We hosted sessions with NGED and NGET to discuss the implications of the proposed medium- and long-term solutions, and we continue to hold regular forums. Following initial engagement last year, we have continued to host workshops and technical sessions to assess the thermal and fault-level constraints affecting the site. Together, we are developing a coordinated 10-year plan that identifies the most effective long-term solution, recognising that the issues at Walpole require a joint, whole-system approach. This collaboration is already feeding directly into our ED3 planning activities to ensure alignment across all partners.
- Collaborating with Open Climate Fix, the AI for Visibility and Forecasting Renewable Generation innovation project to embed local energy planning directly into our network planning processes by significantly improving our understanding of real-world solar generation on our networks. Detailed information and DSO data case study video can be found in here.
- Our collaboration with Regen, we identified optimal regional zones for future data centre development by aligning network capacity insights with emerging development clusters. This work provides developers with a clearer understanding of where new projects are most likely to be viable, helping them prioritise investment in locations with the greatest potential.
- The Network Planning tool consolidates all connections and planning data into a single modern system, replacing three legacy tools and introducing automated quality checks and consistent data governance. It delivers more reliable inputs to planning tools such as the Connections Lab, supporting a more resilient and efficiently planned electricity network.

Together, these partnerships illustrate our continued commitment to collaborative, evidence-based network planning. They ensure that investment decisions reflect real-world conditions, support local priorities and maintain a resilient, net-zero-ready electricity system.

5.2.2 How we are working across different energy vectors, including heat and transport, to facilitate whole system optimisation

The examples below showcase our strategy and collaborating across energy vectors across our operations and further evidence of this engagement is presented in Annex E.

Planning across energy vectors

Our planning to enable the transition to Net Zero fundamentally considers interactions between energy vectors as users look to decarbonise and electrify their energy needs. These interactions are at the core of our DFES 2026 modelling which we believe is critical in enabling the transition to Net Zero. We model unique sets of demand drivers aligned with the **NESO 2025 Future Energy Scenarios** to represent the speed of decarbonisation and level of societal change in future. Our forecasts for both heat and transport decarbonisation are built from bottom-up consumer choice models which consider the latest government policies and economic projections for each scenario. This level of detail helps us to understand the interactions between vectors for each potential future energy pathway.

Supporting local planning across energy vectors

Our Local Net Zero team has extensive experience working across energy sectors, including with gas utilities. The services we offer to all 133 local authorities within our licence areas are developed to facilitate local planning and to enrich our own forecasts. The LAEP Support Framework as outlined in sections 5.1.2 and 5.5.1 enables us and local authorities to share and input into our DFES. Building on this, we are working with the Department for Energy Security and Net Zero (DESNZ) and gas network operators to understand how different heating choices (such as heat electrification or hydrogen for heat) will shape the networks of the future. Using our LAEP Support Framework and SFS, we have modelled the impact of these pathways at every voltage level, right down to individual homes, providing national and local decision-makers with clearer insight into the implications of heat decarbonisation. Additionally, we recognised that local authorities were being asked to submit their forecasts separately to each network, creating unnecessary duplication and administrative burden. To address this, **we collaborated with Cadent and SGN in 2025 to develop the first Local Authority Common Ask Template**, a single, standardised format and incorporates the forecasting requirements of the gas networks alongside our own. Local authorities only need to complete this template once and share it with both their local gas distribution network and UK Power Networks DSO, streamlining reporting and supporting more consistent, cross-sector planning. **In 2026, the Local Authority Common Ask Template has expanded for a major step towards a more consistent, joined up approach to planning the energy system with our DSO peers, NGED, SSEN and SPENW .** Local authorities will no longer have to spend time and money sharing the same local data in many ways to networks. This means LAEP outcomes can be shared and interpreted quickly, helping councils to make decisions on heat, transport, and energy infrastructure planning more easily. Standardising LAEP outputs also gives DSOs more consistent, higher-quality data to feed into key network planning and investment processes – such as DFES and the DNOA. Furthermore, we have developed the LAEP+ planning tool to support local area energy planning, featuring a wide array of data sources including gas network topology from Cadent and SGN. The data can be used by local authorities to make preliminary assessments of hydrogen suitability and understand which properties do not have access to a gas connection when scoping and planning decarbonisation projects.

Supporting customers across vectors

This year, in response to local authorities seeking wider support for decarbonisation, we expanded our work to NHS England to accelerate solar deployment across NHS estates. **Building on the ChargePoint Navigator platform, we created Opportunity Finder** in partnership with pilot trusts. The tool integrates public and proprietary data to provide early digital pre-connection guidance, enabling NHS trusts, community energy and schools to rapidly assess suitable buildings for rooftop solar and share proposals directly with our connections team. Collaborative design with the pilot trusts ensured a simple and practical user experience that streamlines project planning, reduces workload, and improves the quality of submissions reaching our teams. Opportunity Finder will support more organisations in reducing carbon emissions, lowering energy costs, and delivering wider benefits for patients and the public.

Innovating across energy vectors

Our innovation projects are another important way that we engage across energy vectors to better understand and plan for the future of energy on our network. The innovation team works across six core industry themes, which include a focus on whole energy system projects. In 2025/26 we have collaborated **five heat, two transport, two gas and three projects which focus on other energy vectors**. Our work across these vectors will help us plan our network, support consumers and work to speed decarbonisation across the UK.

Decarbonising heat is a major focus of our stakeholder collaboration, given that heat networks are expected to grow from around 3% of UK heat demand today to about 20% by 2050. Through the HeatScape project, we are working with Arup, Environmental Resources Management and Bring Energy to map existing and future heat networks, assess their electricity needs under different scenarios, and integrate these insights into our SFS to inform long-term network planning. Building on our earlier Flex Heat Networks work, HeatScape combines shared datasets, advanced modelling and customer engagement with Bring Energy's heat network users to explore flexibility options such as thermal storage and to support wider uptake of low-carbon technologies. Together with our Heatropolis initiative, this partnership-led approach demonstrates how we are co-designing solutions with industry to ensure electrified heat networks can grow in a way that is both low carbon and manageable for the electricity system. We are also trialling flexibility from heat networks through Heatropolis.

Future Fleet helps the freight industry transition to electric HGVs by combining smart charging, on-site battery storage, and solar generation to reduce peak demand and avoid costly network upgrades. By integrating logistics, energy systems, and network planning, it demonstrates innovation across multiple energy vectors to deliver flexible, low-carbon freight electrification at scale. Indus 2.0 pioneers cross-vector innovation by enabling secure data sharing between electricity and gas networks, giving operators a unified view of industrial energy use. This integrated approach improves our forecasting and supports more effective, whole-system planning for industrial decarbonisation across electricity, hydrogen, gas blends and biomethane.

5.3. How our enhanced digitalisation and DSO capabilities are informing our future upgrade plans and flexibility procurement

Technology, data, and enhanced digitalisation are the key enablers for a smarter and more reliable network that can provide capacity to our customers at the lowest cost. Our DSAP outlines our approach, aspirations, and action plan under three main pillars: People and Process, Technology, Data and Information. This holistic approach not only enables us to continuously enhance our existing digital capabilities to plan, design and operate our network efficiently but also presents us with a new set of tools and insights to increasingly collaborate with a broader spectrum of stakeholders such as flexibility providers, local authorities, fellow network operators and cross-vector organisations. We are working with key technology partners to develop innovative software solutions that exploit the full set of data available to us both internally and externally to make optimum decisions. We are not only investing in building capabilities in data and technology but also elevating our competencies in people and processes so we can fully exploit the benefits of digitalisation.

5.3.1 Enhanced DSO capabilities to inform our future upgrade plans and make smart investment decisions

One of the key DSO capabilities is the ability to accurately forecast network needs. We have developed the SFS to model demand, generation, network constraints, and load-related expenditure forecasts, with insights up to 2050. These inputs are used for long-term investment planning, and feed into key publications such as the LTDS, Network Development Plan (NDP) and the Network Scenario Headroom Report (NSHR). This year, we strengthened our forecasting and planning approach by updating core assumptions to deliver more accurate and granular projections of future demand and generation across our regions. These improvements enable us to integrate local development insights, including housing growth and decarbonisation plans, directly into our investment assessments, ensuring that network planning reflects real-world conditions and emerging local priorities.

Our modelling is now aligned with national Carbon Budget requirements through integration with the Transitional Regional Energy Strategic Plan (tRESP), ensuring coherence between local forecasts and national pathways. We enhanced our EV forecasts by incorporating more detailed supply-chain modelling, updated our solar PV assumptions to reflect the requirements of the Future Homes Standard, and strengthened our data-centre demand projections through extensive engagement with developers. We have also included Connections Reform pipeline data, allowing us to base generation and storage forecasts on deliverable projects rather than speculative applications, reducing the risk of over-investment. These enhanced capabilities significantly improve our ability to plan for the uptake of EVs, heat pumps, rooftop solar, battery storage, and heat networks, strengthening the accuracy of long-term load growth and capacity needs. Collectively, these advancements supports our DNOA process, positioning us to facilitate the transition to Net Zero while maintaining reliability and value for customers.

The granular outputs produced through this process have enabled the DSO to analyse a diverse range of scenarios at the individual asset level as well as the total network. The SFS load modelling forms the basis of our NDP where the DSO identifies the system needs – any areas on the network where the forecasted load is greater than the firm capacity of our assets. After we have identified the needs across our network, it maps out the available options to resolve each system need either through reinforcement or through flexibility in an optioneering process. The DSO Strategy team evaluates this full suite of options to deliver the most cost-effective recommendations to our Supervisory Board.

Another instance where we are enhancing our DSO capabilities is through increasing network visibility across our low voltage (LV) substations. We use our LV analytics tool to estimate loading on all our LV network, and since 2023 it has been used to set the LV baseline for our long-term forecasting tool. The LV data produced through this work is now published on our Open Data Portal and this enhanced network visibility will help us to best serve our customers into the future. Additionally, UKPN Secondary Site Utilisation data gives us early sight of potential challenges on the network and enables us to take action, either through deploying one of our toolboxes of smart solutions or investing in targeted network upgrades.

5.3.2 Leveraging enhanced digitalisation, technology, and data to drive flexibility procurement

Within our RIIO-ED2 Business Plan we **committed to deferring £410m of load-related network investment and connecting more than 1.2GW of new generation**, by harnessing the flexibility of customers connected to our network. Our enhanced network modelling supports these ambitions through strengthening our granular network visibility. Our Business Plan also shared our intent to support day-ahead procurement and greater coordination with the NESO to release whole-system benefits and encourage reduced flexibility prices through increased competition.

In 2025, we modernised flexibility procurement by leveraging enhanced digitalisation, automation and data-driven systems. Through our partnership with EPEX SPOT, we migrated all flexibility markets onto the Localflex platform, creating a fully automated, API-integrated service that unifies registration, bidding, dispatch and settlement. This digital transformation enables both day-ahead and long-term auctions, automated payment calculations and improved alignment with wholesale markets. Automated asset approval now achieves 87% approval within a day, supported by real-time data exchange, automated meter data transfers and transparent market clearing logic. More than 95% of participating assets in the day-ahead market are LCTs such as EV chargers, heat pumps and battery storage, reflecting the growing role of flexibility in supporting Clean Power 2030 ambitions and strengthening network resilience. Since April 2024, the data-enabled day-ahead market has delivered 11 GWh of flexibility across more than 40 zones, demonstrating how digital tools and smart processes now underpin efficient and scalable flexibility procurement.

Flexibility is a central operational tool, and we strengthened transparency last year by publishing our Flexibility Dispatch Framework, which explains how, where and when flexibility is activated. Drawing on experience from our Operations and Flexibility Markets teams and external providers, the framework ensures dispatch decisions remain targeted, fair and consistent, and are focused on delivering the greatest system benefit. This year, we further improved visibility by responding to stakeholder requests to increase the frequency of publishing our dispatch data. Having already been accessed more than 100,000 times in its monthly format, the flexibility dispatch data is now published every morning. This is a first for any DSO flexibility market and aligns our reporting with other major flexibility markets, making it easier for third parties to integrate DSO opportunities into wider market dashboards and enabling flexibility providers to optimise their commercial strategies with more up-to-date information.

Through enhanced digitalisation and advanced data analytics, we are using smart meter voltage monitoring to inform needs for flexibility. Real-world trials with AMP and Octopus demonstrate that household flexibility dispatched through our day-ahead market can prevent voltage excursions at street level, improving customer outcomes and informing a scalable framework for future services. This demonstrates how data-driven processes and streamlined digital workflows can unlock EVs as flexible, low-carbon resources while maintaining strong safety and performance standards.

Our DSO data science team expanded its role in developing forecasting and data-driven tools, enabling short-term operational forecasts using machine-learning techniques that drew on historical load patterns, weather data and real-time network information. Alongside this, we are progressing medium-term flexibility forecasting, using a probabilistic methodology that analyses historical power flows, real-time headroom, long-term weather projections and upcoming connections to identify likely future constraints. These enhanced capabilities are improving operational decision-making in the Control Room, strengthening the performance of our flexibility processes, and supporting more accurate planning of future flexibility needs.

We are also supporting wider system participation through new digital tools and guidance. Our Local Net Zero team co-developed the Local Authority Guide to Flexibility with UK100 and the Association for Decentralised Energy, giving councils practical steps to use flexibility as part of their decarbonisation plans. The guide explains how local assets, such as EV charge points, heat pumps, batteries, solar farms and public buildings, can be aggregated to reduce costs, generate revenue and support a more renewables-led electricity system. By simplifying processes often viewed as complex, and aligning them with Local Area Energy Plans, we are enabling councils to take a stronger leadership role in mobilising flexibility across their communities.

5.4. How the activities from our DSO, load related expenditure, and Digitalisation Strategy and Action Plan interact with one another and interface with the SOO

When UK Power Networks launched the UK's first independent DSO in 2023, we solidified a flexibility-first approach and set an ambitious target of reducing reinforcement costs over by 2028. The ambition of this target mirrors our ambition at the DSO to develop industry-leading flexibility solutions which facilitate efficient use of network assets to support the anticipated uptake of EVs, heat pumps and renewable generation. Unlocking capacity through flexibility is particularly important given the current lengthy queues to connect new generation and storage due largely to transmission constraints. The DSO's role in delivering timely capacity expansion at lowest cost is central to unlocking the connection of LCTs and renewable generation and accelerating Net Zero across our network.

Our Load Related Expenditure programme is directly shaped by DSO activities. Following our DNOA Methodology, the DSO market tests all system needs before considering reinforcement, ensuring that flexibility is prioritised wherever feasible. Where reinforcement is required, it is undertaken on a targeted, needs driven basis. This demand led approach ensures that expenditure delivers the greatest system value, supports whole electricity system outcomes, and keeps costs as low as possible for consumers. In practice, this means LRE investments complement the flexibility solutions delivered by the DSO.

Our DSAP sets the digital foundations needed for a modern, flexible electricity system. Digitalisation enables infrastructure and market participants to exchange information seamlessly, supporting the coordination and optimisation required for decarbonisation. Through our digital initiatives, we are increasing visibility of network data for stakeholders, providing spatial and planning insights to local authorities, sharing market-facing operational information to support broader sector participation, and developing interoperable, smart-ready technologies to unlock cross-vector flexibility. These capabilities directly strengthen the DSO's ability to procure flexibility and improve the quality and timing of LRE decisions.

Smart optimisation is where all of these elements come together, combining network data, forecasting models, digital tools and stakeholder insight to ensure operational and investment decisions are optimised across financial, technical and whole-system considerations. It does this by publishing insights through our Open Data Portal and NODD to support developers, local authorities and market participants, incorporating stakeholder intelligence such as LAEPs and engagement feedback into DFES forecasting and network modelling, and driving continuous improvement in flexibility procurement, forecasting and LRE prioritisation. In essence, smart optimisation leverages digital tools and DSO intelligence to stretch every reinforcement pound further, increase the value of flexibility, and equip stakeholders with better information.

5.5. How we are collaborating and partnering with other stakeholders in the co-development of strategic regional projects, plans and Net Zero strategies

Our Local Net Zero team is a key part of how we interact with Local Authorities. The team has been established to facilitate local Net Zero plans, providing expertise from the electricity sector to complement local knowledge and create credible, ambitious, and actionable decarbonisation plans. By engaging with local communities, governmental entities, industry leaders, and environmental advocates, we foster an inclusive approach to tackling the challenges of decarbonisation. Through transparent communication and shared expertise, we collectively identify opportunities, address obstacles, and innovate sustainable solutions. Across the tools and training we offer; our aim is to enhance and accelerate skills and capabilities in local authority teams to kickstart their initiatives and advance their energy planning.

UK Power Networks' Local Net Zero initiatives include a dedicated LAEP open data page (distinct from our general Open Data Portal) and the LAEP+ planning tool, benefiting millions of people in our region. As recognition of our continued collaboration, our Local Net Zero team has won the Team of the Year at the Transport + Energy Awards 2025 for our cooperative efforts with local authorities, providing expert advice, data, and digital tools to support decarbonisation plans.

5.5.1 Supporting local and regional stakeholder projects, plans, and Net Zero strategies

LAEP Support Framework

Our stakeholder-endorsed LAEP Support Framework provides a three-tiered collaborative support service, reviewing regional or local climate change action plans and using them to inform our network capacity planning. This ensures UK Power Networks can support decarbonisation plans whilst investing with confidence. Tier 1 offers annual reviews of local area energy or climate action plans, assessing them against key themes and sharing insights through a bespoke decarbonisation story to guide further engagement. Tier 2 provides deeper collaboration through materiality and confidence assessments to evaluate network impacts, validate assumptions against DFES scenarios, and support inclusion in regulatory investment processes. Tier 3, offered where needed, delivers major scheme cost-benefit analysis, detailed engineering assessments and joint work on strategic projects that

may involve transmission interfaces or significant infrastructure investment. Together, these tiers ensure consistent support from early-stage plan review through to major investment readiness. The Figure 7 shows the interaction between local climate change action plans and our LAEP framework.

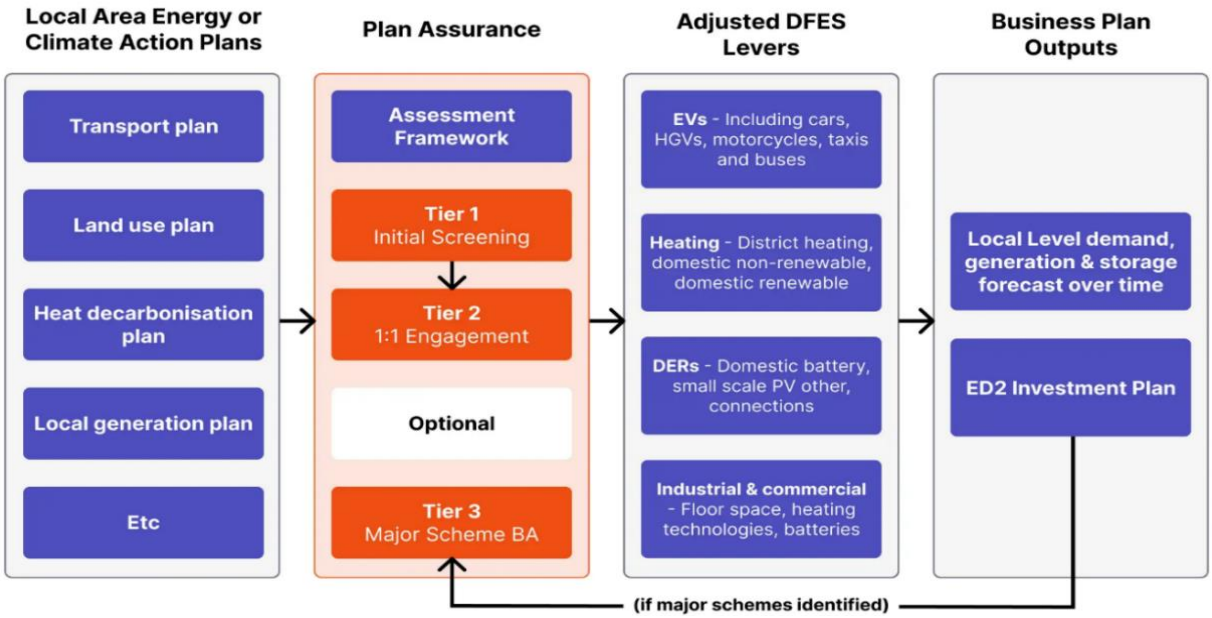

Figure 7. Our LAEP Support framework

Examples of Collaboration

- UK Power Networks led the development of the Local Authority Common Ask, a standardised data-sharing template for local energy planning. Initially launched across electricity networks, the initiative expanded last year to include local gas networks (SGN and Cadent), and further extended this year across DSOs (NGED, SSEN and SPENW). Most recently, adoption has been supported through collaboration with consultancies ERM and Regen. The Local Authority Common Ask enables local authorities to submit granular spatial forecasts and LAEP outcomes in a consistent format, removing the need to share the same data in multiple ways across networks. This saves time and costs for councils, especially the 54 local authorities spanning multiple operators, while accelerating decisions on heat, transport, and energy infrastructure.

- Another great example is the collaboration with UK100, a cross-party membership organisation that supports ambitious councils in achieving their Net Zero targets. It fosters collaboration, knowledge-sharing, and partnership-building among members to accelerate action on climate change to support local leaders in their decarbonisation efforts. Throughout 2024, we worked together on multiple events and initiatives with the highlight being the launch of the Energy Toolkit – Navigating the Net Zero Energy Transition. This toolkit provides elected leaders, cabinet members, and officers with actionable steps to reach their Net Zero ambitions. Our partnership grew in 2025 with sponsorship of their Beyond Targets report on climate action benefits, plus a Cenex guide on Powering Local EV infrastructure for economic and green gains. This year, we hit another milestone with Unlocking Flexibility: A Guide for Local Authorities, showing councils how to tap flexibility markets for new revenue and dynamic energy systems. Overall, these tools cover strategy, planning, EVs, and flexibility to empower local leaders in building resilient energy futures.

5.5.2 How stakeholders can access people and information within UK Power Networks to support collaborative local and regional projects

LAEP+ Planning Tool

The LAEP+ planning tool, makes it easier for local authorities to develop and share their latest decarbonisation plans (e.g., deployment of EV charging points) with us as early as possible and build understanding of the certainty of decarbonisation plans to enhance our forecast with local intelligence. This year, by **providing access to 64 (up from 52) datasets specifically tailored for the LAEP+ planning tool**, we address the common challenges faced by local authorities in decarbonisation efforts. These challenges include limited resources, expertise, and data access. The platform facilitates the development of credible and investable energy plans, incorporating factors such as market trends, transport electrification, and social inclusion policies, alongside geospatial network infrastructure data. Through extensive engagement with 133 local authorities, we have identified and addressed key

obstacles to achieving Net Zero. **Currently, 106 local authorities are onboarded and logged in, using the platform to support work on energy plans.** The LAEP+ planning tool is under continuous development, with updates, new datasets, and additional features in the pipeline, as set out in the LAEP+ Data Roadmap as shown in Figure 8.

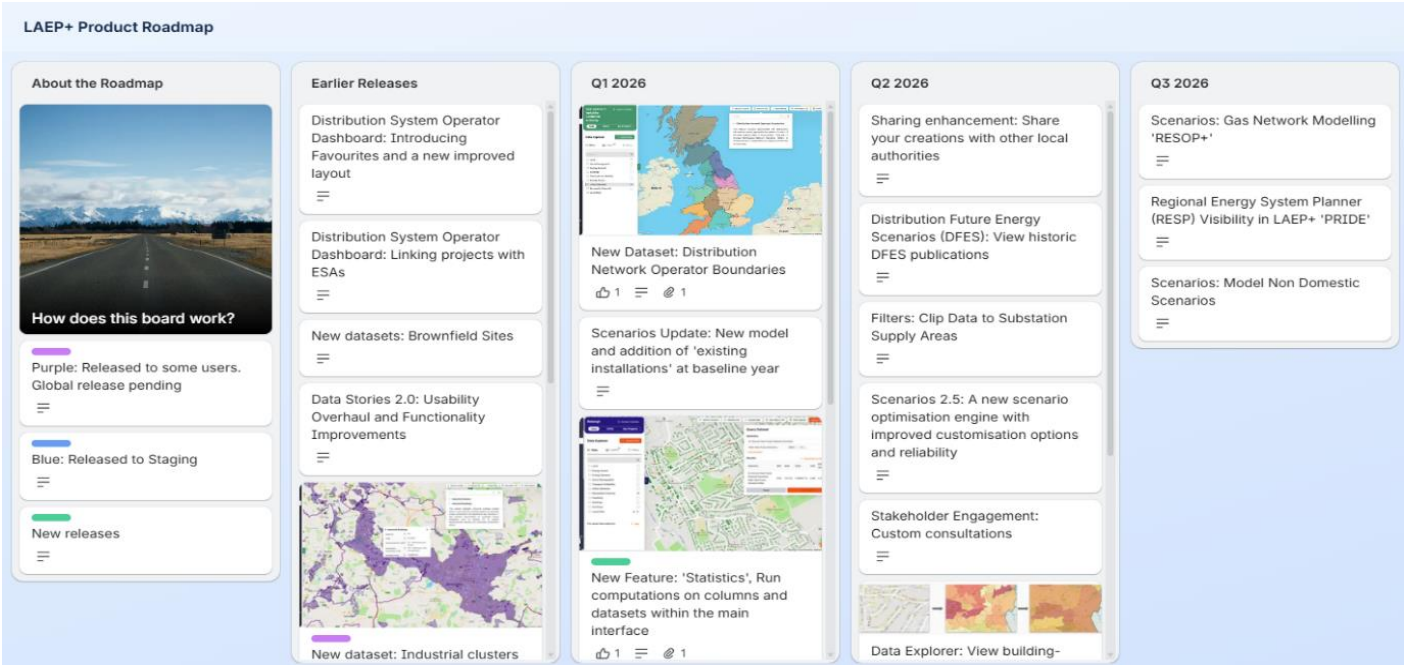

Figure 8. LAEP+ Planning Tool Data Roadmap

Our collaborative approach, reinforced by user acceptance testing and training resources, ensures maximum value for local authorities in their transition to Net Zero. We have also worked with customers to refresh the Your Local Net Zero Hub website, with a focus on user experience and ease of use – making Net Zero planning resources, tools and data more accessible. The figure below outlines the key features available within the energy planning tool.

Our LAEP+ planning tool serves as a centralised platform connecting stakeholders with resources and support necessary to achieve Net Zero goals. Stakeholders can leverage the LAEP+ planning tool to:

- **Support, Collaboration, and Facilitation:** The Local Net Zero Team at UK Power Networks offers support, collaboration opportunities, and facilitation of best value solutions to aid local climate plans. This includes fortnightly drop-in sessions for the LAEP+ planning tool on topics prioritised to help local authorities maximise the value of the tool. This training is further complemented by 1-2-1 training with the Local Net Zero team and a suite of self-service guides and videos.
- **Sharing Net Zero Plans:** Utilise features like the DFES Scenario Selector, Your Decarbonisation Story via the LAEP+ planning tool and Local Authority Common Ask through 1-2-1 engagement with the Local Net Zero team to set Net Zero estimates, share forecasts and information on projects, guiding UK Power Networks' investment plans and ensuring effective infrastructure investments to support electrification.
- **Resources:** access a comprehensive range of resources related to LAEP, including tools, frameworks, case studies, and third-party resources.

LAEP Open Data Page

The LAEP Open Data Page, within the wider UK Power Networks Open Data Portal, was developed to make it easier for local authorities and energy planning practitioners to access more than 170 relevant datasets to support their Net Zero planning efforts.[2] To help local authorities and their collaborators understand how to access and use the data on the page, we engage with them regularly and maintain a dedicated focus on the role of Open Data in enabling effective Net Zero planning. Stakeholders can access data related to the operation of the electricity network and even explore case studies showcasing how local authorities and LAEP practitioners are utilising data for their energy planning efforts.

[2] Annex F provides an overview of some of the data showcased on the LAEP Open Data Page.

Regional Energy Dashboard

The Regional Energy Dashboard is now in beta state and offers an interactive visual overview of open datasets from a regional perspective, with maps and charts drilling down to LSOA-level energy performance, plus links to further resources. Users can explore network infrastructure such as primary substations (with demand headroom RAG status), flexibility needs via DNOA, and 5-year LTDS projects, alongside Net Zero metrics on connected low-carbon tech by LSOA, embedded capacity registers, and future energy scenarios by local authority. It also covers generation potential through Integrating Renewable Energy and Ecosystem Services (IRENES) based wind and solar land suitability maps. All underlying data are downloadable via the catalogue, with sources like our Open Data Portal.

DFES

The DFES forecasts demand and generation technologies uptake to 2050, aligning with established energy scenario worlds outlined by NESO. Stakeholders can access interactive summaries, technical reports, and raw data files to inform climate action plans. Key features of DFES include:

Our DFES models' different drivers of change to create scenario worlds illustrating potential energy futures. Stakeholders can explore these scenarios to inform local planning efforts**.** Summary report for DFES 2026 accessible here. This year, we have enhanced accessibility of our DFES data by publishing the full dataset on the Open Data Portal. Previously, DFES information was distributed across multiple standalone files for each technology type, creating additional effort for stakeholders. We have now consolidated these into a single, streamlined dataset, making it significantly easier to access and work with the information that underpins our DFES analysis. We launched a stakeholder survey to provide their feedback on the NDP and NSHR methodology.

Data Webinar Series

- **Data in Action – Connections Lab:** Stakeholders can access people, data, and insights through the Connections Lab – an open, free, public web application designed collaboratively with customers to provide transparent, self-serve analysis of network constraints, connection capacities, and curtailment expectations. The platform brings together multiple datasets, modelling tools, and configurable study options, allowing users to explore connection scenarios, understand constraints, and replicate our assessment approach. This data webinar series supports collaboration through regular working groups, co-development sessions, ongoing stakeholder engagement and dedicated feedback channels, ensuring the tool evolves based on user needs. For direct interaction, stakeholders can engage with our DSO Data Science, Network Access, and Development teams through Data in Action webinars, Q&A sessions, feedback forms, enabling deeper insight-sharing and partnership on regional and local energy projects.
- **Data in Action – LTDS CIM webinar:** This webinar series covered the latest LTDS updates, a live demonstration of CIM adaptation, and real-world examples of LTDS applications today and future directions. The series will continue in 2026 to enhance stakeholder engagement with further updates and case studies.

5.5.3 How we are highlighting and reflecting changes in the wider data assets, digital tools, and strategic planning decisions that are feeding into the SOO

At UK Power Networks, data publication is influenced in three tranches – **retrospective, reactive, and proactive**. The sections below provide an overview of how these three tranches are used across the datasets and tools that we use and share. More information on our approach to open data can be found in our Open Data Principles.

Retrospective – Retrospective data sharing involves consolidating existing datasets that UK Power Networks already publish, such as the Long Term Development Statement and the Embedded Capacity Register, so that our data users only need to go to our Open Data Portal to access this data, under clear and standardised open data licensing.

Reactive – Reactive data provision is often provided off the back of stakeholder engagement through events such as our connections customer forum or the work that we do with local authorities (see *Section 5.5* for further details). The Open Data Portal additionally has a data request form so that stakeholders can request datasets from us. From the launch of our Portal in October 2021, we have **received 535 data requests**. Where the data is not already published, these trigger a data triage process, where the respective data owner within UK Power Networks considers whether a dataset can be published, consulting relevant risk specialists when required. As emphasised elsewhere, our ability to share data with stakeholders is a key part of our ambition to deliver excellent service for our customers and to facilitate Net Zero through an efficient electricity network. Our decisions to release new datasets and tools, like GSP-level connections data through the NODD, are often tied to direct requests from stakeholders.

Proactive – Proactive data sharing involves longer term thinking, anticipating what data our users might want in the future. An example of this is the yearlong engagement with local authorities that culminated in the dedicated local area energy plan page, the

LAEP Open Data Page. The page is consistently being revised with increasing amount of data to suit the needs of our stakeholders. As of the publication of this document, the **LAEP open data page contains 173 datasets** (141 sourced by third parties and 32 sourced from UK Power Networks), with **99% of them available to councils** (i.e. either openly available, available via registration/subscription, or held by councils internally). Additionally, to support ease of access and analysis, 78 datasets are accessible by API. In the past year, we also collaborated with the Greater London Authority (GLA) to include a dedicated subpage which points users towards 49 GLA datasets relevant to the Net Zero use cases we identified through engagement. These cover a broad range of themes, including economic benefits, generation, heat and buildings, just transition, land use and environment, and transport and mobility.

5.6. How we are participating in the development of LAEPs, Net Zero roadmaps and other strategies and cross-utility solutions, led by local and regional authorities and supporting the communities we serve

UK Power Networks actively engages with stakeholders through various channels, including webinars, LAEP+ planning tool training sessions, and regional engagements. These engagements provide opportunities for local authorities and partners to share insights, collaborate on projects, and access tailored support. Regular cross-sector webinars bring together speakers from UK Power Networks, councils and partner organisations to showcase data, digital tools and the support available from the Local Net Zero team in accelerating decarbonisation. Fortnightly LAEP+ planning tool training sessions equip local authorities and their delivery partners with the skills and insights needed to use the platform effectively for net zero planning. In addition, regional engagement sessions with local councils and planning bodies, ensuring local needs and priorities help shape future energy networks and coordinated decarbonisation strategies:

Supporting other organisations through our Open Data Portal

A data reuse is where the data published on our Open Data Portal, is used by another person or company. This can take various forms such as referential data in another system, a geographic view on a smart phone, or to form part of academic research. The main principle of open data is that it can be used freely, reused and re-distributed by anyone. Whilst this means we do not always know how our data is being used or see the direct benefits of publishing the data. we can be confident that we are supporting organisations within the communities we serve. A full list of shared UK Power Networks' Open Data Reuses on our website, with three recent examples set out below:

- University of Bath uses UK Power Networks' Primary Substation Distribution Areas dataset together with corresponding datasets from other DNOs, to construct a comprehensive primary substation network dataset covering the whole of GB.
- Status of European Electricity Grids: The primary feeding areas and demand headroom data from our Open Data Portal were used to form a European view of the different ways network operators present their capacity availability.
- City Science UK Power Networks primary substation: City Science integrates our distribution areas, substation locations, and headroom capacity data into a free GIS platform alongside census data, environmental datasets, transport networks, buildings, and other energy sources. This enables users to access comprehensive energy infrastructure insights at no cost. City Science leveraged our datasets to challenge other DNOs on releasing comparable open data.

6. Conclusion

This Collaboration Plan outlines the key steps we are taking towards embracing a whole-system approach as the energy landscape continues to evolve. By strengthening collaboration and partnership with our customers, fellow network operators and cross energy vector partners, we are building the foundation to tackle the complex challenges of our interconnected energy ecosystem. Working together positions us to manage the energy trilemma more effectively, supporting reliability and affordability while accelerating carbon reduction and long-term sustainability. Through proactive engagement and innovative thinking, we can achieve a more integrated and resilient energy system that serves the needs of both current and future generations.

Leveraging the power of data, technology and digitalisation, we are incrementally enhancing our capabilities to make informed and optimum decisions for investment and network planning. These improvements enable enhanced operational efficiency, and drive innovation across the whole energy ecosystem. We are committed to open engagement, sharing insights and gathering industry feedback to ensure our decisions reflect real-time needs. As a part of this commitment, our SVI platform as part of our Open Data portal will continue to host useful datasets for our stakeholders.

ANNEXES

DSO | UK Power Networks Delivering your electricity

7. Annexes

The annexes presented showcase a breadth of supporting information. Annexes A, B, D, and F provide additional detail regarding aspects of our ongoing work which contributes to smart optimisation (e.g. details regarding our System Visualisation Interface, our latest strategy documents, and examples of data provision) while Annexes C, E, G, H demonstrate how we have engaged with stakeholders (e.g. engagement logs) in the development of the SOO and show how, on an ongoing basis, we are using stakeholder feedback to improve our Collaboration Plan and System Visualisation Interface to maximise value for our stakeholders.

7.1. Annex A – System Visualisation Interface Requirements

Item	Requirement	Status	Description
3.1.1.	*Provide a representation of the licensee's existing network assets and known associated constraints using both static and dynamic data. Such data should include the type, capacity, and location of assets and the location and specific nature of known constraints, on all parts of the distribution network, at all voltage levels. Heat maps and raw data must be made available through an Application Programming Interface (API) that is common across all licensees.*	✓	The NIUM is layered with unutilised grid capacity, unutilised primary capacity, unutilised secondary capacity, distribution network option assessment signposting and HV/LV recommendations, IDNO, GSP points, grid, primary and secondary sites, overhead lines (LV-EHV all voltage levels), poles (LV/HV), flexible connections, fossil fuel sites, wind sites, biogas sites, storage sites, PV sites, infrastructure upgrades, low carbon technology register. all data is available through an API.
3.1.2.	*Provide a representation of the licensee's network in the future, including expected constraints. Such data is to be presented in a format and time horizon to be determined collectively by licensees and their stakeholders and made available through an Application Programming Interface (API) that is common across all licensees.*	✓	Our DNOA layers indicate where and when we are forecasting network constraints. This acts as a signal for the flexibility market, as an invitation to provide flexibility services to UK Power Networks. In the event we do not secure enough flexibility, we may reinforce – with or without flexibility. We also publish our LTDS Infrastructure Upgrades – which shows reinforcement works and when we expect them to take place. Regional Energy Dashboard shows key operational data by selected local authority area. All available via API.
3.1.3.	*Highlight where operational and growth challenges on the licensee's network might emerge, including future constraints, and where opportunities for flexibility services will arise, as a means of avoiding or deferring the reinforcement or replacement of assets.*	✓	See above.
3.1.4.	*Incorporate data sets, digital tools, strategies and reports that exist under their respective DSO, LRE and Data & Digitalisation strategies, including but not limited to: LTDS, heat maps, NDPs, DFES, network impact assessments, data visualisation and digital tools, strategic network planning outputs, Primary and secondary reinforcement data incl. the Load Index submission, LRE strategies and plans, DSO strategies and Digitalisation Strategies and Action Plans, flexibility strategies and procurement plans*	✓	As per 3.1.1., our SVI incorporates these elements. DSO Strategy and Digitalisation Strategy are linked in the Portal's top banner under "Our Strategies". Reports are linked in the Portal's top banner under "Tools&Reports". Our flexibility procurement plans are reflected in the HV DNOA and LV DNOA layer of our SVI and further information can be found on our DSO Flexibility Tender Hub.
And 3.2.	*Licensees must work with their stakeholders to develop a System Visualisation Interface that meets the principles of transparency, accessibility and interoperability.*	✓	As with our whole Open Data Portal, we are consistently working with stakeholders to develop an SVI that meets the principles of transparency, accessibility and interoperability. For example, as part of the Beta testing for this tool, comments and issues were logged, solutions

Item	Requirement	Status	Description
			proposed and tracked until completion. Additionally within our User Guide and Additional Information page, stakeholders are able to review any how to videos, review map layers and our Data Roadmap, submit a data request, submit feedback, submit reuse cases on relevant datasets, and as always email us for anything further.
3.3.	*The SOO does not require the development of a digital map or platform. The System Visualisation Interface must be a section of the licensee's website and open data portal that provides access to this package of forward-looking, open and accessible, digital network tools and related information.*	✓	The SVI is available here:. It consists of forward-looking, open and accessible, digital network tools and related information. Alongside this specific section of the website, the overall Open Data Portal provides full visibility of our open data tables, functionality to create API keys, and bespoke development of charts and maps.
3.4.	*Interoperability between the different licensees' System Visualisation Interfaces, is critical to enable users to efficiently interface with these tools and related information. In meeting their obligations in respect of the SOO we expect interoperability to be achieved through data best practice (DBP). The licensees' compliance with DBP will standardise the format of any common data assets shared and make the same data assets easily shareable and accessible across all licensees. We also expect network assets to be described using the CIM data standard, as developed through the LTDS working group.*	✓	Embracing Ofgem's Data Best Practice principles, we ensure easy access to information, fostering understanding and enabling customer influence on plans through platforms like our Open Data Portal. By sharing extensive DSO data via our SVI and Open Data Portal and championing best practices internationally, we actively support the adoption of open data platforms and foster collaborative learning. An important part of making this data as useful as possible is the standardisation of a Common Information Model (CIM). Cross-industry efforts to develop a CIM help build a platform for enhanced collaboration, facilitating seamless access and integration of data from across the energy system. This integration enables stakeholders to effectively extract and utilise data for informing comprehensive cross-vector and whole-system plans. We published our latest LTDS in CIM format. Project updates are available here.
3.5.	*If, in the process of collaborating with local stakeholders, licensees decide that there is the need for additional digital products or services, these products or services should be incorporated into the SOO.*	✓	We regularly collaborate with stakeholders regarding general data requests, the System Visualisation Interface, and generally the Open Data Portal. For each of these, we log and review issues/feedback/requests, perform triage assessments, and proceed to solutioning and data publication where applicable.
3.6.	*The System Visualisation Interface should be accessible to stakeholders no later than 1 October 2023 and for the remainder of the Price Control Period. It is expected that the content that can be accessed through the System Visualisation Interface will develop over the course of the Price Control Period, however, as a minimum, the digital tools described at 3.1.1 and 3.1.2 must be accessible by 1 May 2024.*	✓	The SVI is already made publicly available (*linked in the below cell of this table*), and it will remain available and will develop over the course of the Price Control Period.
3.7.	*The licensee must ensure that the System Visualisation Interface is available on its Website.*	✓	Available here: NIUM
3.8.	*The licensee must update information within its System Visualisation Interface as soon as reasonably practicable and make clear to users the polling frequency for specific data sets and the time and date of the most recent update.*	✓	Within our User Guide and Additional Information page, under the Map Layer Dataset Details, and overview of each map layer, dataset name, additional information, last update date and dataset link is provided.

7.2. Annex B – Key strategies and documents

Key documents, strategies and platforms referenced throughout our Collaboration Plan.

Platform/Publication	Web link
Open Data Portal	Open Data | UK Power Networks
Data Best Practice Guide	Data_Best_Practice_Guidance_v1.pdf (ofgem.gov.uk)
DSO website	UK Power Networks Distribution System Operator (DSO)
DSO Panel Report	Publications and useful links
Network Operational Data Dashboard	Network Operational Data Dashboard
System Visualisation Interface	Network Infrastructure and Usage Map (NIUM)
Distribution Network Option Assessment	Distribution Network Options Assessment (DNOA)
Distribution Future Energy Scenarios	Distribution Future Energy Scenarios
Whole Systems Register	Whole System Register
Your Local Net Zero Hub	Your Local Net Zero Hub
LAEP Open Data Page	Local Area Energy Plan
LAEP+ Planning Tool	LAEP+ Planning Tool - Your Local Net Zero Hub
Connections Lab User Guide	The Connections Lab
MW Dispatch Overview	MW Dispatch Solution Overview
Regional Energy Dashboard	Regional Energy Dashboard
ChargePoint Navigator	ChargePoint Navigator - Your Local Net Zero Hub

7.3. Annex C – Other engagement logs examples

UK Power Networks keeps logs of multiple sources of engagement. The table below outlines examples of the types of engagement logs held and actively reviewed.

Category	Description	Resulting action(s)	Items logged	Time period over which items logged
Data Requests	Log of data requests/desires based on user feedback *(e.g. network asset data in shapefile GIS format)*	Respond to data requests, leading to data triage assessments, and data publication where applicable.	535	October 2021 – February 2026
Whole Systems Register	Log of individual instances where UK Power Networks has consulted or collaborated with stakeholders, including local authorities, other energy networks, and large energy users	Solutions arising from working and coordinating collaboratively across the whole value chain (networks, LAs, consumers, retailers, technology firms, etc.) to deliver societal benefits and low cost, secure electricity to customers.	*Count of engagements in the 2026 publication is expected to rise over ~90 (up from 74 in 2024)*	*May 2025 – April 2026*

7.4. Annex D – UK Power Networks Open Data Portal dataset examples

Examples of the types of data stakeholders can access and utilise are noted below; a full list of datasets is available on the portal's data catalogue.

- *Network Infrastructure:* data describing the electricity network including the location and characteristics of equipment. Examples include:
    - Key characteristics of active Grid and Primary sites – list of active grid and primary sites with key characteristics including spatial coordinates, year commissioned and asset counts against the site.
    - Long Term Development Statement (LTDS) Infrastructure Projects – provides details of current network and from 132kV to lower voltage of a primary substation, and plans for the development of UK Power Networks' three licence areas over the next five years. The LTDS is updated twice a year: end of May; and end of November.
    - UK Power Networks Licence Area LV Poles – shows the location of UK Power Networks' LV poles.
- *Network Usage:* data related to the historic, current and future operation, performance and usage of the electricity network. Examples include:
    - Distributed Future Energy Scenarios Network Scenario Headroom Report (DFES NSHR) – indicates the amount of unused network capacity for demand and generation over time to 2050 on our bulk supply point (grid) and primary substations. It shows where we may need to further reinforce our substations or procure flexibility services beyond our existing plans, if the energy system develops as indicated in each of our scenarios.
    - LCT Register – volume of demand and generation LCTs connected or accepted to connect to UK Power Networks' secondary substations.
    - Embedded Capacity Register (ECR) – lists all generation, storage and flexible demand resources – there are two files separated based on whether the installed generation capacity or export is 50kW to 1MW, or from 1MW upwards.
- Additional examples of *connections data*:
    - LCTs connected to the UK Power Networks network – volume of LCT for both generation and demand (under 1MW) connected to UK Power Networks by primary substation. Includes primary site spatial coordinates and covers LCT types: EV charging point; heat pump; hydro; combined heat and power; solar, wind; and battery storage among others.
    - Long Term Development Statement (LTDS) Table 6 New connection interest – LTDS report on a 0-5 year period, describing a forecast of load on the network and envisioned network developments; Table 6 indicates the level of new connections interest at each primary substation.
    - Connections Reform Outcome Aggregated by Local Authority – this dataset presents the outcome of Connections Reform, aggregated for each of the 133 local authorities within UK Power Networks' licence areas. It provides visibility of the original export capacity that was eligible as part of Connections Reform, together with the capacity in the revised transmission queue.
    - Open Street and Roadworks connected to UK Power Networks' activities – details of open street and roadworks permits and private activities taking place on the highway or on private land within the UK Power Networks footprint. See what work we are doing, where and when you can expect us to finish. This report is refreshed every two hours.
- Additional examples of *curtailment data*:
    - Constraint Breaches History – records all curtailment events experienced by curtailable-connection customers. Details regarding curtailment, the methodological approach, quality control, and assurance are provided as well.
    - Standard profiles UK Power Networks uses for electricity generation – typical load profiles that UK Power Networks uses for different generation technologies. This dataset aids curtailment studies, and this dataset is an Incentive for Connections Engagement (ICE) commitment.
    - EHV Network Outages – frequency and duration that EHV electricity assets are out of service for planned outages from UK Power Networks' Network Vision - an outage planning tracking tool. Which provides a customer facing web portal to provide information about generation customer curtailments and shutdowns to our customers and provides an interface for our customers to engage with our Outage Planners.

7.5. Annex E – Examples of cross vector engagement and collaboration

Log of 9 engagement activities by cross-vector category in 2025/26 (Transport, Heat, Gas and Other).

Category	Context or Project Name	Description of the engagement	Stakeholder	Start – End Date
Other	CommsConnect NIA	CommsConnect NIA explores how a deeper understanding of the interdependence between mobile and electricity networks could strengthen resilience across both systems. By monitoring connectivity at thousands of sites, the project seeks to improve fault response and post-fault analysis, ultimately helping deliver more reliable services for customers and communities.	Mobile Network Operators (Vodafone, EE), JRC, Ofcom, DSIT, Anglian Water, Scottish Water, SGN	January 2025 – March 2026
Other	Constellation	Constellation is a world-first innovation project that will see powerful computers installed in a series of substations, turning them into smart substations. This will enable each local substation to analyse millions of data points on how the network is running and reconfigure the network based on specific conditions. Optimising our substations in this way will free up capacity and help facilitate the rise in renewable energy generation.	ABB. GE Vernova, Siemens, Vodafone, University of Strathclyde	April 2021 – September 2026
Gas, Other	CReDo+ Climate Resilience Demonstrator	CReDO+ (Climate Resilience Decision Optimiser) is a digital platform that uses digital twin technology to help safeguard infrastructure networks against the impacts of climate change. By creating virtual replicas of assets and combining historic and predictive data, it simulates how systems like power lines would perform during extreme weather. CReDO+ brings together data from electricity, water, gas, and telecoms to map interdependencies and identify shared risks, helping operators make smarter investment decisions and build long-term resilience across sectors.	Network asset owners in electricity, gas, water and telecoms	October 2023 – March 2028
Heat	HeatScape	HeatScape examines the impact of electrifying both existing and future heat networks on the electricity grid, and how their operational flexibility can be harnessed. By using public datasets to map potential uptake of district heating and modelling various decarbonisation scenarios, the project will provide improved insights into future demand to support more informed network planning decisions.	Arup, ERM and Bring Energy.	April 2025 – March 2026
Heat	Heatropolis	Heatropolis is pioneering a first-of-its-kind commercial and technical solution to create a smarter, more flexible electricity and heat network. By combining flexibility services, innovative connection arrangements, thermal storage and smart controls, the project aims to reduce electricity demand from low-carbon heat networks at peak times, helping to avoid unnecessary network upgrades.	Local authorities (Camden Council, Royal Borough of Greenwich), NESO, Heat Network Operators (Metropolitan), Private/Estate Management companies (Argent), Independent organisations (Heat Trust), Gov/Policy (DESNZ), Smart heating control specialists (Passiv UK)	April 2023 - October 2028

Gas	Indus 2.0	Indus 2.0 explores how industrial decarbonisation will influence the future energy system. The project focuses on enabling greater data sharing between electricity and gas networks to build a more complete, cross-vector view of industrial energy usage.	SGN, NESO	April 2025 – May 2026
Transport	Future Fleet	Future Fleet will help the freight industry shift to electric heavy goods vehicles by modelling the best places to charge, how to keep costs down, and how to avoid putting too much pressure on local electricity networks.	Maritime, Voltloader, Energy Systems Catapult, Baringa	March 2026 – August 2026
Heat	Snug (Smarter Network Upgrades)	Snug aims to make energy flexibility markets easier for organisations to access by developing new commercial models. The project will enable social landlords to offer flexibility services through energy-efficiency retrofits and clean energy technologies installed in their homes.	Local authorities, housing associations, other social landlords	April 2026 – August 2026
Heat	SHIELD	SHIELD aims to make the transition to Net Zero affordable for low-income households by using innovative solutions such as heat from distributed data centres, alongside solar panels and battery storage to balance energy supply and demand.	Energy Services Company (ESCo)	March 2023 – December 2028

7.6. Annex F – LAEP Open Data Page data provision examples

Some examples of helpful information, which is not about the electricity network, that is provided in the interest of potentially useful comparison, map overlays or administration of open data operations include:

- London specific feature – indexes data held in the London Datastore that would be relevant to London boroughs engaged in decarbonisation planning.
- LCT connected to UK Power Networks' Secondary Sites – allowing local authorities to have a geographically granular view of the number of LCTs in different areas.
- New flexibility for local authorities two-page summary – giving a clear overview of the benefits of flexibility and how local authorities can get involved.
- Local Zero podcast – with Regen and Essex County Council, to discuss the power of open data and Net Zero planning tools.
- Case studies using the LAEP Open Data Page – providing a compilation of local authority and LAEP practitioner case studies using the UK Power Networks LAEP Open Data Page.

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