

Social DSO

Bio 1: Allan

Allan is a retired pensioner living on a low fixed income and with a long-term health condition. He worries about managing energy bills and staying warm during the winter months, especially as his home is poorly insulated. He is wary of technology and has very low digital literacy.



Bio 2: Emma

With a degree in environmental sciences and over 15 years of experience in sustainable energy projects, Emma has been leading a community energy group for the past five years. She is passionate about making renewable energy accessible and affordable for her community.



Goals

- Reduce energy bills and keep heating costs manageable.
- Maintain a comfortable living temperature at home.
- Secure financial assistance and support to help meet his needs.
- Access clear, simple and trustworthy information and support.

Behaviours

- Practices basic energy-saving measures such as turning off lights and appliances when not in use.
- Monitors thermostat settings to control heating costs.
- Hesitant to adopt new technologies due to cost concerns and confusion on where to go, what to do and who to trust.
- Avoids digital communications and worries about scams.

Challenges

- Difficulty affording rising energy bills, especially in winter.
- Limited knowledge about energy efficiency measures and financial assistance programmes.
- Low knowledge and confidence on where to go for advice, engaging with utilities and how to switch tariff or supplier.
- Low digital literacy and access makes it hard to gain advice, install new tech and make savings.
- A poorly insulated home makes him vulnerable to cold temperatures and exacerbates poor health.

Goals

- Support the community in transitioning to renewable energy through distributed generation.
- Retrofit local properties to be more energy-efficient and use renewable energy.
- Help communities to become more resilient and reduce their fuel bills.
- Secure funding and support for energy projects within the community.

Behaviours

- Seeks information and resources on renewable energy technologies and funding opportunities.
- Engages with the community to raise awareness and gather support for energy projects.
- Co-ordinates with energy experts/professionals to plan and implement projects.

Challenges

- Finding affordable and practical solutions for retrofitting properties and accessing data to help this.
- Navigating complex regulatory environments and securing necessary permits.
- Ensuring projects are financially viable and securing funding for them.
- Finding the time to do all this.

Social DSO

Needs

- A reliable power supply and early warning of power outages.
- Clear communication on grants and support for vulnerable customers, including the Priority Services Register.
- Clear information on energy efficiency and insulation options to reduce heating costs.
- Specialised customer support for vulnerable customers such as non-digital access routes, proactive outreach and trusted local intermediaries.
- Access to funding for projects, and support to identify opportunities and write bids.
- Technical advice to inform how and where projects are developed and access to local network data.
- A simple, speedy and transparent process for approving and connecting community energy assets (e.g. renewable energy, heat pumps).
- Easy access to flexibility markets directly or via aggregators, and information on how communities can benefit from flexibility opportunities.

Examples of DSO activities delivered this year

- Expanded and enhanced the Social DSO Fund, providing matched funding and structured governance to support community-led solar, battery storage, EV charging hubs and energy-saving projects – improving access to capital for community groups and enabling local resilience.
- Delivered the 'Take Charge' initiative which provides free, impartial advice to customers who face the steepest transition barriers. Take Charge has supported 19,285 customers through its helpline, website and community events, delivering £6.67 million in direct financial benefits.
- Ran targeted outreach and engagement, including a flagship Social DSO conference, and incorporated feedback from vulnerable customers, community energy groups and the DSO Stakeholder Panel into service design and network planning.
- Quantified and explained the benefits to customers from DSO activities – including for energy bills, quicker connections and access to revenue, the environment, local growth and jobs.

How DSO will help Social DSO stakeholders

Our market development commitment

Increase access to and participation in flexibility and local energy markets by providing simple routes, non-digital options, clearer guidance and data, and proactive support for community energy groups and those at risk of being left behind.

Our network operations commitment

Work collaboratively to increase system efficiency, using smart technology and partnerships to maximise clean renewable energy when it is available.

Our network development commitment

Deliver timely investment to enhance the network's ability to support net zero targets; and promote broader sharing of net zero benefits by supporting clean energy investments, sustainability and climate projects in vulnerable communities.

Contribution to our Social DSO commitment

Implement the Social DSO Strategy by embedding fairness, equity and inclusivity into every operational and investment decision, ensuring vulnerable customers and community groups benefit from the transition through accessible support, co-creation and measurement of social value outcomes.

Network Operator



Bio 1: Sarah

Sarah has 20 years of experience in the energy industry, holds a senior management position with a gas distribution network operator and specialises in network operations. She oversees operational efficiency and strategic planning, including collaboration with other utility companies.



Bio 2: Alex

Alex is chief technology officer for an independent distribution network operator (IDNO). With a focus on network development and innovation, Alex plays a key role in shaping the future of energy distribution systems.



Goals

- Ensure the safe and reliable distribution of gas to customers.
- Optimise network operations to meet regulatory requirements and enhance customer service.
- Implement innovative technologies and collaborate with utility partners to improve network efficiency and sustainability.

Behaviours

- Assesses network performance and identifies improvement opportunities.
- Collaborates with stakeholders and utility partners to respond to operational challenges and new opportunities.
- Proactive in adopting new technologies and industry best practice.

Challenges

- Managing and upgrading aging infrastructure while transitioning to sustainable energy solutions.
- Meaningful collaboration with other utility companies given time pressures and competing priorities.

Goals

- Drive technological advancements to enhance network resilience, flexibility and competitiveness.
- Foster collaboration with stakeholders to promote sustainable energy solutions.
- Ensure compliance with regulatory standards while promoting operational excellence.

Behaviours

- Explores cutting-edge technologies for network modernisation and decarbonisation.
- Aligns network development initiatives with long-term sustainability goals.
- Looks for new market opportunities to provide infrastructure and connections.
- Navigates complex regulatory environments and fosters industry partnerships.

Challenges

- Integrating renewable energy sources into the network while maintaining system stability.
- Adapting to changing regulatory frameworks and market dynamics.
- Balancing cost-efficiency with infrastructure investments for future-proofing the grid.
- Accessing data and finding time for partner collaboration.

Network Operator

Needs

- Access to advanced data analytics tools for real-time monitoring and decision-making.
- Collaboration with industry partners, including the DSO, to drive innovation, implement best practices and support whole-system efficiency.
- Regulatory support and clear guidelines to navigate the evolving energy market landscape.
- Information and co-operation to enable joint planning of infrastructure and upgrades to it.

Examples of DSO activities delivered this year

- Implemented processes for IDNO sites to be able to operate and control connections using the SP ENW Active Network Management (ANM) system, ensuring a level playing field for customers.
- Worked with NESO to implement processes and schemes that create more capacity for IDNOs to connect additional capacity to their distribution networks.
- Collaborated with Cadent and Northern Gas Networks to create Local Area Energy Plans alongside local authorities, helping to meet stakeholder needs collectively and efficiently.
- Worked with Cadent to promote hybrid heating systems, helping both networks enable customers to decarbonise their heating systems cost-effectively.
- Co-developed operational and planning data sharing standards that allow consistent data exchanges between DNOs/DSOs and NESO, and agreed to exchange more datasets, more often to increase co-ordination.

How DSO will help Network Operator stakeholders

Our market development commitment

Ensure a clear and robust process for engaging key participants which will help network operators to facilitate participation in the flexibility market.

Our network operations commitment

Use automation systems for efficient operation to benefit network operators by enhancing decision-making processes across networks and ensuring reliable energy supply.

Our network development commitment

Operate transparent decision-making processes that support network operators in making informed decisions about strategic interventions, optimising network operations and enhancing system reliability.

Contribution to our Social DSO commitment

Collaborate with other utilities and IDNOs to support vulnerable customers and communities, and to support progress on net zero transition across the whole-energy system.

Local Authority and Combined Authority



Bio 1: Isabella

Isabella is a climate change officer for a local authority. She is passionate about sustainability and plays a key role in developing and implementing Local Area Energy Plans (LAEPs) to achieve net zero targets.



Bio 2: Sam

Sam is a combined authority strategy director in a large urban area. They are responsible for economic development, energy and the area's local growth plan. The plan seeks sustained economic, housing and employment growth in the region alongside reduced poverty and net zero transition.



Goals

- Reduce the area's energy consumption and contribute to net zero targets.
- Support residents and businesses on energy awareness and adopting sustainable practices.
- Identify, promote and implement decarbonisation measures – including energy efficiency, renewable energy, low carbon heat and EV charging.

Behaviours

- Develops and implements LAEPs.
- Collaborates with stakeholders including industry, communities and the DSO.
- Works with partners to design, secure funding for and deliver decarbonisation projects.
- Keeps informed on energy and climate, raises awareness and briefs councillors.
- Monitors and reports progress on decarbonisation goals.

Challenges

- Understanding local energy consumption, flexibility options and renewable energy potential.
- Engaging residents and businesses in energy and climate initiatives.
- Lack of clarity on the role and responsibilities of DSOs in the net zero transition.
- Uncertainties around the costs and benefits of different decarbonisation technologies and options.
- Balancing high expectations on energy and net zero with budget constraints.
- Securing quick and easy connections for renewable energy.

Goals

- Support business growth and productivity and attract inward investment.
- Boost jobs, skills and opportunity and reduce exclusion and fuel poverty.
- Reduce carbon emissions in line with the authority's 2040 net zero target.
- Build cross-sector partnerships to achieve change.
- Work with the elected mayor, keep them informed and deliver their priorities.

Behaviours

- Collaborates with businesses, the DSO, local authorities, colleges/ universities and others.
- Thinks long-term, makes connections and spots opportunities for change and barriers to it.
- Keeps abreast of big picture energy and carbon issues; relies on others for the detail.
- Intervenes when there are blockages to achieving priorities and investment.

Challenges

- Understanding the complexities of energy policies, roles, regulations and market dynamics.
- Quickly securing grid connections so new housing and housing retrofit, inward investments and renewable energy projects can progress.
- High energy costs impacting on local businesses and fuel poverty.
- Balancing economic growth, carbon and energy goals within budget constraints.

Local Authority and Combined Authority

Needs

- Strong partnerships with DSOs/DNOs to develop and implement LAEPs.
- High level and granular data on local energy use and clean energy generation potential, including user-friendly platforms for data analysis.
- Collaborative knowledge-sharing and best practice exchange.
- Government policies that support local decarbonisation.
- Streamlined regulatory processes for deploying renewable energy and low carbon technologies.
- Information and support to enable residents and businesses to act on energy and save money.
- Clear and accessible information for local partners on providing flexibility services.
- Connections – quick, cheap and collaborative to get projects underway.

Examples of DSO activities delivered this year

- Bespoke support on LAEPs. Includes advice, data and modelling tools, paying for local authorities to use the LAEP+ platform and providing free training on energy planning.
- Supported local and regional growth and decarbonisation plans and projects, e.g. on industrial development, EV charging and renewable energy, including providing data and insights and incorporating projects into network development plans.
- Ongoing quarterly bilateral meetings with all local authorities and combined authorities in our area, as well as surgery sessions and bespoke responses on specific enquiries, issues and opportunities.
- Supported strategic investment needs submissions to NESO as part of the transitional Regional Energy System Plan that will inform our 2028-2033 load-related investment plans.

How DSO will help Local and Combined Authority stakeholders

Our market development commitment

Collaborate with local and combined authorities to achieve whole system outcomes that support sustainable market development and economic growth.

Our network operations commitment

Strive to ensure reliable and resilient supply for local communities and businesses, including through enhancing network visibility through smart meters.

Our network development commitment

Work with local government and developers to provide bespoke advice on network planning, capacity and connections to support long-term projects that meet strategic energy needs.

Contribution to our Social DSO commitment

Provide information and assistance that will support vulnerable customers and community energy groups and projects and contribute to fuel poverty reduction goals.

Commercial and Industrial (C&I) Customers



Bio 1: Akria

Akria is a facilities manager for a large industrial plant, responsible for the operation and efficiency of the facility, including energy consumption.



Bio 2: Joe

Joe is commercial director of a large-scale residential property developer operating across the north of England. He wants to build high quality, low carbon, future proofed homes on time and on budget.



Goals

- Generate clean energy on-site to meet business needs.
- Sell surplus clean energy to generate income.
- Reduce the facility's energy costs including by improving energy efficiency.
- Ensure a reliable, resilient supply of electricity to maintain production levels.
- Meet the company's decarbonisation and sustainability targets.

Behaviours

- Monitors and analyses energy consumption data and energy bills.
- Identifies and implements energy efficiency and low carbon technologies.
- Seeks to understand capacity and how to reduce load at peak times.
- Supports the transition to net zero.
- Seeks to reduce costs via negotiation or alternative supply.
- Reviews and drives renewable energy generation opportunities.
- Assesses energy supply security and options.

Challenges

- High energy prices.
- Complexities of the energy market.
- Difficulty forecasting future energy needs.
- Limited knowledge on getting involved with flexibility.
- Energy inefficiency.
- Uncertainty on capacity/ability to connect and sell energy generated via the grid.
- Viability of energy efficiency measures.

Goals

- Deliver sites on time and on budget.
- Understand capacity and constraints now and in the future.
- Secure fast, reliable and predictable connections to meet site needs.
- Build long-term partnerships with DSOs to aide a site's planning, design and construction.
- Incorporate sustainable and future-proof infrastructure to achieve low carbon goals.

Behaviours

- Plans projects in multiple locations 3-10 years ahead.
- Engages early on network capacity and connection information.
- Seeks early warning on risks, issues and costs.
- Driven by process and time-sensitive schedules.
- Values standardisation across DSOs.

Challenges

- Uncertain, long lead times or delays for power connections slowing down construction.
- Limited visibility of network capacity impacting on planning.
- Complex, varied connection requirements across regions.
- Cost pressures from labour, materials and regulation.
- Meeting sustainability and regulatory targets for low-carbon homes.

Commercial and Industrial (C&I) Customers

Needs

- A reliable, safe, secure and low-cost supply of energy.
- Early visibility of planned constraints or outages.
- Ability to participate in flexibility markets as a cost-effective alternative to reinforcement.
- Advice and technical assistance on decarbonisation, energy efficiency and flexibility options.
- Clear, early and accurate network data on capacity and connections.
- Consistent processes across regions.
- Predictable timelines with transparent milestones.
- A single point of contact for large-scale and long-term developments.

Examples of DSO activities delivered this year

- Enhanced C&I customer engagement on DSO flexibility markets; provided tools and data to analyse energy use to inform decisions; and built C&I customer projects into network development plans.
- Implemented our industry leading ANM system into business as usual. This helps reduce network curtailment for C&I sites so they can maximise site capabilities while not incurring high connection costs or delays for network reinforcement.
- Used more flexibility to enable C&I customers to increase their supply capacity quickly and at lower cost; and grew flexibility opportunities for C&I customers by increasing the number of sites and requirements we tender for. Where reinforcement is needed, we create co-ordinated network development plans to avoid piecemeal upgrades.
- Identified locations likely to be constrained in ED3 and added them to ED2 flexibility tenders to procure flexibility ahead of need and create network headroom for C&I customers in key locations.

How DSO will help Commercial and Industrial Customers

Our market development commitment

Deliver inclusivity strategies that benefit C&I customers by involving them in flexibility market discussions and addressing their priorities.

Our network operations commitment

Ensure a reliable, resilient supply to support C&I customers by providing a stable energy supply, reduced disruptions and efficient network operations, including via increased network automation.

Our network development commitment

Be transparent in decision-making processes to help C&I customers by ensuring awareness of network development needs and cost efficiencies.

Contribution to our Social DSO commitment

Increase participation in the energy transition by making it easier for C&I customers to participate in flexibility and to generate and gain financial benefit from renewable energy.

Flexibility Service Providers (FSPs) and Aggregators

Bio: Taran

Taran is a resource analyst at a flexibility aggregator company that builds portfolios of flexible energy resources from residential and commercial customers. He is data-driven and passionate about optimising energy markets for a cleaner future and helping society adopt low carbon technologies.



Goals

- Maximise the value of the company's flexibility resource portfolio.
- Secure new and diverse sources of flexible energy resources.
- Encourage more individuals and businesses to participate via adoption of low carbon technologies.
- Optimise flexibility resource availability to meet market demand for flexibility services.
- Contribute to the company's growth and profitability.

Behaviours

- Analyses energy data to find opportunities for flexibility services and stacking to maximise revenue.
- Identifies and contracts with new customers for flexible energy resources.
- Monitors and optimises the performance of the flexibility resource portfolio.
- Prepares reports to communicate market trends and portfolio performance.
- Engages with NESO and DSOs to participate in flexibility markets including demand side response, ancillary services and wholesale trading.

Challenges

- Limited visibility of real-time grid conditions and flexibility needs.
- Difficulty forecasting availability of residential flexibility resources.
- Complexities in managing, securing and incentivising diverse customer types and needs.
- Lack of standard data formats and platforms for resource integration across system operators.
- Variety of prices offered for flexibility in different locations.
- Lack of ability to stack flexibility resources in different markets.
- Securing quick and easy connections for renewable energy.

Flexibility Service Providers (FSPs) and Aggregators

Needs

- Accurate, real-time, visible data on network constraints and flexibility needs to target customers.
- Standardised forecasting tools to predict customer flexibility resource availability.
- User-friendly platforms for managing and optimising customer resources across multiple markets.
- Streamlined communication channels to ensure reliable resource availability from customers.
- Standardised data formats for seamless integration of customer resources into the portfolio.
- Clear and consistent regulatory frameworks for flexibility markets.
- Support for innovation in new flexibility resource types and applications.
- Standardised market parameters e.g. products, legal agreements, baselines, qualification criteria.

Examples of DSO activities delivered this year

- Worked with Elexon and others (e.g. DNOs, NESO, Ofgem, FSPs) to drive consistency in products, procurement, stacking and contracting to ease participation.
- Enhanced datasets so FSPs can better plan, develop and target growth in their asset portfolios.
- Grew flexibility opportunities by increasing the number of sites and requirements we tender for; adding more low voltage and pre-scheduled requirements; and introduced month-ahead markets.
- Co-developed primacy rules and processes so DNOs and NESO can identify and mitigate flexibility services conflicts.
- Worked with NESO to boost opportunities for smaller, local energy assets to connect, e.g. using CrowdFlex trials to test their demand flexibility service which rewards household participation.
- Worked with ElectronConnect, our flexibility services platform provider, and with other DSOs using it, to consult FSPs to improve the experience of flexibility tenders and to harmonise processes.
- Maximised use of network monitoring equipment to create new flexibility services requirements, so FSPs can provide flexibility to reduce network demands ahead of our ED3 investment plans.
- Published decision-making process guides showing how we identify flexibility requirements.
- Tailored, regular engagement with FSPs and aggregators including a new quarterly DSO Flexibility Forum.

How DSO will help FSPs and Aggregators

Our market development commitment

Support new FSPs and aggregators by expanding opportunities for participation and promoting seamless connections between buyers and sellers.

Our network operations commitment

Apply short-term forecasting techniques and use network monitoring and control devices to efficiently manage network operations and resources so FSPs and aggregators can benefit from increased opportunities to participate in operational flexibility.
Provide transparency in network operations through clear decision-making.

Our network development commitment

Identify future network needs at all system levels so FSPs and aggregators have better insights into network development requirements.
Ensure that flexible options are market tested ahead of carrying out network reinforcement.

Contribution to our Social DSO commitment

Broaden use of flexibility services to increase the opportunities for more people across the North West to participate in the net zero transition and to make money from selling their capacity.

Bio: Andrea

Andrea is a system engineer at the National Energy System Operator (NESO). She is responsible for balancing generation and demand in real-time and ensuring the secure, efficient operation of the national transmission system.



Goals

- Maintain a secure and reliable supply of electricity across the country.
- Balance electricity supply and demand in real-time using clear, consistent DSO data.
- Facilitate integration of large-scale renewable energy generation.
- Achieve the goal of net zero electricity.
- Collaborate with DSO/DNOs and co-ordinate planning to optimise whole-system performance.

Behaviours

- Monitors real-time DSO data on electricity generation, transmission and consumption.
- Forecasts electricity demand and generation based on historical data and weather patterns.
- Issues instructions to generators to adjust output based on grid requirements.
- Manages network emergencies and ensures a swift restoration of power supply.
- Looks for standardised ways to work across DSOs to make access to distributed energy resources (DER) and flexibility easier.

Challenges

- Increasing volatility in electricity generation due to growth of renewable energy sources making it hard to balance the system.
- Variable data quality, formats and sharing across DSOs impacts pace and ease of decision-making.
- Complexities in co-ordinating electricity markets across different regions.
- Difficulty in forecasting and balancing real-time demand and supply.

Needs

- Real-time data on the performance of DERs to support system balancing.
- Standardised communication and data protocols between NESO and DSO/DNOs for a whole-system view.
- Improved co-ordination between DSO/DNOs collectively.
- Efficient, transparent mechanisms for trading flexibility services across regions and markets.
- Clear and consistent regulatory frameworks for participation in flexibility markets.
- Investment in advanced forecasting and grid management technologies developed with DSOs.
- Innovative solutions for integrating large-scale renewable and digitising network operations.
- Co-ordinated planning with other industry parties to ensure current and future energy needs can be met economically and securely.

Examples of DSO activities delivered this year

- Implemented our industry leading ANM system into business as usual. This enables connections that would have been in transmission reinforcement queues while maintaining system security.
- Worked with NESO on connections reform to optimise transmission network reinforcement queues.
- Collaborated with NESO on RESP building blocks to inform our ED3 load-related investment plans.
- Worked with Elexon and others (e.g. DNOs, NESO, Ofgem, FSPs) to drive consistency in products, procurement, stacking and contracting to make participation in flexibility markets easier.
- Co-developed primacy rules and processes so DNOs and NESO can identify and mitigate flexibility services conflicts to increase efficiency of whole system network operations.
- Established a real time data link (ICCP) to NESO for greater, live co-ordination of network operations.
- Co-ordinated with NESO to implement technical limits and forward power flow connections processes to accelerate connections timescales.
- Co-developed data sharing standards for consistent bilateral data exchanges between DNOs and NESO; and agreed to exchange more datasets, more often to increase network co-ordination.

How DSO will help NESO

Our market development commitment

Engage with NESO and others to ensure a co-ordinated approach to developing the flexibility market, supporting efficient energy supply management.

Our network operations commitment

Offer flexible connections benefits alongside NESO by ensuring reliable energy supply across the system through efficient network operations, and co-ordinate flexibility services markets to provide whole system efficiency.

Our network development commitment

Collaborate with neighbouring DNOs to support NESO in sharing information for projects like modelling EV charging infrastructure needs, enhancing overall system reliability.

Contribution to our Social DSO commitment

Commit to local action that supports whole-system net zero transition nationally.

Domestic Customer

Bio: Danielle

Danielle is a tech-savvy homeowner who is passionate about environmental sustainability. She drives an electric vehicle (EV) and wants to instal solar panels, a heat pump and battery storage to reduce her carbon footprint.



Goals

- Reduce reliance on traditional grid-supplied electricity.
- Switch from gas by getting a heat pump installed quickly and reliably.
- Maximise consumption of solar energy by installing battery storage.
- Lower her energy bills through use of low carbon technologies and energy efficiency measures.
- Contribute to a cleaner and more sustainable energy future.
- Get additional income from providing flexibility services.

Behaviours

- Actively monitors home energy consumption using a smart meter.
- Charges EV at home on a suitable electricity tariff.
- Researches and participates in energy-saving programmes and trials via her energy supplier.
- Considers ways to further reduce reliance on the electricity network by using low carbon technologies.
- Considers participating in local flexibility schemes via an aggregator.

Challenges

- High upfront costs for low carbon technologies.
- Uncertainty about the future value of solar energy ownership.
- Complexities in participating in flexibility markets for home energy storage.
- Uncertainty about low carbon technology installation and lack of local qualified traders.
- Long delays in getting connected for EV chargers and heat pumps.
- Issues with accessing smart meter data.

Domestic Customer

Needs

- A reliable power supply that can easily be connected to.
- Access to a smart meter and trust that it accurately sends data to the supplier.
- Clear information on energy efficiencies and technologies and which ones are right for her.
- Information on how flexible solutions can reduce energy bills and help you to earn money.
- Clear messages on incentives for participating in flexibility, and processes for participating.
- Access to funding to invest in new low carbon technologies and energy efficiency upgrades.
- Assurance about ability to fit solar, EV charging and heat pumps; and trust in those doing the work.
- Access to tariffs that are central to domestic flexibility.

Examples of DSO activities delivered this year

- Increased the number of areas and amount of low voltage flexibility services that domestic customers can participate in via flexibility aggregators.
- Domestic customers save on energy bills as a result of SP ENW avoiding expensive network upgrades and reducing energy use through Smart Street voltage control – as quantified in our DSO Benefits Methodology. They also benefit from quicker connections, earlier income opportunities, lower system costs, better local environments and local job creation from economic growth.
- Worked with NESO to boost opportunities for smaller, local energy assets to connect, e.g. using CrowdFlex trials to test and build confidence in their demand flexibility service which rewards households for shifting electricity use when the grid needs it, ahead of its official launch.
- Incorporated Local Area Energy Plans and facilitated low carbon connections, ensuring that network development plans address the needs and aspirations of domestic customers.
- Made it easier for domestic customers to engage by standardising practices via the Open Networks Project and with the market facilitator, enhancing the Open Data Portal with high-quality data and providing tools that help understand and manage domestic energy usage.

How DSO will help Domestic Customers

Our market development commitment

Deliver inclusivity strategies that involve domestic customers in the design of our flexibility market products, addressing their priorities like reliability, cost, fairness and practicalities of upgrading their homes with low carbon technologies.

Our network operations commitment

Enhance network visibility through smart meters so that domestic customers have a stable, reliable energy supply and can instal low carbon technologies without delay.

Our network development commitment

Develop initiatives based on customer feedback to help domestic customers adopt new technologies, ensuring awareness of opportunities within a smart, flexible electricity system.

Contribution to our Social DSO commitment

Increase participation in the energy transition by supporting more domestic customers to adopt low carbon technologies, reduce their energy bills and have the opportunity to make money from selling their capacity.

Distributed Energy Resource: Distributed Generator (DG)

Bio: Markus

Markus is a passionate renewable energy entrepreneur focused on expanding his solar farm business. He prioritises environmental responsibility and financial success, aiming to maximise revenue from clean energy generation.



Goals

- Generate and sell clean energy.
- Contribute to achieving net zero carbon emissions.
- Maximise revenue from their solar farm and battery storage.
- Secure the best locations for future solar projects.

Behaviours

- Installs and operates solar panels and battery storage systems.
- Participates in flexibility markets to sell excess energy.
- Seeks information on network constraints, flexibility needs and network investment plans.
- Researches and plans future projects based on market opportunities.

Challenges

- Difficulty forecasting curtailment (when their energy production is limited).
- Complexities in accessing flexibility markets with new assets.
- Long lead times for connecting additional solar panels to the network and uncertainty about how they may vary by location.
- Lack of information to confidently forecast costs and revenue.

Distributed Energy Resource: Distributed Generator (DG)

Needs

- Up-to-date information on current and future network constraints.
- Reliable forecasts of flexibility needs and revenues to optimise market participation.
- Transparent and affordable pricing and clear access levels for investment plans.
- Simple access to and confidence in national and local flexibility markets.
- Real-time network information to optimise market interaction.
- Quick and easy connections for solar projects and information about the best locations for them.
- Maximise power sales and minimise operational costs to support viability and profits.
- Transparency on potential curtailment risks.

Examples of DSO activities delivered this year

- Collaborated with DNOs, NESO, NGET and Ofgem to release network capacity, enabling DGs to make connections.
- Implemented our ANM system allowing us to connect DG projects, deal with transmission technical limits and monitor and control curtailment.
- Open Data Portal provides high-quality datasets that support DGs in their planning and operations.
- Established a real-time data link to NESO giving greater co-ordination of real-time network operations and more opportunities for connecting solar sites to the electricity network.
- Incorporating Local Area Energy Plans and forecasts for distributed generation, enabling DGs to align their projects with network development activity.
- Submitted forecasts of distributed generation to NESO considering the Connections Reform pipeline of accepted DG projects to inform our ED3 load-related investment plans.

How DSO will help Distributed Generators

Our market development commitment

Engage customers and aggregators in the flexibility market to benefit DGs by providing opportunities to participate in trading and promoting transparency.

Our network operations commitment

Work with NESO to allow DG sites to connect to the network faster and cheaper, while minimising curtailment even where there are transmission network associated constraints.

Our network development commitment

Develop robust forecasting processes that help DGs by identifying future network needs and promoting energy efficiency measures based on data sharing.

Contribution to our Social DSO commitment

Support DGs to operate within communities and community energy projects through provision of information and data, and enabling them to set up and expand.

Distributed Energy Resource: Battery Storage Operator



Bio: Michael

Michael is an energy storage consultant specialising in advising commercial and industrial (C&I) clients on energy solutions. He is passionate about growing his business by helping businesses reduce costs and achieve sustainability goals.



Goals

- Help C&I clients optimise energy usage and reduce costs.
- Promote the adoption of battery storage solutions for C&I clients.
- Develop innovative approaches to integrate battery storage into industrial processes.
- Contribute to a more sustainable and flexible energy network.
- Maximise his own revenues through deployment of battery storage.

Behaviours

- Analyses client energy consumption data.
- Identifies opportunities for energy cost savings and efficiency improvements.
- Advises clients on the benefits of battery storage.
- Develops and implements battery storage solutions for C&I clients.
- Looks out for new battery storage market opportunities.
- Thinks about strategic deployment, lead times to deliver a battery and best locations.

Challenges

- Limited awareness about the benefits of battery storage among potential customers.
- Battery degradation.
- Energy market complexities.
- Visibility of network data.
- Combination of short-term and longer-term requirements.
- Connections applications process and queues.

Distributed Energy Resource: Battery Storage Operator

Needs

- Clear information on the benefits of battery storage and case studies of successful deployment.
- Streamlined, timely and cost-effective grid connection processes.
- Standardised technical specifications.
- Support for integrating battery storage with existing energy management systems.
- Open access to data on flexibility, access levels and pricing models.
- User-friendly platforms that make participation in flexibility markets easy.
- Planning and network data to assess opportunities and the best places to connect.
- Reliable forecast data and close to real-time data on flexibility products.

Examples of DSO activities delivered this year

- Enhanced the Open Data Portal with updated and increased planning data sets that help battery operators to develop their asset portfolios.
- Increased the number of DNO market opportunities available for battery operators to participate in, and created more pre-scheduled flexibility options and greater certainty of revenues.
- Consulted upon and published a position on our curtailment methodology which we are applying for sites with technical limits imposed by NESO, many of which are battery sites.
- Established a real-time data link to NESO which allows greater co-ordination of real-time network operations and creates more opportunities for connecting battery sites to the electricity network.
- Implemented our industry-leading ANM system into business as usual. Connecting a 30MW battery site to the network using this has already reduced network curtailment, allowing site capabilities to be maximised without incurring high connection costs or lengthy delays.

How DSO will help Distributed Energy Generation: Battery Storage Operators

Our market development commitment

Provide marketplace platforms and data that enable battery operators to easily and efficiently participate in the flexibility market.

Our network operations commitment

Work with the NESO to allow batteries to connect to the network faster and cheaper, while minimising curtailment, even where there are transmission network associated constraints.

Our network development commitment

Seek alternative solutions to conventional reinforcement to help battery operators to engage in innovative solutions for network development.

Our Social DSO commitment

Help community energy projects be aware of and benefit from battery storage potential.